

**1.3.2 Average percentage of
courses that include
experiential learning through
project work/fieldwork/
internship during last five
years**

Link to Sample Project



1. Link to Sample Project [Bengali](#)
2. Link to Sample Project [English](#)
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8. Link to Sample Project [Political Science](#)

Bengali



KAZI NAZRUL UNIVERSITY

B.A PROGRAM 6th SEMESTER
EXAMINATION 2023

PROGRAM IN BENGALI

NAME :- SAYAN MUSTA

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PAPER NAME :- প্রবন্ধ পত্র রচনা ও উপস্থাপনা

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নবকুল ইমলামের কবিতায় মানবতাবাদ।

→ কবী নবকুল ইমলাম ছিলেন প্রকৃত মানবতাবাদী। নিজে দরিদ্র পরিবারে জন্ম গ্রহণ করায় তিনি দৈনন্দিন করেছেন সার্বিকের দুঃখ দুর্দশা। আর তাই তিনি গৃহহারাের কষ্টগান লেখেন লেখছেন। নবকুল বিশেষ জেনার পরিবারে সকল মানুষের কল্যাণের কথা করেছেন। তিনি সকলকে নিয়ে মানবতাবাদী সমাজ গড়ে তৈরি করেছেন।

গোষ্ঠী দায় বৃষ্টি কোথানে খাট খাওয়া, "নেবকুল বুকে পদচিহ্ন" অঙ্কনকারী নবকুল ইমলাম ছিলেন রকম মানবতার কবি। নিম্নোক্ত মানবতার পাঠ্য কবিতা বলাতে গিয়ে ব্রিটিশ বেনিয়ারদের জিকল পড়তে শ্রদ্ধা টাকে। সের খাটতে শ্রদ্ধা, নিম্নোক্ত মত করতে শ্রদ্ধা, মারা জীবন ধরে। প্রেম-দোলোবায়া, বিদ্রোহ-সংগ্রাম, সবকিছুই ছাপিয়ে একে এঁটেছেন নবকুলের মানবপ্রেম। মানবিক নিম্নোক্তের বিদ্রোহ, তাঁর যে প্রতিবাদ তাই নবকুলের বিদ্রোহ। সেই কারণেই তিনি বিদ্রোহী কবি। মানবিকতা কবী নবকুলের কবিতাকে করেছে আরও বেশী বয়ুবাঙ্গী, আরও বেশী প্রকৃষ্টি।

মানুষের জন্য যে দোলোবায়া তাই মানবতা, তাই মানবিকতা। মানবতার জন্য নিবেদিত যিনিই তিনি মানবতাবাদী। মানুষের জীবন যাত্রার মান বদলান ও মানুষের কষ্ট লোভার যান যিনি এইদ্বি মন কিংবা মন প্রদর্শন করেন তিনিই মানবতাবাদী। নবকুলের অসংখ্য কবিতায় মানবতাবাদি মূর্ত এঁটেছে।

মানবতার পাঠ্য লিখতে গিয়ে কবী নবকুল ইমলাম হয়ে উঠেছেন বিদ্রোহী। বিদ্রোহের জন্য বাক্যগুলো মানবতার মূর্ত। মারা চিরদিন নত জীব, মাদের হাতে ঐ হুয়নি কোনদিন, সেই নিম্নোক্ত মানুষদেরকে এঁড়াই যোগাতে তিনি লিখেছেন নিম্নোক্ত :-

বল বীর -

বল ব্রৈত হাম জিহা।

জিহা নেহরি আমরি নত জিহা গুঁ জিহা হিমাদির! [বিদ্রোহী]

পাঠ্য খাট বসবাসকারী চির বন্ধিত মানুষের কাতা যেন কবি নবকুলের বুকের ব্যাথা। অদারের বেদনার বিন নিবের হুয় বিনায় বাক্যে কবী নবকুল ইমলাম লেখছেন এক পরম মানবতাবাদী।

তোমি বন্ধিত কাতা পথবাসী চির গৃহহারা বত পথিকের,
তোমি অবমানিতের নবম বেদনা, বিষ-জ্বালা, প্রিয়নাশিত বুকে সতি
থের। [বিদ্রোহী]

বন্ধনা থেকে হতাশা, হতাশা থেকে বিদ্রোহ। হৃদয়ে কাটন জ্বালা নিয়ে যে বিদ্রোহের অনল জ্বলে ওঠেন কবি, সেই অনল দিকি দিকি জ্বলে জেনে কবির অনুর জ্বাট, মারাট জীবন ধরে। তাঁর পূর্ন বত জাওয়া-বিদ্রোহের সেই অনল নিম্নোক্ত হলেই তিনি জ্ঞাত হবেন সেই দিন, সেই দিন বগলো অতোচরির তেরবারী তার নিম্নোক্ত করতে অহর না কোন নিম্নোক্ত মানুষকে, সেই দিন

নির্দোষিতো শ্বেতেন তোল জোনা মাল না আর অকম্পাণ বচনো।

যদি ঐশ্বরীকৃতো শ্বেতেন তোল অকম্পাণ বচনো
অকম্পাণে ধ্বংস রূপান ঐশ্বর্যে ধ্বংস
বিদ্রোহী বন জ্বাল,
তোমি যেইদিন হব জ্বাল। [বিদ্রোহী]

স্বাভাবিক যিহ যারা অধিকার আদায় করিত তাদের মাঝেই ছিলেন
নরকুল। তাদের অধিকার আদায় তাঁর দীপ্ত ঘোষণা :-

কেনাইয়া এঁকে বিন্দুত বুক পুঙ্খিত অতিমান,
ইহাদের পায় দিতে হয় মাথায় দিতে হয় অধিকার। [কান্ডারী ষ্ট্রিকায়ার]

কান্ডারী নরকুল ইলান ছিলেন এক অস্বাভাবিক মানবতাবাদী বর্গ। এই
কান্ডারী-বর্গ-বর্গ নিখিলাসে সব মানুষের কথা তাঁর বুক ফুলনাছে কড়। সেই কান্ডারী যোচ্ছাচ্ছে
তাঁর অন্তর। তাঁরই প্রতিফলন তাঁর কান্ডারী ষ্ট্রিকায়ার বর্গভায়ে :-

হিন্দু না ওরা মুসলিম? ওঁর কিস্তাসে বেগন বান?
কান্ডারী! বল, দুবিচ্ছিন্ন মানুষ, মনুস মোরি মার। [কান্ডারী ষ্ট্রিকায়ার]

মানুষের চেয়ে বড় কিছু নাই, নহে কিছু নরকুলের কাছ ছিল না - এমনি
কাজান তাঁর "মানুষ" শব্দটাকে দান করেছে এক অমর কর্তার রূপ :-

গারি গ্রাহার গান -

মানুষের চেয়ে বড় কিছু নাই, নাই কিছু মহীয়ান,
নাই দেখে কান পাড়ের দেখে-আপে, বর্মী কান্ডারী,
সব দেখে সব কান হতে হতে তিমি মানুষের কান। [মানুষ]

নরকুলের কাছ ছিল মানবদের ছিল স্বজাতির স্বপ্ন বিচ্ছিন্ন চাইতেও পবিত্র।
এখনকি এপান্নানালয় এবং চিহ্নস্বপ্নও এর স্বপ্ন নয় - (একি আবেগী এক মানবতাবাদী
তাঁর কর্তব্যকে করেছে আরও সুখ-পাঠ) :-

তু স্বজাতির যত পবিত্র স্বপ্ন এপান্নালয়,
ওঁ একধারি সুন্দর দেহের স্বপ্ন পবিত্র নয়। [মানুষ]

নির্দোষীকৃত মানুষের শব্দ ছিল নরকুলের অকৃত্রিম কলহাওয়া;
তিব্বুকের প্রতি ছিল তার দেহতল্য প্রতি। নরকুলে স্থান করতেন - তিব্বুকের বেজায়
স্বপ্নের দেহতা আসেন মানুষের দ্বায়ে। তিব্বুকে তেমনো মানই দেহতাকে তেমনো।

তোমার তোমার হাত হা পাছে তিব্বু মুখি দিলে,
দারী দিয়ে ওঁর মার দিয়া তুমি দেহতাকে প্রেরিলে। [মানুষ]

মানুষ বলে কথা - এঁদের অকম্পাণে স্বত নরকুলের মানবতাস্বত। পাপী
তাপী স্বপ্ন তাঁর আশ্রয় আশ্রয় :-

গ্রাহার গান আই,
যত পাপী - তাপী সব মোর বান, সব মোর আই। [পাপ]

কেনে হুঁই আশি পানিলে প্রায়।
কুসুমের লেখা কোথা হুঁই যায়।

কোন বসি, তেনা হেঁজবান! তুমি আকিত আছি কি? কালি ওচুন
কেন এটি না কতাহার জাল, যায়াধায় হুঁই জিহ্বার ধূন?"

হুঁইয়ের মানুষের অন্য কালী নরকালের এক অপরিসীম মানবতাবোধ।
কেন তারা অনেকে হুঁইর বোধ নিকটের কলার তুলি কেঁচায় তাদের বিকৃত
বিহীনতা আত্মজ্ঞান :-

প্রার্থনা করে- যারা কোত ধায় তেরিমা কোটি মূলের দ্বায়,
কেন লেখা হয় আমার রক্ত কেন্দ্রের লেখায় তাদের গর্বনাশ! [আমার কৈশিক্যত]

এর চেয়ে এতম মানবতাবোধিতার একশরন আর কিছু হতে পারে না। কালী
নরকালের প্রলোভনের কবিতায় মানবতা প্রেম- ১ এক বিজ্ঞান বিষয়- ২২৭ পরিচয়ের
নাম। কবি নরকালের কবিতায় বিজ্ঞান প্রাপ্ত। তাঁর এই কবিতায় মানবতার রূপ
হুঁই বৈশিষ্ট্য।

একমুখ আলোচনের আলোক আমরা বসতে পারি যে, নরকালের সমগ্র রচনা
খদি আমরা পর্যবেক্ষণ করি তখনে আমরা দেখবো যে তার স্বর্গে রয়েছে মানবতার
এক বিদ্রোহ, সুন্দর ও কল্যানের বর্ণনা, জীবিতের আত্মচরিত্রের এবং নতুন আশ্রয়।
নরকালের লেখনীগুলো ছিল মানুষের দৃষ্টি আদ্যের বিপ্লবী প্রোভান। তিনি তার
মানবতাবোধী রচনার জন্য অমর হয়ে গেছেন।

BIDHAN CHANDRA COLLEGE

B.A Program in Bengali Intersem Examination 6th Sem
2020-21

NAME :→ BASUDEB BAURI
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ଅକ୍ଷତେ ମଧ୍ୟ-ସମ୍ବର୍ତ୍ତେ-ପାତ୍ରେଣ, ଭଗବାନୀଦେବୀ ଶ୍ରୀମତୀ ସମ୍ବର୍ତ୍ତେ-ପାତ୍ରେଣ,
ସାଧନା, ନିଜିନି ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ, ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ। ବିଷ୍ଣୁ ବର୍ତ୍ତେ-ପାତ୍ରେଣ
ଦାତ୍ରୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ, ତହିଁ-ଦେବୀ ନୃତ୍ୟଶୈଳୀ ସମ୍ବର୍ତ୍ତେ-ପାତ୍ରେଣ
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ନିଜିନି ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ,

ଅନ୍ୟାନ୍ୟ-ସମ୍ବର୍ତ୍ତେ-ପାତ୍ରେଣ, ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ,
ସାତ-ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ,

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English



THE GREEN MILE
A Study of American Prison Literature



Submitted By
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Rituparna Choudhury

Abstract

The Novel "*The Green Mile* " describes the encounter between John Coffey, an exceptional prisoner who exhibits mysterious healing and empathic talents, and death row superintendent Paul Edgecombe. Before being reissued as a single volume work, the serial book was first published in six volumes. A good example of magic realism is this novel. The Dynamism of courage, Comradeship, and humanity to face evil is reflected in this novel by Stephen King. Set in the 1930s at the Cold Mountain Penitentiary's death-row facility, *The Green Mile* is the riveting and tragic story of John Coffey, a giant, preternaturally gentle inmate condemned to death for the rape and murder of twin nine-year-old girls. The *Birth of the Prison* advances knowledge of the peculiar function of prison literature in addressing such acute themes as power dynamics and structures in contemporary prison systems. The paper starts off by going into great length regarding several theorists' theories of institutional power. The novel concludes with a discussion of how prison circumstances are depicted in the book. The goal of this study is to evaluate Stephen King's "*The Green Mile*" that concludes with a discussion of how racism and prison circumstances are depicted in the book. The analysis demonstrates the complex interplay between control and opposition as well as the strategies of power and resistance that are frequently used with prisons by prison writers when defending their ideas, values, principles, and freedom against a dominant oppressing power because the focus of this study is the relationship between the prison system and the institutionalized racism in the United States of America as reflected in "*The Green Mile*".

Keywords - Stephen King, *The Green Mile*, *Birth of Prison*, Power Dynamics.

CHAPTER - 1

Introduction

The topic of my term paper is about the 1999 prison fantasy drama, an unparalleled piece of Stephen King's vivid imagination named "*The Green Mile*". The Green Mile is full to the brim with thought provoking moments, however the climax is richer in terms of emotions. King Stephen has written a depression- era prison novel that's as hauntingly touching as it is just plain haunted. One of his freshest and most frightening works to date. The Green Mile is the tragic story of John Coffey, a giant, preternaturally gentle inmate condemned to death for the rape and murder of twin nine year old girls. The story is narrated many years later by Paul Edgecomb, the ward superintendent compelled to help every prisoner spend his last days peacefully and every man walk the green mile to execution with his humanity intact. Edgecomb encountered a prisoner man John Coffey- a man who wants to die but he has the power to heal. In this place of ultimate retribution, Edgecombe discovers the terrible truth about Coffey's gift, a truth that challenges his most cherished beliefs and ours. The author, Stephen King cleverly made a connection of the social structure of America with the characterization of the book. He also constructed the plot to demonstrate flaws within the American Judicial system. Racism is a prevailing ideology – one that is so overwhelmingly present in the legal system that it played an important role in condemning John Coffey to death. The novel sheds light on the American Prison that existed in the county's institutions as well as within individuals. The Green Mile shows the opposing racism verbally is insufficient to change the status quo. The Story Green Mile different sociological theories and concepts can be useful in considering how societies rule the behaviors in life within different cultural places and times. Green Mile is a novel adapted from a story about the lives of a few guards on death row. The story leads up to the execution of a wrongly accused man that has a spiritual gift that permits him to perform extraordinary feats as he heals the wounded or sick. The Green Mile by Stephen King introduces with the first chapter was two dead girls, tells about the first time John Coffey. The Second part is about the mouse on the mile published on April 25th 1996. It tells about a unique mouse Mr. Jingles which is the only one animal character in the story. The third part of the novel is Coffey's Hands which was published on May 30th 1996. The fourth chapter is the Bad Death of Eduard Delacroix published

on June 27th 1996. It tells about the terrific execution of one of the prisoners in the Cold Mountain. The fifth part of the Green Mile is Night Journey published on July 25th 1996. And the last part is Coffey on the Mile, it was published August 29th 1996 and tells about the execution of John Coffey.

In The Green Mile, the sub-genre is the supernatural thriller because it concerns the supernatural and unusual power of the main character. In 1932, a 40-year old Paul was the supervising officer of Cold Mountain's death row, but known commonly as The Green Mile, for the color of its linoleum floor. This is the same year that John Coffey, a large black man found guilty of murdering the Detterick family's twin girls, arrives at Cold Mountain. He was found clutching the white girls' dead bodies and despairing over their deaths. Paul is unsettled by his gentle demeanor. One day, Coffey beckons him to his cell and cures Paul of his urinary tract infection. Paul struggles to reconcile Coffey's healing powers with the horrific nature of his crimes. Later, Coffey uses his healing powers again to revive Mr. Jingles, the pet mouse of another inmate, Eduard Delacroix, after the guard, Percy Wetmore stomps on it. The rest of the guards, Brutus "Brutal" Howell, Harry Terwilliger, and Dean Stanton witness the revival, and come to believe in Coffey's magical abilities. Coffey's gift extends Paul's life, but he has to watch people he loves die around him. Eventually, Elaine, the only one left who knows his story, passes away, leaving him all alone. The novel focuses on the approach of power in modern institutions. The birth of the prison contributes to better understanding of the unusual role of prison literature in tackling such sharp issues as power structures and dynamics in modern prison systems. The novel demonstrates the complex interplay between control and opposition and the strategies of power and resistance that are commonly exercised with prison by defending their ideas, values, and freedom against a dominant oppressing power. The major elements in this story I will cover up in brief, under this story like the atonement and absolution of sins, morality and duty in conflict, power dynamics and political connections. The overall story involves multiple executions, a performing mouse, mysterious power, a daring scheme, and difficult choices. The most attractive is the thematic coherence. It's somewhat of a smorgasbord, offering various satisfying motifs. King balances a single hopeful conclusion with the sadness of other less than happy endings.

CHAPTER - 2

Study of the Text

The Story of two Dead Girls

Paul's story opens with a terrifying description of the electric chair. The narrator makes references to the terror and violence that define this type of execution, but he does not yet go into depth about the events. He gives a more emotional interpretation of the black bag than a strictly utilitarian one, evoking the existential and spiritual significance of his work, which is to force other people to confront the gravity of their own death. Paul emphasizes the electric chair's upsetting and potentially awful effects without directly asserting that it is wrong. Paul emphasizes that criminal behavior has nothing to do with a person's skin tone by pointing out that convicts come from all races. It's possible to interpret her release from death row as an acknowledgment of her particular vulnerability as a woman and domestic abuse victim. Paul keeps Percy from making Coffey's arrival into a joke or an unnecessary cruel occasion, demonstrating his dedication to treating convicts with respect. Coffey's general behavior and Paul's confidence in him, which is enough for him to accept the prisoner's explanation, highlight the fact that the new inmate does not at all come across as a typical criminal. Coffey, a huge Black man was found guilty of raping and killing the Detterick twins, two white girls. After being discovered sobbing and holding their lifeless bodies, he was swiftly found guilty and given the death penalty. Coffey's arrival at the prison gives Paul the impression that he is a mystic. Despite his bulk, Coffey behaves childishly and sobs nonstop in his jail cell. A gentlemanly Frenchman named him has a pet mouse named Mr. Jingles. Delacroix is frequently the target of Percy's unexplainable animosity. "You know murderers...at least you do if you've spent as much time minding murderers as I did. There was only one time I ever had a question about the nature of my job. That I reckon, is why I'm writing this." (Paul, Part 1, p. 6).

William Wharton is the most recent prisoner to enter E Block at this time. Wharton is inexperienced, irresponsible, and proud of it. Coffey still exhibits her innocent demeanor on the

day of the crime. Coffey doesn't try to hide or flee when he is spotted by Klaus and the other men. Instead, as he holds the lifeless, nude bodies of the young girls, he is absolutely overcome with anguish. The contrast between his seeming sincerity and his conviction for this terrible crime is unsettling. Coffey responds to questions while sobbing, sitting on the ground without shoes, and in a straightforward and honest manner befitting of a little child.

The Mouse Mr. Jingles

While remembering every detail of the events of 1932, Paul acknowledges to the reader that he finds it difficult to arrange them in chronological order as the narrator cuts back and forth in time. The fact that King chose to present the story in a non chronological manner symbolizes the fact that the protagonist is an elderly man reliving events from the past. As Percy's superior, Dean tries to advise him that they should keep things quiet and orderly on E Block, but Percy rudely rejects him. In the future, Mr. Jingles only visits E Block when Percy is not there. The mouse is fed by the other guards, who then understand that it will only eat from the regulars. The mouse, for some reason, knows which guards are floaters, who only work irregular shifts, and which are regulars assigned to E Block. Paul comes to understand the significance of Mr. Jingles as he works on the story. In retrospect, it appears Mr. Jingles was searching for Delacroix. Mr. Jingles is extremely intelligent and exudes an eerie, unearthly aura. Percy is enraged by his inability to kill or capture the mouse. Percy's obsession with Mr. Jingles, a harmless creature so much smaller than himself, is telling. Percy is enraged by his inability to kill or capture the mouse. In essence, Mr. Jingles triumphs over him.

One day, Mr. Jingles appears and Delacroix claims to have tamed him. Normally cowering and miserable, Delacroix is genuinely happy with Mr. Jingles and spends time teaching him tricks. The guards even help Delacroix get a cigar box so Mr. Jingles can sleep under his bed. Delacroix remains terrified of Percy. Delacroix teaches Mr. Jingles how to play fetch with a wooden spool and gives Mr. Jingles peppermint candies. Harry finds crayons and suggests that Delacroix color the spools so Mr. Jingles can be a circus mouse.

Coffey's Hands

The supernatural has already been alluded to, but in this, when Coffey heals Paul, King formally introduces the idea. Paul sees Coffey is unusually present for the first time since he arrived at Cold Mountain in his feverish haze. Even after Wharton nearly kills Dean, Paul is compelled to enter Coffey's cell despite knowing that doing so is against the rules. Paul seems to be so desperately needed by Coffey. Coffey is continually called stupid by society, who believes he is foolish. Coffey is the one who has an instinctive understanding of Paul's problems and a sense of urgency to take action. Paul's illness is absorbed by Coffey, who then exhales it through his body as a swarm of dark insects. "Lookit him, done piss his pants! Lookit what the big man done! but when someone touch him, he make water in 'is pants jus' like a baby!" (Delacroix, Part 3, p. 205). Paul decides Coffey is a conduit for God's work rather than blaming Coffey for healing him. He keeps expecting the agony to return, but it never does.

Paul struggles to understand why God would allow a child killer to carry out his healing. He concludes that Paul is something God is looking for. Paul turns to Hammersmith to learn more about Coffey because he is now more interested than ever. Paul conceals his genuine motivation for attending because he is aware of how unpopular it would be to say that he believes a Black guy convicted of the rape and murder of two White girls could be innocent. Percy is terrified by the danger and proximity. Delacroix finds it satisfying to exact retribution by making the bully appear afraid and helpless. Delacroix relishes the situation, making fun of Percy and relishing his humiliation. By doing this, Delacroix's fate is sealed and Percy's hatred for him grows even stronger.

The Horrible Death of Eduard Delacroix

Mr. Jingle's once lamb's tail starts to twitch at the same time. When Coffey drops the mouse, it returns to an ecstatic Delacroix. Delacroix is told by Brutal to throw the spool. Like before, Mr. Jingles chases after it, but this time one of his legs is slightly limp. Coffey smiles when Paul comments that Coffey assisted the mouse despite appearing exhausted but relieved. Delacroix is also giving Mr. Jingles a kiss while lulling him to sleep. Delacroix learns that

Mouseville is a lie from Percy as he straps him into the electric chair. Paul and the other guards begin to notice something is strange around the same time. Percy placed a dry sponge, rather than a wet one, on Delacroix's head while concealing his actions. Paul suddenly recognizes what Percy has done when he discovers that Delacroix's cheeks aren't wet. Percy looks at Paul and swiftly indicates for the electricity to start as Paul tries in panic to grab his arm to stop him. The heat of the electric surge burns Delacroix's scalp and sets him on fire without the saturated sponge to direct the power to his brain. The first people to notice what is going on are the guards. They can make out Delacroix's screams above the rumbling of thunder and can smell the burning flesh and hair. The witnesses scramble as Delacroix's body rapidly swings back and forth.

"Delacroix went on screaming out his grief and horror. It wasn't just the mouse, of course; Percy had smashed a hole in Delacroix's defenses and all his terror was pouring out. But Mr. Jingles was the focusing point for those pent-up feelings, and it was terrible to listen to him." (Paul, Part 4, p. 230).

The guards are all unsure on what to do. Due to the electricity, they are unable to wet Delacroix, and turning off the electric chair will only make his suffering worse. Paul and Brutal reluctantly decide against getting involved. Parts of Delacroix's body catch fire, as does the mask covering his face. The execution comes to a close. Paul proclaims Delacroix dead when the fire is put out by the guards using fire extinguishers. He continues to think that he is seeing a struggle between forces of good and evil as a result of this. The healing procedure for Melinda is more energetically intensive than the previous healings Paul has seen since she is on the verge of death. The house shakes, glass breaks, and Coffey can't seem to get the illness out of his body. Despite Delacroix's crimes, Paul recognizes his humanity and believes he did not deserve to die as he did. Paul is adamant about treating all of the inmates under his supervision with dignity.

Night Journey

Making their way outside the jail are Paul, Harry, Brutal, and Coffey. Coffey pauses when they pass Old Sparky, the electric chair, in the storage area. He claims that he can still hear the men screaming in the room and that there are still bits of the men within. Melinda has gray, hanging skin, most of her hair has fallen out, and one side of her mouth is turned down. The space has a sickly odor. The recent speed with which she has deteriorated horrifies Paul. Melinda asks Coffey to take down his pants when she sees him, acting like a child, so she can admire the size of a Black man's penis. Coffey disregards this and takes a seat on the bed next to her. Melinda's awareness begins to return with simply his presence; she gets more perceptive and starts to question him. Light bathes the two of them in their own private realm as the others observe. Whatever is making her unwell is visible to Coffey. He leans up close, places his lips on hers, and takes a deep breath, drawing the illness out. Coffey appears to have put his health at risk to assist a total stranger. Coffey and Melinda share a sensitivity and connection that goes beyond their differences in race and socio economic background to connect on a deeper level where Coffey is mending much more than just her physical ailment. She doesn't exactly recall what happened, but she has a general understanding of it. By giving him her necklace, she hopes to express her gratitude and offer him protection. Despite being worn out from writing, Paul is almost finished. He truly fears Dolan and thinks of Percy as Dolan's brother. Paul used to be able to readily confront Percy's bullying behavior when he was younger. Elaine threatens Dolan in a manner reminiscent of what Percy used to do, and Paul is appreciative. Observing how alive Coffey grows throughout their night time drive makes me feel even more intensely the injustice of his destiny. Coffey approaches their perilous and uncertain endeavor with a pure excitement. He chuckles as the gurney is pushed through the tunnel. Coffey will no doubt be gone by the time Paul rides the gurney again. Coffey seems right at home in the outdoors. His joy at being allowed to walk through the woods serves as a constant reminder that his freedom was wrongfully taken from him. However, Coffey is only happy to be free for the evening rather than feeling resentment or a need to escape.

John Coffey in the Green Mile

The reality of Coffey's approaching execution sinks in after the commotion of the night journey and its aftermath had subsided. Paul is a proponent of accuracy, justice, and fairness. This forces him to once more conduct his own investigation into the twins' death. Coffey's suspicion that Wharton had raped and killed the Detterick girls was confirmed by him. Wharton was quite content to eat dinner with the Detterick family while remaining calm and polite, concealing his actual character, and then, without hesitation, executing horrifying crimes against the family.

"I'm rightly tired of the pain I hear and feel, boss. I'm tired of being on the road, lonely as a robin in the rain. Not never having no buddy to go on with or tell me where we come from or going to or why. I'm tired of people being ugly to each other. It feels like pieces of glass in my head. I'm tired of all the times I've wanted to help and couldn't. I'm tired of being in the dark. Mostly it's the pain. There's too much. If I could end it, I would. But I can't." (John Coffey, Part 6, p. 424).

The moral judgment of the guards on Coffey's death is starkly contrasted by the contrast between Wharton and Coffey, who risks his life and freedom in an effort to save the Detterick girls. The guards of E Block are aware of the truth of the twins' murder, but it doesn't seem like the rest of society is concerned. Even if a Black man is innocent, no one will be ready to risk their career for his survival. Paul, an elderly man, is shown reflecting on death in the book's final pages. Paul must wait, just like every prisoner did, knowing that their time was running out. The wait continues, in order to describe how Paul anticipates his demise, King uses the image of walking the Green Mile once more. Every person Paul has ever loved and cared for has passed away. Paul only recognized how much Coffey altered him when he lost Janice, the love of his life, in the bus tragedy. The illnesses and accidents that take everyone else's lives leave Paul unharmed. Coffey paradoxically spares Paul's life, but Paul considers how close salvation and damnation are to one another. Loneliness can be worse than death, as Coffey knew.

Keywords: Humanity, Death, John Coffey, Paul, Prison, Punishment, American, Prison, Power, The Green Mile

CHAPTER - 3

Theoretical Framework

Power Dynamics, Structures and Resistance in Stephen King's *The Green Mile*

According to Foucault's *Discipline and Punish*, there is a strong need to comprehend the historical significance of the American prison system and how it relates to the oppressed minorities who have struggled there. Foucault illustrates the extent to which perpetual surveillance has a significant impact on individuals within disciplinary institutions as well as on society at large through an adaptation of Jeremy Bentham's "panopticon" theories. A proponent of jail reform and a legal philosopher, Bentham lived from 1748 to 1832. Bentham's Panopticon is a jail concept, consisting of a ring-shaped structure divided into cells and placed around a central tower with large windows that open onto the inside of the ring. Inmates are therefore invisible to one another, but the guard station in the middle of the building can see and keep an eye on them at all times. "A society in which individuals are increasingly caught up in power structures and in which visibility is a key tool of social control," according to Anthony Elliott. According to the notion, prisons foster and maintain hierarchical structures of power.

This prepared people to think critically and come up with radical solutions to many issues facing the prison system, including mass incarceration, imbalanced power structures that allow the institution to continue operating. The emphasis will always be on "the social and cultural functions of the prisons, how they shape the quality of individual lives and are shaped by the dynamics of social structures," in other words. In actuality, Foucault is drawn to the study of administrative methods for population control. He claims that what he called "bio-power" causes physical bodies to respond in particular ways as a microcosm of societal control over the larger population. (Foucault, 8) Discursive practice, or "bio-power," establishes what constitutes what is normal, acceptable, deviant, etc. This discursive technique is constantly evolving. He holds the view that social order does not necessarily alter as a result of revolutions or other state-centric power battles. Some people believe that there is limited room for effective action since Foucault's definition of power is so elusive and disconnected from agency or structure. King

completely reforms the prison genre to reflect the many jails in America. Because they cover a wide range of political and social issues, shed light on the cultural divide within the contemporary penal system, and denounce a number of American political institutions whose functions deprive people of agency, his prison narratives are regarded as a comprehensive portrait of America at the turn of the twentieth century and into the twenty-first (Magistrate, America's Storyteller VIII). The research will concentrate on *The Green Mile*, one of his many stories. *The Green Mile* is a book that weaves together the contentious topics of violence, the death penalty, justice, and the dependability of the legal institutions that carry out executions.

"The wide corridor up the center of E Block was floored with linoleum the color of tired old limes, and so what was called the Last Mile at other prisons was called the Green Mile at Cold Mountain." King describes how prison guards take pleasure in torturing death row convicts in ways that violate the laws of justice and rehabilitation.

Foucault acknowledges that the present prison system imposes harsh punishment. Throughout King's prison narratives, some inmates voluntarily submit to the authority of others. However, other inmates reject the status quo and opt to rebel against the repressive system in order to survive. Paul and Brad Dolan's relationship exhibits power dynamics as well. Paul is once again the helpless one. This time, it's due to his advanced age. One of the few individuals that is aware of Paul's age is Dolan. Although it is not precisely a secret, Paul will not discuss it until specifically asked. When Dolan performs something that might land him in problems with his superiors, such as physically harming facility inhabitants, his age is also a concern. Dolan threatens Paul after putting a ring of bruises on his wrist. "I'll tell them you're having delusions," he says. *The Green Mile* is a story that creates an important emotional response through its strong development of characters led by the misnamed internee Coffey. *The Green Mile* asks the followership to look beyond markers and see the characters as mortals which are corroborated by the performances of John Coffey. Despite its long- handling time of three hours, the director states that the long duration is a crucial fashion in icing the followership is completely invested emotionally. It can be seen as a fashion that's used to allow the followership to gain a full understanding of the characters, giving the director time for characterisation to produce more complex followership alignments.

The American Prison Technique

King's creative writing style in prison captures his solitary imprisonment. Writing is a common method of catharsis used by many inmates to express their political, social, and ethical problems that are crucial for their time, place, and generations. The extent to which readers perceive the narrative voice is a concern in prison narrative in general because readers are completely unfamiliar with the structure, stories, and experiences of prisons; as a result, they are unable to assess the veracity of the depictions of prison life if they do not have trust in the prison narrator. Additionally, the atmosphere in which the narrator crafts his jail tales is very dissimilar from the outside world. Since Archer's prison narrative covers a wide range of subjects, it is unique from other conventional ones. He uses the jail narrative approach, which expresses genuine experiences via the use of vivid images and metaphors. In addition, he presents his personal interpretation of reality to the reader while examining the topics of self, authority, power, and resistance.

King vividly describes interrogations and prosecutions while using the first-person narrative approach to lure readers into the narrator's world. Additionally, a prison writer (Paul) commonly chooses dialogic styles to express the painful experiences in prison. To document the agony in the prison and "preserve memorial images of themselves and others as historic testimony," he creates personal stories in the form of novels and diaries. In contrast to other literary genres, King's prison narrative concentrates more on the "place" than any other. In *The Birth of the Prison*, the concept of "space" is discussed, and it is argued that control of space is closely tied to control of inmates. One may argue that the prison is the spatial limitation the inmates are trying to break free from, thus they are attempting to interact with it in order to possess it. The area needs to be carefully addressed because the prison plays a significant role in the prison story. His isolation and confinement was expressed by the innovative nature of King's prison writings. A large number of prisoners are seeking an appropriate catharsis by writing, so that they can express their policy, societal and moral concerns which have a critical importance to them over time, place or generation.

Capital Punishment

A component of American culture is the current contemporary prison literature. Since the first decade of the 1960s, notable American jail literature has been released. Given how accurately it captures the experience of Afro-American prisoners within the prison, it is regarded as a turning moment in contemporary prison literature. Therefore, America itself as a jail of the black country and Afro-American enslavement in the United States are the central themes in contemporary American prison literature, as well as a Foucauldian approach in Stephen King's *The Green Mile*.(Hussain, 2901). People of color are the most criminalized citizens in the United States, according to Lorna Rhodes, as the country moves away from using slavery in prison as the primary form of punishment. The human subject is simultaneously positioned in very complicated power interactions as well as relations of production and signification. In other words, in order to gain the most accurate picture, the power of the institution itself is insufficient, and the topic of punishment and the prisoners themselves cannot be ignored. The prison and its role should be tied to the cultural power dynamics. Any prison's history must be compared to the history of the state in which it is located. Punishment is deeply entwined with history, not just with power. Therefore, it is impossible to analyze the cultural role of any prison without first understanding its origins. We must view the jail as an intellectual creation rather than just a physical edifice if we are to understand it as a concrete and effective response to crime. The practice of capital punishment and how it is administered, people are drawn to events that focus on either because they have always been fascinated by the opposing themes of life and death. People are more likely to believe a youthful, apparently able orderly than a veritably senior nursing home occupant. Paul has no power over Dolan until Elaine Connelly threatens to have him fired. This time political connections work in Paul's favor. Paul says "I believe there's good in the world, all of it flowing in one way or another from a loving God. But I believe there's another force as well, one every bit as real as the God I've supplicated to my whole life, and that it works purposely to bring all our decent impulses to ruin."

CHAPTER - 4

The Allegory in the Green Mile

In his analysis of Frank Darabont's film adaptation of 'The Green Mile', *Erwin Cabucos* discusses the symbols that form part of the allegorical meaning of Stephen King's original masterpiece. 'The Green Mile' (1999), directed by Frank Darabont and based on the novel of the same title by Stephen King, is an allegory of Christian healing and freedom. It represents Jesus Christ for today's society in a world poisoned and imprisoned by perception, injustices, and a more deep-set malady—the darkness of the heart. The setting, characterization, and plot cleverly portray a series of metaphors and analogies that help reveal the message of the film: physical healing and true liberation can be achieved in real kindness and pureness of the heart, but hatred, bigotry, and hostility are true illnesses and imprisonment of our time. To begin with, the character of John Coffey represents Jesus Christ in a multitude of ways. First, the initials J and C bear semblance to that of Jesus Christ. It's repeatedly mentioned in the dialogue, where John introduces himself as 'Like the drink, only not spelt the same'.

The emphasis on the name and its relation to the drink are reminiscent of the Eucharist, the Christian belief of the real presence of Christ in the form of bread and wine. Third, and perhaps the strongest allusion of the character to that of the person in the Christian scripture, is the personality as the healer. John Coffey heals. He alleviates his boss' urinary tract infection, brings a creature, a mouse, back to life, and restores the health of his warden's wife's health. The character of John Coffey in 'The Green Mile' strongly links to the biblical Jesus. Furthermore, the connection of the character of Coffey to the Christian Lord is highlighted by the filmic portrayal of the title as the light of the world, from the gospel of John Coffey is consistently associated with light. He is scared of the dark. At the onset he requests that light could be left in his cell and during his execution, he asks that his face could be left uncovered. The character's association with the image of the light transcends and more importantly, concretizes his god-like nature, the opposite of evil. When he heals, light glows brightly: Paul Edgecomb's face, the mouse and Mrs. Moore's mouth and face go bright from the rush of God's grace that comes to

them. He can also foretell that he would be taken for a ride towards Mrs. Moore and in the end he can feel the darkness of the people in the room, saying: "There are lots of folks here that hate me. Lots. I can feel it." He wants his face to be uncovered at the moment of his death. He died as per scheduled but his campaign for the real heaven is understood.

First it is known through the lyrics of the chick-flick movie where two dancers move to the tune of "I'm in Heaven", then explained by Coffey as he walks on the Green Mile where he relays his dream being in heaven with Dale and the two girls, and concludes in the lips of Coffey himself whilst at the electric chair: "I'm in heaven. Heaven. Heaven. I'm in heaven." Not only that it is understood by the people around him, it is also felt by them. The repetition of the word 'heaven' simply cements the invitation of the film to value the eschatological teachings of the prophet: 'heaven' being the preferred state of humanity where kindness and compassion exist and where bigotry and racism do not. The use of the character of Coffey from the African-American race alludes to the haunting experiences of slavery and the on-going racism in American society and the world at large against people of colour. Coffey is the instant perpetrator of the rape and murder of the two girls, condemned before a council of the neighbourhood of white men with guns and dogs, slapped and judged without dialogue or simple consultation. Coffey is the representation of the common victimization of the helpless black suspects as a direct reaction of perception and stereotypes that breed like a disease in the mainstream white race. The seating arrangement of the public that witnessed the execution shows similarity to that of the chapel where white people are faced with the reflection of their bitterness, resentment and vengeance. This auspice is the setting for all the miracles that take place, real judgment that had to be carried out, compassion that overwhelms people, love that had to be felt, realization through illumination and life everlasting that had to begin. Institutions can be lunatic, bureaucratic and corrupt, and they can serve as extensions of mostly white officers and policy makers, depicted by the majority of the guards and the public who witness and subscribe to the outcome of their own judgment. 'The Green Mile' by Stephen King is an allegory of Christian healing and freedom. It is a triumph of representing Jesus as the healer and liberator for the real malady of and imprisonment of our time. They can be cured. But the real malady of our time is hatred and intolerance of all people, and they lead to death. There is therefore a call to Christian love, kindness and compassion, and to look forward to heaven.

CHAPTER - 5

The Green Mile and the Contemporary Society

The Great Depression and American Prison

The novel is set during the Great Depression, which was a particularly traumatic time in American history. The Great Depression abruptly and dramatically altered society. Due to this, society began to retreat in the direction of an economic and social downturn. Through my study I discovered that the significant upheaval felt during the Great Depression was caused by a number of variables. There was a race for opportunities due to a shortage of opportunities and workers. Both of these ideas are highlighted in the novel and film *The Green Mile*. Through my writing, I try to explore how the prison and incarceration issues raised in *The Green Mile* during the Great Depression could be connected to similar issues in contemporary society. For everyone, the Great Depression was an arduous period. The author of *The Effect of the Depression on Prison Commitments and Sentences*, Leon Thomas Stern, discusses how the time period's prison institutions were impacted by the Great Depression, as well as the general attitude toward incarceration, and how these elements may have served as a model for contemporary institutions. "Penal punishment tends to be humane when the labor supply is limited and labor is consequently in high demand, but it turns cruel when the labor market is oversupplied and persistent unemployment sets in. There is less need for force when things are going well and there is less temptation to commit crimes, but when unemployed people are tempted to trade their freedom for humane treatment in prisons and other institutions, it is necessary to make those places prohibitive and to impose harsher penalties overall to balance the temptations of the underprivileged masses. The author develops a theory on the connection between incarceration and the state of the economy before pointing out that the theory has never been thoroughly examined. The theory contends that a population's overall health has an impact on its general demeanor and attitude. Depending on what the residents feel they must do to survive, their actions may or may not transfer into criminal conduct.

In today's culture, the rise of mass incarceration has created its own problems. More inmates than ever before are housed in prison facilities. The author analyzes the causes and implications of our nation's high incarceration rates in the passage *The Prison in Society: Values and Principles* from Jeremy Travis' book *The Growth of Incarceration in the United States*. "The shift in American penal policy amid the growth in incarceration mirrored not just societal changes but also a shift in mentality. Recently, the primary purpose of incarceration has shifted from being rehabilitation to being vengeance, according to policymakers and enforcers. The idea that the punishment should be appropriate for the crime is fundamental to justice and punishment. The benefits of proportionality principles in terms of justice, reason, and cost-effectiveness finally turned out to be temporary.

"The gains in justice, rationality, and cost-effectiveness that proportionality ideas fostered ultimately proved short-lived. The core ideas about justice and equal treatment that motivated support for proportionality were eroded by the adoption of mandatory sentences, three-strikes laws, and other measures that readily imposed incarceration. Such laws often disconnected the severity of punishments from the seriousness of crimes. Low-level drug crimes often were punished as serious acts of violence. Under three strike laws, some misdemeanors and minor property felonies were punished as severely as homicides, rapes, and robberies." (Travis).

If and when confronted in a dangerous circumstance, humans will act according to their survival instinct. We are a species that is motivated to survive, and many of us will do whatever it takes to make sure we succeed. Crisis situations, like the Great Depression, undoubtedly inspired many people to do heinous acts out of extreme desperation. Probably due to hardship, people became desperate. In order to survive, many people probably turned to actions they would never consider before. The concept of justice and the benchmark for human welfare alter as society develops. Mass incarceration has increased recently as a result of legislative changes, which calls into question how we now conceive justice and internal government. Similar concerns of racism and imprisonment in contemporary culture were reflected in a portrayal of a prison drama set during the Great Depression. While providing us with useful lessons, history also serves as a warning to not commit the same mistakes again. We must draw lessons from challenges like the Great Depression and use those occurrences as a roadmap for building an even better society.

Conclusion

The character of John Coffey played by Michael Clarke Duncan ends *"The Green Mile"* with a smile as he knows that his particular skills will continue after him and wishes that the person he has entrusted them to would utilize them wisely. He can be seen in the movie dishing out justice to those he thought deserved it and giving life to those who were, at one point in the picture, staring death in the face. To answer the question, "Why did they kill John in *The Green Mile*?" It is because he was found guilty of sexually abusing two young girls, a crime that, as creators soon enough reveal. The discovery of Duncan John Coffey with the bodies of the two girls by his side and their blood on his clothes provides additional evidence in support of his execution. In a way, the conclusion is meant to emphasize the prejudice and intolerance that existed at the time against persons of African American origin. *The Green Mile* is a fantastic "good vs. evil" tale that depicts the harsh injustice of American prisons. Some of the characters in this book are found to have been wrongfully convicted of crimes. Additionally, it encounters severe human abuse. King presents a nuanced picture of the treatment that Americans give to convicts who belong to groups that are regarded as criminalized. Without considering the country's use of torture on its detainees, it is impossible to comprehend the subject of criminalized populations in the United States. The primary conflict involves the ability to grant and revoke life. The state is using its power to end the lives of the residents of the Green Mile who have already exercised their right to life termination. Even though John Coffey has the ability to give life, he will be put to death. At the book's conclusion, Paul, the protagonist, as well as his wife, coworkers, and, to a lesser to some extent, readers are tormented by the thought that the state will put an innocent man to death, not only an innocent man, but one who has been endowed with a divine gift. The book is a charming tale about Paul and his companions coming across John Coffey, a character with supernatural abilities, and experiencing something wonderful. Stephen King used juxtaposition in the book's character development, storyline, and setting to reflect the intense racial, judicial, and power conflicts. When comparing these ideas to modern culture, the author employed the dominant language to portray Southern American attitudes and cultural beliefs from the 1930s.

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The exploration of horror and sadomasochism in Bram Stoker's Dracula.

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A handwritten signature in blue ink, consisting of a large, stylized 'S' or 'G' shape with a small loop and a trailing line.

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Abstract

The word 'horror' closely resonates with the word 'fear'; horror can be understood as the immediate response to the presence of fear in human mind. Fear as we know is primal drive that controls our 'flight or fight' reaction, in order to ensure our survival in a hostile environment. In literature, the horror genre has emerged as a distinct form of fiction that stimulates our sense of fearfulness and dread. From thousands of years, the concept of horror has been passed on as warnings and moral teaching through religious folklore; however in English Literature the horror genre flourished in the pre-romantic gothic era of 18th century, which was mainly based on the idea of supernatural. In his world-famous literary work "Dracula", Bram Stoker illustrates the fear of unknown by creating the character of count Dracula. Stoker uses the altitudinal and isolated setting of the Carpathian mountains to create a sense of detachment between the supernatural and human perception. In this novel the real horror mainly forms out of the helplessness of the human characters, who get stuck within a game of power-play that scrapes the limitations of curiosity and temptation. Dracula embodies the animalistic hunger of human vices. This thesis will contain the analysis of the growth and development of horror with time, along with the psychological dynamics of the predator and the prey.

Keywords: Horror, supernatural, human psychology

Introduction

Bram Stoker's *Dracula* is considered to be one of the greatest contribution in the field of gothic horror and psychosexual analytics. Drawing from Transylvanian folklore and history, Stoker creates an imaginary creature that revolutionises the understanding of horror. Other than the obvious use of supernatural, Stoker twisted the Victorian notion of modesty and humility. He portrays the Victorian era undergoing a transition saturated with old doctrines and a new lifestyle filled with technology. With the new dawn of Science and technology comes the fear, uncertainty and excitement of the unknown. In his novel *Dracula*, Stoker showcases this fear and anxiety of the Victorian culture; when faced by an entity that threatens to destroy the very core of its foundation. Among many such foreign and frowned-upon topics is the idea of sexuality, more so the idea of female sexuality along with homosexuality. Stoker approaches these concepts in a metaphorical way, using varied items like blood, bite marks etc. The novel's main antagonist Count Dracula who personifies the raw and primitive sexual force, only seeks to corrupt the "weaker sex", that is, women. Even though Stoker wrote the whole novel as a display of battle between Victorian morals and human vices(mainly referring to the sin of ever insatiable lust); but under the scope of modern science and psychoanalysis, we can get a better understanding of the natural human psychosis that is personified by the character of count Dracula. We can also understand how this text has succeeded to become a cult classic and inspired the popular culture, mainly in the sphere of kinks and fetish.

Chapter 1

Horror: Victorian to Modern

It is well known idea that human cognitive and physical development has been subjected to millions of years of evolution and adaptations. And because of this human beings are generally equipped with reflexes and characters that are born out of survival instincts. These reflexes can be physical and psychological. And in this case, 'Negative emotions have their wellspring in an ancient mammalian fear system, and once activated they are difficult to consciously extinguish' (Öhman and Mineka 2001). This helps us to understand that the trait of fear can have a range of psychological and physiological effects on human body like having goosebumps, increase in heart rate, sweating etc.

Horror literature utilizes these negative emotions to channel the sense of horror in the readers' mind which in return induces the reader with Imagination and provides the reader with a thrilling experience of fear and danger within a controlled condition. In English literature, the study of horror was excluded from the general literary principles and academic adaptations up until the later half of the eighteenth century, when the publication of *Castle of Otranto* by Horace Walpole founded horror as a legitimate literary form. Later in the nineteenth century, many influential works like that of Mary Shelley's *Frankenstein*; Washington Irving's *The Legend of Sleepy Hollows*; Edgar Allan Poe's *The Tell-Tale Heart*; Oscar Wilde's *The Picture of Dorian Grey* created the concept of 'Gothic literature', which mainly features macabre and supernatural themes.

The popularity of the Gothic element is made up of the mixture of two approaches, as Sage phrases it brilliantly, the 'equivocal explanation of irrational phenomena'. This 'irrational phenomena' is the presence of situations, characters or ideas that really do not exist; or an imaginary concept such as ghosts, teleportation, mythical creatures, body transformation etc. These imaginary factors are needed to create an uncanny and eerie atmosphere that builds the gothic plot.

This '*irrational phenomena*' has to be accompanied by an '*equivocal explanation*' that offers us the closure of this kind of narrative account, but fails to provide any direct cause or solution to the obscure scenarios presented to the readers. This intermixing gives rise to the sense of horror and ghastliness that can give us a dangerous and thrilling sensation. But even after containing all these qualities, Stoker's *Dracula* was taken to be incoherent and disjointed. The highbrow literary magazine *The Athenaeum* reviewed *Dracula*, concluding that the novel, "is highly sensational, but it is wanting in the constructive art as well as in the higher literary sense. It reads at times like a mere series of grotesquely incredible events.... Still, Mr Stoker has got together a number of 'horrid details', and his object, assuming it to be ghastliness, is fairly well fulfilled. Isolated scenes and touches are probably quite uncanny enough to please those for whom they are designed"

There is a definite implication here that readers of the novel are much likely to be seduced or rather bewitched by the 'grotesquely incredible events', which is a clear reference to the novel's underlying sexual context. This way it is possible to say that the character of Count Dracula has the ability to turn the readers into a 'duped consumer'; that is, just like the women in the text who are enslaved to consuming blood and breaks free from the civilized society, Dracula turns the readers into thoughtless consumers who find pleasure in reading such sensual content. So by doing this Stoker's *Dracula* proves that human nature is not devoid of temptation and has a natural inclination to seek out their primitive drive.

And this reflection on the subject of 'primitive influence' sums up the horror of Victorian society quite completely. Stoker's *Dracula* not only illustrates the stigma of the Victorian morality in terms of biology and gender norms, but also illustrates the fear of the '*new discoveries*,' '*reverse colonisation*' and '*otherness*'. During the time of late eighteenth and the whole nineteenth century, England was at the peak of its industrial development. As Nelson says, "England underwent technological, commercial, and social developments that fundamentally changed the English life,

replacing the world into which Victoria was born with one that looks much more familiar to the twenty-first-century eye".

England was going through a period of transition. The old doctrines and institutions were attacked and modified and a new order was proposed. New scientific knowledges and discoveries were prompting people to view the world in a more progressive light. Being the most largest imperial force of that time, England had turned into a centre of diverse cultural, traditional and racial influx. This had a dual effect on the Brit masses, on one hand they feel intrigued and excited to know new mysteries; but on the other hand they also fear for the breach in Britain's Superiority. Stoker Brilliantly represents the zeal of objective and scientific approach through the character of Doctor John Seward, in the novel he runs a mental asylum and deals with a special patient called Renfield. In the novel Dr. Seward says, "Why not advance science in its most difficult and vital aspect, the knowledge of the brain? Had I even the secret of one such mind, did I hold the key to the fancy of even one lunatic, I might advance my own branch of science."

We must understand that this '*knowledge of the brain*' signifies the hidden cognitive activities of the brain which at that time was only regarded as a theory. To a great extent the mysteries of human mind lead to the germination of the fear of unknown. In his long essay, *Supernatural Horror in Literature* (written 1925-1927 and revised 1933-1934), Lovecraft famously claimed that the, "oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown ... As may naturally be expected of a form so closely connected with primal emotion, the horror-tale is as old as human thought and speech themselves" (2000, p. 23)

Opposed to this, Abraham Van Helsing turns out to be quite different. Even after being a man of science and technology, he knows a lot about vampires and supernatural beings. His knowledge of both medicine and folklore enable him to solve Lucy's condition. It can be said that Van Helsing's character represents a sort of middle ground between Dracula and the English. He is a man of science, and thus a man of the West, and yet, like Dracula, he is, not a native speaker of

English, since he is Dutch. Moreover, he proves that there is some truth in the superstitious beliefs, as his non-scientific methods turn out to be effective against the vampire. Thus, Stoker successfully connects the new and the old, science and superstition, resolving the tension that existed between the two. Senf explains that the enthusiasm for science and technology is a typical feature of England in that period. Due to extensive colonisation, Britain in Victorian age came in touch with variety of cultures, languages and traditions. This brought forth another fear within the mind of British people, that is of '*reverse colonisation*', Britain feared that the diversity of nations would weaken their imperialistic power. In the novel the arrival of Count Dracula into the England represents the beginning of '*reverse colonisation*', 'Stoker tackles the issue of colonization and the metaphoric revolt of the 'inferior' East visible through Count Dracula's desire to become a part of the English society'(Lukić and Matek, "Bella and the Beast" 85)

Dracula calls himself, 'a proud Szekely' in whose '*veins flows the blood of many brave races*'. Jonathan says, "Then I stopped and looked at the Count. There was a mocking smile on the bloated face which seemed to drive me mad. This was the being I was helping to transfer to London, where, perhaps, for centuries to come he might, amongst its teeming millions, satiate his lust for blood, and create a new and ever-widening circle of semi-demons to batten on the helpless."

Chapter-2

New Woman: Female Identity Beyond Convention

The conventionally ideal picture of woman in English fiction started undergoing change towards the end of eighteenth century and beginning of nineteenth century. During the mid-nineteenth century, the "Woman Movement" developed as a result of "women's strivings to improve their status in and usefulness to society." The objectives of the movement were "to initiate measures of charitable benevolence, temperance, and social welfare and to initiate struggles for civic rights, social freedoms, higher education, remunerative occupations, and the ballot". Evolving throughout the nineteenth century, the Woman Movement developed in response to women's dependent situation. It promoted a series of new images for women: True Womanhood, Real Womanhood, Public Womanhood, and New Womanhood. As Barbara Welter describes in her, *'Dimity Convictions: The American Woman in the Nineteenth Century (1976)'*, a 'True Woman' was designated as the symbolic keeper of morality and decency within the home, being regarded as innately superior to men when it came to virtue. 'Piety, purity, submissiveness, and domesticity' were thought to be natural to women.

The phrase "New Woman" was invented by the author Sarah Grand in her article "The New Aspect of the Woman Question" published in the North American Review in March 1894. It was Henry James who developed the phrase New woman when he used it to describe American emigrants living in Europe. In Victorian society of England, the popular opinion was against woman's individual self and she was ordered to take up the conservative middle class career of marriage and motherhood, her role was fixed by the Victorians as she was not allowed to transgress against sex, gender and class distinctions, "Women can rarely have been held in lower esteem than they were at the end of the 18th century". So, the emergence of the New Woman was inevitable. In the later parts of Victorian period, one could see the beginning of change in attitude of society on the question of gender relations; the concept of patriarchal male domination was punctured and the

modern concept of gender equality gained momentum. Serious discussions started on issues of marriage and divorce laws, right to property, custody rights, educational and employment opportunities for women, female suffrage.

First we must understand some of the essential characteristics that were required for a woman to be ideal or a 'True Woman' in a Victorian society. The ideal of True Womanhood was early imprinted upon young girls, who were expected to be obedient and exhibit great self-control. They were also taught to value their virginity, "as the 'pearl of great price' which was her greatest asset". Women were supposed to value marriage by keeping themselves chaste for her future husband and learning the skills necessary to manage a household and rear children. Motherhood was valued as the most fulfilling and essential of all women's duties, a view extending the eighteenth-century ideal of Republican Motherhood, which charged women with the task of, "shaping the values of their sons, who were likely to have a direct impact on the nation's success".

Ironically, while a True Woman was assumed to be a pillar of moral strength and virtue, she was also portrayed as delicate and weak, prone to fainting and illness. She dared not exert herself too much physically or be emotionally startled for fear of her health. Strenuous physical activity was discouraged, as women were considered to have, "much more delicate nervous system[s] than ... men because of the particular function of their reproductive organs [T]heir fragile nervous systems were likely to be overstimulated or irritated, with disastrous results". Also due to their emotional and physical frailty, a True Woman needed to be protected by a male family member. She also required the luxuries that his income could provide. In the novel, Van Helsing insisted that Mina should not participate in the action of hunting and killing the vampires, "We men are determined, nay, are we not pledged, to destroy this monster? But it is no part for a woman. Even if she be not harmed, her heart may fail her in so much and so many horrors and hereafter she may suffer, both in waking, from her nerves, and in sleep, from her dreams."

In Bram Stoker's *Dracula*, The concept of 'True woman' and the emergence of the 'New woman' has been illustrated in a rather complex light. Various aspects like Women's independence, hyper-femininity, hyper-sexuality and intelligence which goes against the traditional norms of the Victorian society, has been explored by Stoker. These themes are explored through the female characters present in the novel, mainly Mina Murry and Lucy Westenra. Both characters exemplify the ideals of Victorian womanhood, although in different ways: while Lucy is representative of the emotional and domesticated view of women which was desired by men of the time, Mina is sensible and devoted to both God and her husband, qualities which were held in high regard in the Victorian era. However, both women also represent the emerging phenomenon known as the "New Woman" – although again, in differing ways.

Despite being very close friends, Mina and Lucy are very contrary. At the starting of the novel, Mina confesses that she has been overwhelmed by her work as an assistant schoolmistress and states that she is learning shorthand and practising on a typewriter so that she could communicate with Jonathan when they are married. In stark contrast to Mina's studiousness is what Lucy describes doing with her time – going to picture galleries and for walks in the park. Lucy also conveys much more emotion in her letters than Mina: she writes that she wishes Mina were there so she could tell her friend what she feels and frequently confesses that she is afraid, sorry, or happy, while such emotion is not as apparent in Mina's writing. Another significant difference between the two women is that Lucy is an openly sexual character and Mina is not. After being proposed to by Dr. Seward, Quincey Morris, and Arthur Holmwood all in one day, it becomes clear that Lucy is quite flirtatious, she writes to Mina, "Why can't they let a girl marry three men, or as many as want her, and save all this trouble? But this is heresy". While she acknowledges this as "heresy", Prescott and Giorgio refer to her behaviour in the letters as 'sexually excessive'. Thus, Lucy's declaration of wishing to marry three men is, initially, the most definitive sign marking her as the whore to Mina's virgin. This is also the beginning of Lucy's transformation into the monstrous female, as her

transgressive sexuality is what is presented as her, arguably, most damning trait. Lucy's sexualization, taken to be a characteristic of the New Woman, becomes much more apparent after the young woman succumbs to vampirism.

Lucy as this seductress is in direct opposition to the view of a woman's sexuality held in the Victorian era, a time marked by sexual repression. The fact that Lucy's victims are children is significant and suggests that Lucy's animosity is directed not just at marriage but at motherhood as well, a role that Victorian women were expected to fulfill. This "exaggerated perversion" of motherhood reflects the fear that the New Woman would not only be a bad mother, but potentially harmful and deadly as well. By isolating and exaggerating Lucy's flirtatious tendencies, Stoker calls attention to the possible destruction that is caused by the sexualized New Woman. Lucy, when turned into her monstrous form, is also described as having eyes 'unclean and full of hell-fire', as well as being 'callous as a devil'. Her being 'callous as a devil' is declared by one of the male characters when Lucy is seen flinging a child to the ground, further demonizing her lack of nurturing capabilities. Lucy being referred to as a 'devil' further sets her apart from Mina, as Mina is referred to as 'one of God's women fashioned by His own divine hand'

Mina, on the other hand, is portrayed as a somewhat amalgamation of the 'New Woman' and the 'True Woman'. Though she was described as the stereotypical Victorian woman and was submissive to his fiancée, she showed another side of her that could be identified as the New Woman aspect in her personality, as she was quite independent and intelligent. Mina's intelligence is shown in her ability and interest in modern technologies. She is very experienced in shorthand. She is very fond of her typewriter, as she had written everything with it and not to mention her knowledge of using the phonograph. She is a determined person and quite independent. However, seeing that Mina still holds her traditional Victorian values, she acknowledged that her ambition to work harder is because she wanted to keep up with Jonathan and help him after getting married, "I have been working very hard lately, because I want to keep up with Jonathan's studies, and I have

been practicing shorthand very assiduously. When we are married I shall be able to be useful to Jonathan, and if I can stenograph well enough I can take down what he wants to say in this way and write it out for him on the typewriter, at which also I am practicing very hard."

The ultimate New Woman moment for Mina is when the protagonist group was trying to hunt and kill Dracula. She contributed by taking the role of the lady journalist that she has yearned to be. She assembled and distributed the journals, letters, and all the writings they had to the group to look for clues and leads. Both her womanly attributes and intellect did not get overlooked as she caught Van Helsing's attention and he constantly '*praise of her man's brain and woman's heart*'. First, Van Helsing praises her for being the perfect example of a Victorian woman, "She is one of God's women, fashioned by His own hand to show us men and other women that there is a heaven where we can enter, and that its light can be here on earth. So true, so sweet, so noble, so little an egoist, and that, let me tell you, is much in this age, so sceptical and selfish." Then later Van Helsing applauds her for her ambition and dedication, "Ah, that wonderful Madam Mina! She has man's brain, a brain that a man should have were he much gifted, and a woman's heart. The good God fashioned her for a purpose, believe me, when He made that so good combination".

As previously established, the ideal Victorian woman is one who embraces her motherhood role. Mina is portrayed as very nurturing, tending and taking care of Lucy when she was ill and suffering from severe anaemia and chronic blood loss, as well as sleepwalking as she fell victim to Dracula and slowly turning into the undead herself. Also she becomes Jonathan's rock while he recovered after his horrible encounter with the Count. She also lets Arthur Holmwood rest on her shoulder while he wept in grievance even though they never met before, and she offered him comfort and to be his "sister" in honour of her sisterhood with Lucy. Mina Says, "We women have something of the mother in us that makes us rise above smaller matters when the mother spirit is invoked. I felt this big sorrowing man's head resting on me, as though it were that of a baby that

some day may lie on my bosom, and I stroked his hair as though he were my own child. I never thought at the time how strange it all was."

According to Tyson, after being put on a pedestal, 'the 'good girl' had to remain uninterested in sexual activity, except for the purpose of legitimate procreation', and, when the good girl fails to achieve what is expected of her 'she is often punished'. Thus, the men's idealization of Mina puts her in a position of having to conform to their ideals, or to face punishment for failing. In contrast, Lucy is regarded as unfit for procreation altogether and this makes her worthless as well as evil in the eyes of the men.

Chapter-3 Sadomasochism: Calling of the Primitive Drive

The field of psychoanalysis is quite a large body of works, consisting a plethora of neurosis and psychosis. The main crux of this approach is to explore the unconscious mind and to understand the cognitive ability of our brain. With the dawn of Victorian period, scientific development brought a new sense of awareness regarding our physical world. This sense of awareness, though at first was limited to the elements, gradually began to shift towards the inner realm of human anatomy. By the 1920's Sigmund Freud becomes the founder of psychoanalysis, he developed the practice of psychoanalysis to gain access into the unconscious part of the brain. Freud examined theories of fetishism and masochism/sadism as paradigmatic perversions articulate around three of his central theoretical constructs: infantile polymorphously perverse sexuality, the uncanny perception of the missing female phallus and the death drive. For Freud, perversion is initially a question of partial drives that fail to be harmonized into normal adult sexuality. Perversion, as he puts it, is the remnant of a failing Oedipus. Looking at this failure through the lens of fetishism, he attributes it to the uncanny perception of the absence of the missing female phallus and the ensuing rejection of castration. But when he uses masochism/sadism as the paradigm to explain the failure to harmonize the partial drives, it is the deadly character of the masochistic and sadistic drives that will be held responsible.

In his *Dracula*, Stoker deploys the same heteronormative dynamic of sexuality against the dark and supernatural force of Dracula's gender fluidity. There is a clear line that connects Freud's theory of perverse sexual drive and Stoker's representation of the 'Monster', who is none other than Dracula; Rosi Braidotti defines a monster as, "the bodily incarnation of difference from the basic human norm; it is a deviant, an a-anomaly; it is abnormal". Many critics agree in seeing Dracula as a transgressive force, the psychological or social significance. They attach him to the actual nature of the pleasures and anxieties which he produces very greatly. Dracula is the endless desire of the

unconscious for gratification. It is a self-fulfilment in the interest of maintaining social and psychological stability.

Dracula's binary nature poses the problematic notion of gender inversion. Dracula performs the role of the Victorian educated gentlemen well; more than once in Jonathan's account, he makes it clear that the Count is an educated man, well-versed not only in the customs of his own country, but in those of England as well. However, we cannot ignore the Count's typically effeminate passivity, nor can we neglect his interest in the necessity of child-rearing. Braidotti describes what she terms the fantasy of the male-born child, as a result of, "a paroxysm of hatred for the feminine; it inaugurated a flight from the female body in a desire to master the woman's generative powers". Though it is clear that Dracula is both a learned and cunning man, he does not exhibit any of the skills of these "men of the male kind," though he is able to do within his own body that which they are all striving to do, that is, to reproduce. There is plenty of research equating the virility of the blood of the vampire bite to semen; the figure of the vampire cannot be at all divorced from the sexuality that comes along with it, especially since his preferred victim is the young, virtuous woman. However, few critics have paid attention to the ways that vampire blood can be equated to elements of female reproduction, namely breast milk and menstrual blood. Dracula, existing along the gender binary, is occupying three roles at once: the phallic conqueror, the nursing mother, and the menstruating maid. Menstruation is often the indicator that an adolescent woman has reached sexual maturity. Societal norms aside, her body has attained the ability to reproduce.

This bedroom scene comes with a particular sense of horror for the male audience who discovers it, rendering them unable to immediately rescue Mina, something that should have been a critical priority. Dr. Seward writes, "What I saw appalled me. I felt my hair rise like bristles on the back of my neck, and my heart seemed to stand still". The scene before him is a carnal performance of oral sex without the presence of a phallus, and is therefore sex for sex's sake, "All sexual

practices other than those leading to healthy reproduction are suspected to be conducive to monstrous events". The positions of both Mina and Dracula in this scene fail to evoke any sort of image of the phallus. Mina's mouth is pressed directly onto the wound in Dracula's chest, lips to lips, an image of oral-vaginal sex. This presents an additional tier to Jonathan's fear of being "*kiss with those red lips*", especially when those lips belong to a formidable vampire who straddles the line of gender fluidity.

"A sadist", argues Freud in his early *Three Essays on the Theory of Sexuality*, "is always at the same time a masochist, although the active or the passive aspect of the perversion may be the more strongly developed in him and may represent his predominant sexual activity." Secondly, as Deleuze has elaborated on in his extended essay "*Coldness and Cruelty*," the conflation of sadism and masochism has entailed that masochism has tended to be combined into an unequal relationship with sadism rather than considered as offering an autonomous economy of power and desire. Similarly Dracula exhibits both of the traits of gender-specific drives, creating a new variant of 'other'. In the psychoanalytic tradition, Freud, notably divided masochism into the three forms: erotogenic, moral, and feminine masochism and regarded the latter as being the, "most accessible to our observation and least problematical, and it can be surveyed in all its relations."

It is important to note, however, that feminine masochism did not necessarily have anything to do with women for Freud. This form of masochism is feminine because it positions the subject as a woman, that is, as "being castrated, or copulated with, or giving birth to a baby." And as Craft notes, "Dracula, after all, kisses these women out of their passivity and so endangers the stability of Van Helsing's symbolic system". For Jonathan, the threat of his wife turning into a woman who would "unsex" him awakens his own masculinity. Lucy's death scene is one of the most discussed scenes in the novel. It has been read as everything from a group sex encounter to a gang rape. A particularly interesting approach is to read it as a female castration narrative. Lucy's audacious sexuality places her as one of two extremes along the Virgin/Whore dichotomy, an

ancient cultural mode analysed by Wyman and Dionisopoulous: "While some whores are depicted as powerful - using sexuality to gain advantage - they are strongly associated with evil and viewed as a threat to those around them. The depiction of the powerful whore as a 'problem that has to be solved' negates the legitimacy of any power she displays"

Lucy's vampirism has given her the ability to reproduce without the necessity of heteronormative sexual intercourse, placing her in an unrivalled position of dominance over Arthur. Van Helsing, vigilant here as he is throughout the rest of the novel, preserves the phallic heteronormative structure in preventing Arthur from being unsexed by Lucy, who has turned femme fatale in her vampirism. For Van Helsing and his following of heteronormative men of significant status, the best solution to the problem of Lucy is to eliminate this threat of active female sexuality by castrating it, using the image of the phallus itself. In the same vein, Lucy is silenced first by driving the phallic wooden stake through her, resulting in a grotesque reaction tantamount to an orgasm. "The Thing in the coffin writhed; and a hideous, blood-curdling screech came from the opened red lips. The body shook and quivered and twisted in wild contortions".

The dominating stake is not enough, however. Lucy returns to her original countenance, "her face of unequalled sweetness and purity". It is only once Lucy has been subdued by the phallus, evidence of her threatening sexuality gone, that Van Helsing allows Arthur to bend and kiss her: "For she is not a grinning devil now - not any more a foul Thing for all eternity". Just like that, when Jonathan sees the blood on Mina's nightgown and recognizes that she has transgressed against him in her recent quasi-sexual encounter with Dracula. Her desire for knowledge has strayed too far into Braidotti's realm of a desire for sexual knowledge, and Jonathan must obtain dominance before he, like Arthur, is castrating his wife in her grave. Instead, Jonathan must castrate he who sired her. Though he is not the one to deliver the killing blow in the phallic plunge of the stake, that is reserved for Quincy, the pinnacle of masculinity, he is the one who beheads Dracula with the kukri knife, another phallic object. Of course, Mina is present to witness the elimination of her proxy.

Though she is not on the receiving end of the brutality as Lucy is, she must bear witness to her husband restoring his inherent dominance in their marriage. Significantly, Mina "shriek[s] as she [sees] it shear through the throat" (491), as if it is she who is wounded and not Dracula.

It is also perhaps unsurprising that the tensions between the political and the private implications of sadism and masochism have so often been exemplified culturally by their expression in film. If Pier Paolo Pasolini's translation of Sade's *120 Days of Sodom* into the economy of fascism in the 1940s Italy in *Salo* (1975) is explicitly concerned with the dehumanizing and depersonalizing dimension of systematic mass cruelty, for example, the entanglement of concentration camp torture and personal desire in Liliana Cavani's *The Nightporter* (1974) reveals the ways in which even the inhuman portrayal of Nazism can, in some cases, be personalised and sexualised. Issues of gender codification, bourgeois violence, and sadism/masochism are also investigated in Robert Van Ackeren's *Woman in Flames* (1983) and Monika Treut's and Elfie Mikesch's *Seduction: Cruel Woman* (1985). In Stoker's *Dracula*, the Count poses as the figurative representation of the contemporary fear of 'Reverse Colonization'. Tamara James Dickinson in *RACE IN CLASSIC HORROR: DRACULA AND THE FEAR OF REVERSE COLONIALISM*, argues that Dracula allowed Britain to, "[see] its own imperial practice in monstrous form."

Christopher Craft in his influential essay "Kiss me with those red lips" focuses upon the fear, expressed by an aggressive female about sexuality, the threat of the new woman and her rejection of conventional feminine roles. This essay, therefore, offers not a reading of monstrosity in general but rather an account of Bram Stoker's particular articulation of vampire metaphor in *Dracula*, a book whose fundamental anxiety, an equivocation about the relationship between desire and gender, repeats with a monstrous difference, a pivotal anxiety of late Victorian culture. He further adds, "The novel nonetheless, doesn't dismiss homoerotic desire and threat, rather it simply continues to diffuse and displace it. Later in the text the count himself announces a deflected

homocroticism when he admonishes the crew of light. Thus everywhere in the text such desire seeks a strongly deflected heterosexual distribution, only through women may touch men"

Conclusion

A contemporary investigation of sadism, masochism and sadomasochism should be done starting from individual proclivities and the current subcultures of "BDSM", "Dom/sub dynamics", that have formed around them at one end of the spectrum, via their broader expression and interrogation in art, film, and fiction, to the realm of systematic political violence and its representations at its farthest end. This tell us about contemporary agency and the various structures and processes of power, violence, and desire in which they are enacted. Bram Stoker's *Dracula* illustrates the late Victorian Gothic, supernaturalizing real threats into monsters as coping mechanisms. Moreover he presented the problematic bend of heteronormative gender bias, by doing this he illustrates the primal drive of human nature, and as usually uses the Woman body as a site of violence, that has to be under patriarchal order. Stoker's *Dracula* undoubtedly employs psychoanalytic elements to gives the idea that the victims' mental problem or disorders are being treated fusing psychoanalytical and scientific methods. Professor Van Helsing is trying to examine characters' unconscious mind and discovers hidden causes of their mental problem, while himself being the representative of Patriarchal Sadism.

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Geography



KAZI NAZRUL UNIVERSITY

BIDHAN CHANDRA COLLEGE

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LINEAR SCALE

Definition:- A Scale when expressed only by straight lines is called a linear scale.

Features of linear scale:-

- ▣ Linear scale are drawn from declarative or fractional scales.
- ▣ This scale has two parts. (a) Primary division, (b) Secondary division
- ▣ Linear scale are drawn in two ways. (a) simple linear scale, (b) comparative linear scale.
- ▣ Secondary division are shown at the far left of the scale.

Draw a linear scale to show that 10 km. and 2 km. of the Primary and Secondary division can be reading respectively with the R.F. 1:350,000

→ From the given R.F. 1:3,50,000 we can get

→ 1 cm represent 350000 cm. on ground distance

$$\frac{1 \text{ cm}}{350000 \text{ cm}} = \frac{1}{350000}$$

$$= 3.5 \text{ km.}$$

Primary Division

3.5 km ground distance represent by 1 cm. on map distance

$$\frac{1 \text{ cm}}{3.5 \text{ km}} = \frac{1}{3.5} \text{ cm/km}$$

$$= 2.85 \text{ cm}$$

Hence, The total Primary division as 4

So, that the total length of the scale is $(4 \times 2.85 \text{ cm})$

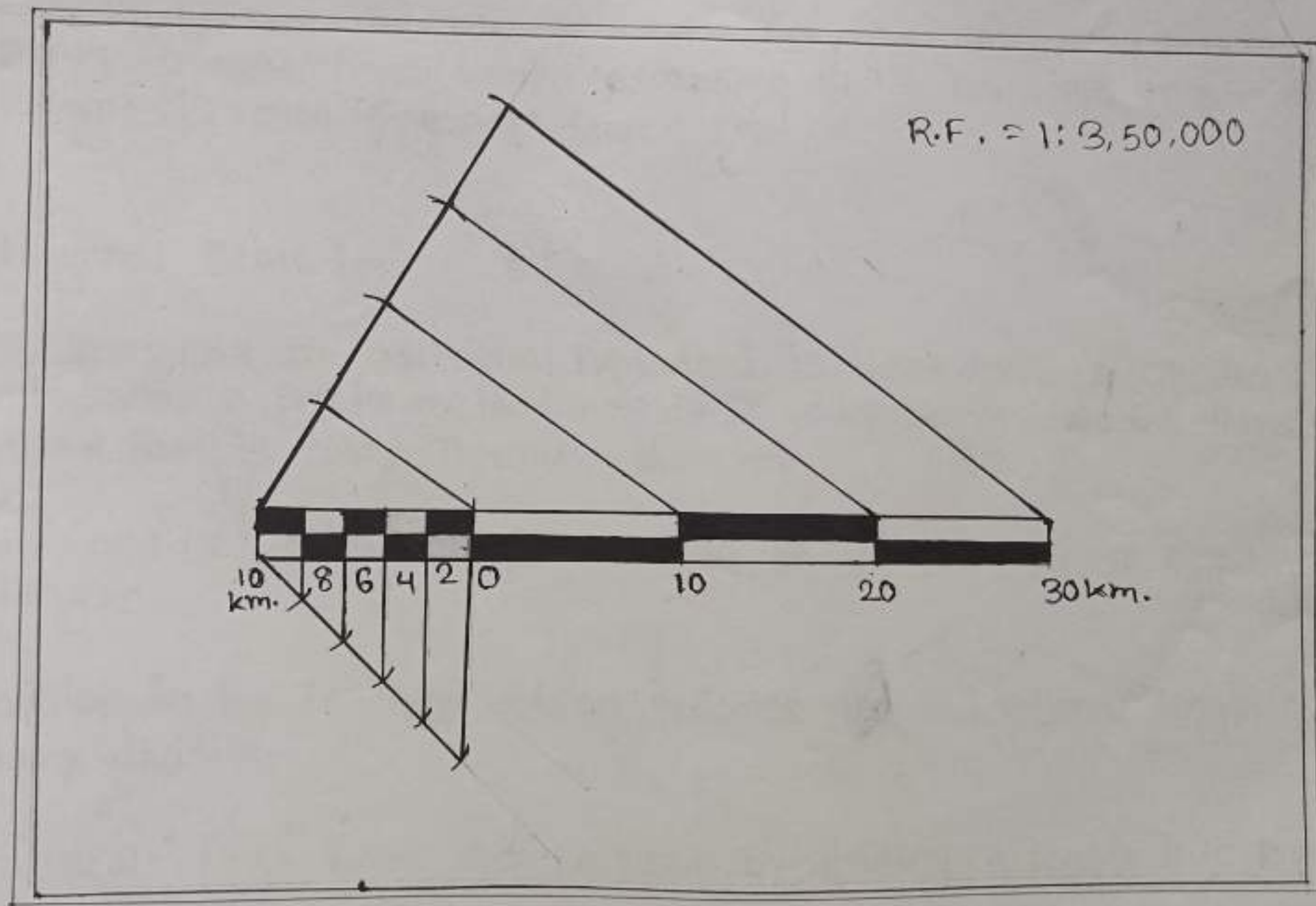
Secondary division

$$= 11.2 \text{ cm.}$$

Hence, The total Secondary division is $= \frac{\text{Primary division Value } 10 \text{ km}}{\text{Secondary division Value } 2 \text{ km}}$

According to the condition, number of $= 5$ Secondary division $= 5$

LINEAR SCALE



✓ 06.02.23

DIAGONAL SCALE

Definition :- The linear scale in which the secondary part is divided into smaller parts to read finer values according to the principle of similar triangles is called Diagonal Scale.

Features of Diagonal Scale :-

- This scale has an additional part that is three parts. After drawing the linear scale, a special method has to be adopted to draw the third part. The third part is called Tertiary division.
- All divisions of tertiary parts are done on the principle of forming similar triangles.
- A division in the tertiary division indicates the proportional length of the secondary division.
- In this scale, finer value can be read by dividing a length into primary, secondary and tertiary parts.

Draw a Diagonal Scale to Show 3.57 meters and R.F. is 1:25

→ Calculation for Diagonal Scale

Reading to be shown = $(3.00 + 0.50 + 0.07)$ meters

$$= (3 \text{ mtr} \times 1.00 + 5 \text{ mtr} \times 0.10 + 7 \text{ mtr} \times 0.01)$$

Division of Diagonal Scale —

Primary Division		Secondary Division		Tertiary Division	
NO	Value	NO	Value	NO	Value
3 mtr	1.00	5 mtr	0.10	7 mtr	0.01

From the given R.F. 1:25, we can get,

1 cm. on map distance represent 25 cm on ground distance

$$1 \text{ " } \text{ " } \text{ " } \text{ " } \text{ " } \text{ " } \frac{25}{100} = 0.25 \text{ cm}$$

Calculation for Primary division

0.25 m. on ground distance represent 1 cm. On map distance

1.00 " " " " " $\frac{1.00}{0.25}$ " " " "

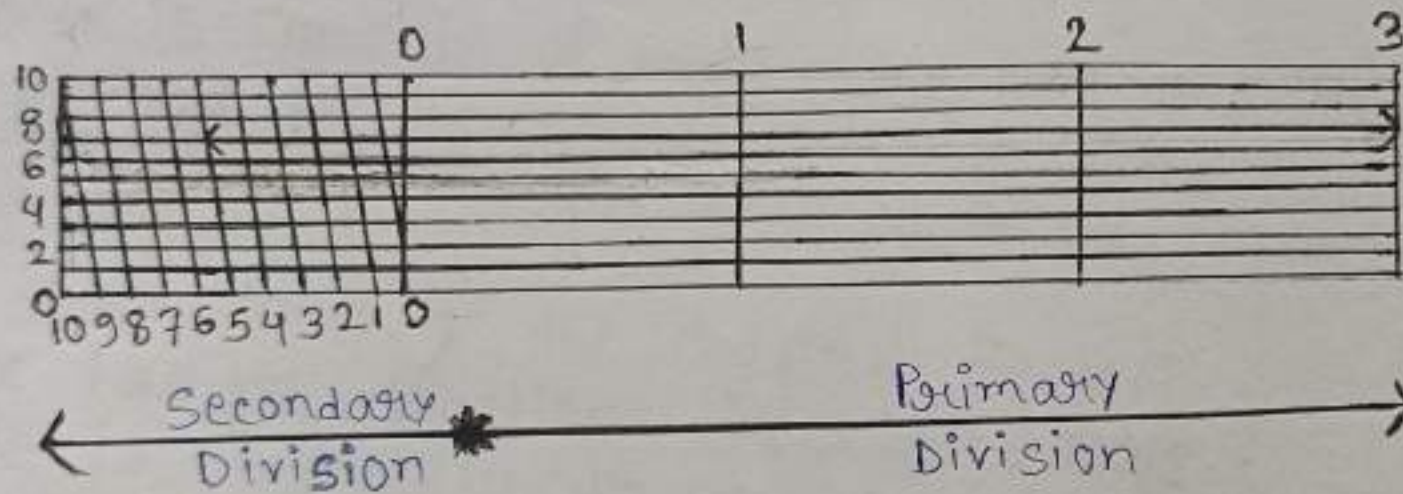
= 4 cm

Let, the number of Primary division is = 4

Hence, the total length of the scale is $(4 \times 4) = 16$ cm

DIAGONAL SCALE

Reading to be shown 3.57 mt.



R.F. = 1:25

19/10/19

VERNIER SCALE

Definition : Vernier Scale is a small and sliding scale attached along the edge of the main scale to measure the fractional part of one division that is least count of the main scale very accurately.

Features of Vernier scale :

- Vernier Scale consists of main scale part and Vernier scale part.
- The length or value of the smallest division of the Vernier scale is always greater or less than the length or value of the smallest division of the original scale.
- The Vernier scale touches the original scale.
- Vernier scale has no fractional index (R.F.) value.
- Vernier scale is simple linear or curvilinear.
- The marked side of the original touches the marked or graduated side of the Vernier part.
- The Vernier part can be moved to the right and left while keeping the original scale fixed.
- Vernier has an index mark. This is indicating the zero of the Vernier.

Draw a Vernier Scale to read 5.48" where 9 main scale divisions are equals to 10 Vernier division.

→ Step-1

$$V.C = \frac{d}{n} = \frac{0.01}{10} = 0.01 \text{ inch}$$

Where,

d = Value of the one smallest main scale division

n = number of Vernier scale division

Step-2

$$\begin{aligned} \text{Reading to be shown} &= \text{Main scale reading} + \text{Vernier scale reading} \\ &= 5.4 + 0.08 \end{aligned}$$

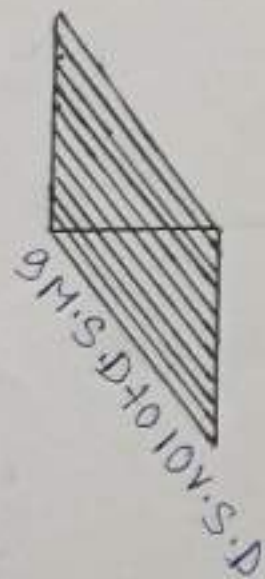
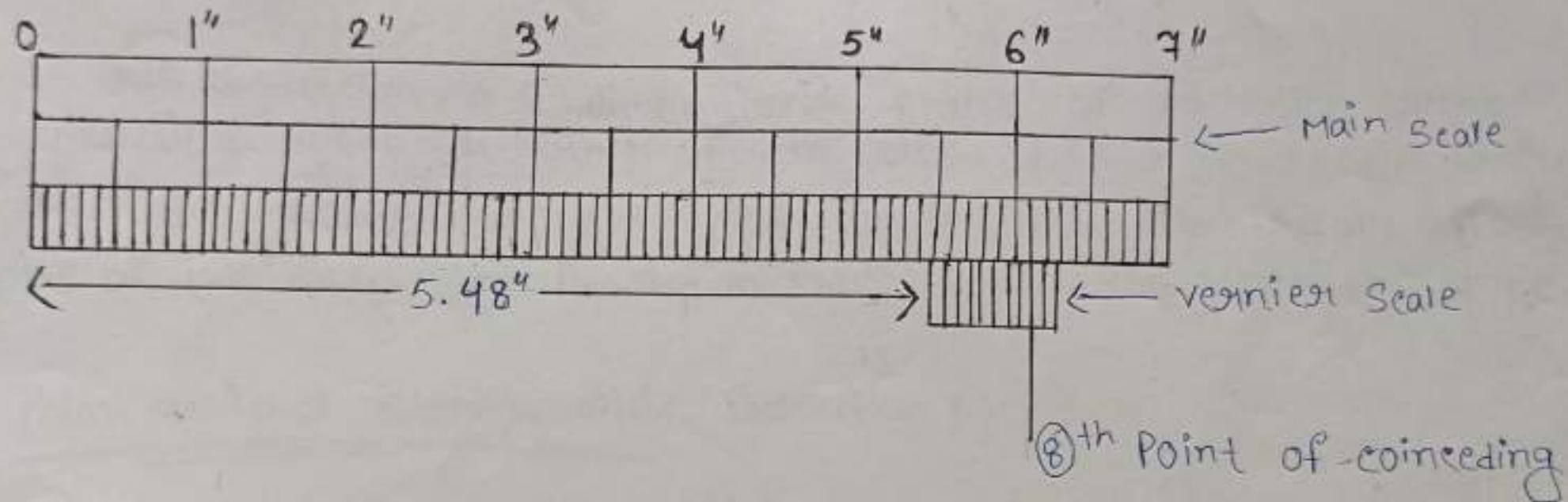
Step-3

No. of Vernier division coinciding with any of the main scale division.

$$\left(\frac{\text{Total reading} - \text{Main scale reading}}{\text{Vernier constant}} \right) = \frac{5.48 - 5.4}{0.01} = 8^{\text{th}} \text{ Point of coincident.}$$

VERNIER SCALE

Reading - 5.48 inch



9 main scale division are equal to 10 Vernier scale division

Vernier constant = 0.01 inch

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19/1/23

POLAR ZENITHAL STEREOGRAPHIC PROJECTION

Definition :- In this Projection, a 2 dimensional plane of Projection touches the generating globe at either of the Poles. It is a Perspective Projection, with the source of light lying at the Pole diametrically opposite to one of the which the Projection Plane touches the generating globe.

Features of Polar Zenithal Stereographic Projection :-

- ☐ True horizon quality is maintained from the center of this Projection.
- ☐ This Projection is suitable for maps located in Polar regions.
- ☐ In this Projection the scale deviation increases from the Projection center towards the Periphery.

Draw the gridlines of Polar zenithal stereographic projection for the map of Northern hemisphere at an interval of 15° on a scale of 1:225000000

→ Calculation:-

Step-1 → Radius of the generating globe (R) = $\frac{\text{Actual radius of the earth}}{\text{Denominator of R.F.}}$

$$= \frac{640,000,000}{225,000,000}$$

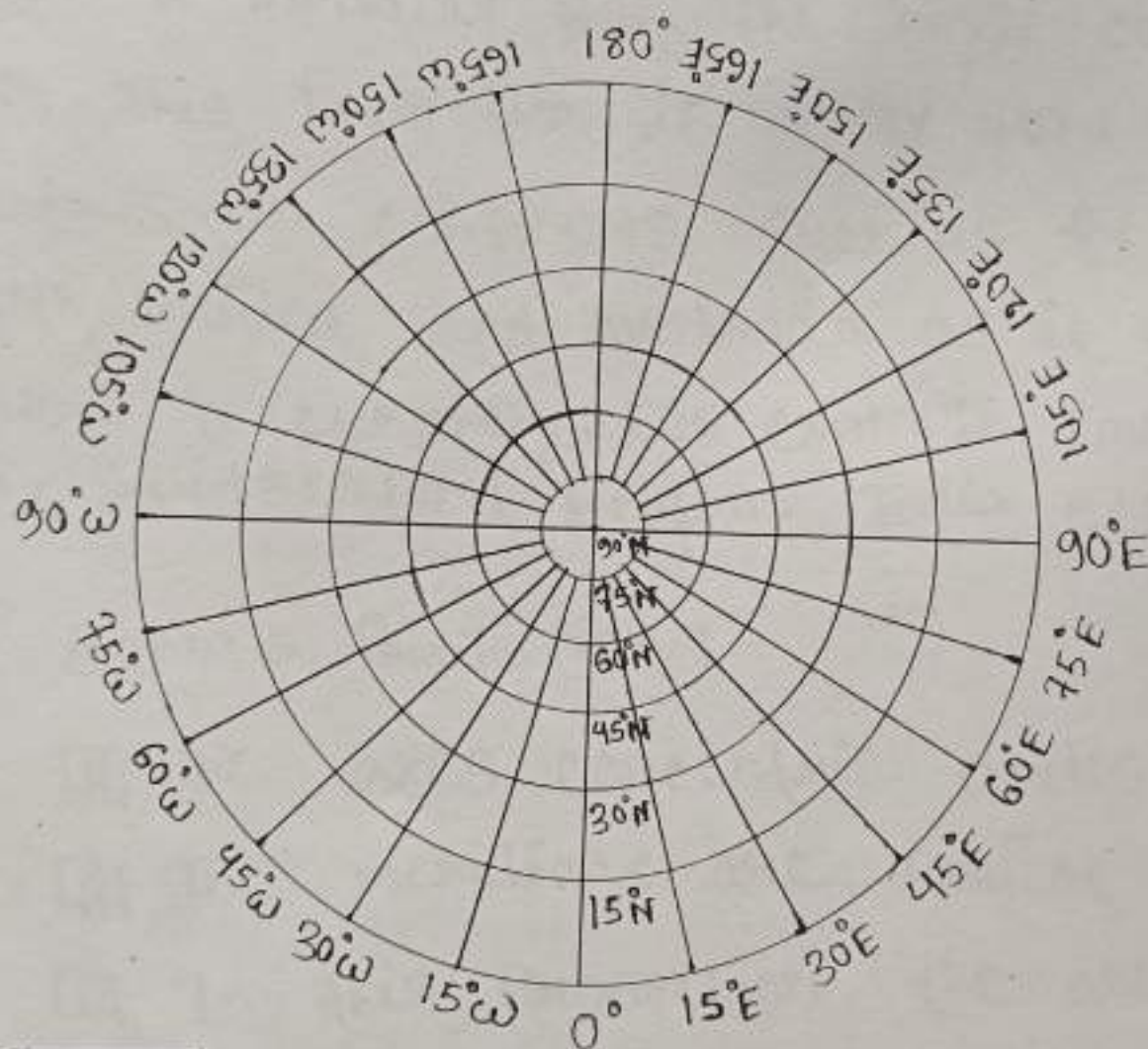
$$= 2.84 \text{ cm.}$$

Step-2 → Parallels to be drawn - $0^\circ, 15^\circ \text{N}, 30^\circ \text{N}, 45^\circ \text{N}, 60^\circ \text{N}, 75^\circ \text{N}, 90^\circ \text{N}$
Meridians to be drawn - $0^\circ, 15^\circ \text{E/W}, 30^\circ \text{E/W}, 45^\circ \text{E/W}, 60^\circ \text{E/W}, 75^\circ \text{E/W}, 90^\circ \text{E/W}, 105^\circ \text{E/W}, 120^\circ \text{E/W}, 135^\circ \text{E/W}, 150^\circ \text{E/W}, 165^\circ \text{E/W}, 180^\circ \text{E/W}$.

Step-3 \rightarrow Radius of any Parallel (θ) = $2R \tan \left(\frac{90^\circ - \theta}{2} \right)$

θ	$R(\text{cm})$	$2R(\text{cm})$	$\left(\frac{90^\circ - \theta}{2} \right)$	$\tan \left(\frac{90^\circ - \theta}{2} \right)$	$2R \tan \left(\frac{90^\circ - \theta}{2} \right)$
0°	2.84	5.68	45°	1	5.68
15°N	2.84	5.68	$37^\circ 30'$	0.76	4.36
30°N	2.84	5.68	30°	0.57	3.28
45°N	2.84	5.68	$22^\circ 30'$	0.41	2.35
60°N	2.84	5.68	15°	0.26	1.52
75°N	2.84	5.68	$7^\circ 30'$	0.13	0.74
90°N	2.84	5.68	0°	0	—

POLAR ZENITHAL STEREOGRAPHIC PROJECTION



Scale



2250 1125 0 2250 4500 6750 km

R.F. = 1:225,000,000

Extension

0° — 90°N
180°W — 180°E
interval — 15°

M. Das
19/01/23

BONNE'S PROJECTION

Definition :- Bonne is a Pseudoconic map Projection. Bonne's Projection is called a modified form the Simple conic Projection with a Ploof axis. This Projection is widely used for drawing maps of large countries or continents such as the former Soviet Union, Europe, North America and Australia as it is possible to show the volume accurately. For example countries like France, Netherlands, Switzerland, Belgium, India etc. can be shown.

Features of Bonne's Projection :-

- ☐ The axes concentric circles.
- ☐ The meridians are Perfect circles.
- ☐ In this Projection, the area of a country is found accurately but its shape is distorted due to the curvature of longitude.

* Draw a graticules on Bonne's Projection for extension 20°N to 60°N and 40°E to 100°E at 10° interval on scale $1:625,000,000$

Step-1

$$\begin{aligned}\text{Radius of the reduced Earth} &= \frac{\text{Earth actual radius}}{\text{R.F.}} \\ &= \frac{640,000,000}{625,000,000} \\ &= 10.24\end{aligned}$$

Step-2

Selection of Standard Parallels - 20°N , 30°N , 40°N , 50°N , 60°N

Therefore, Standard Parallel is = $\boxed{40^{\circ}\text{N}}$

Step-3

Selection of central Meridians - 40°E , 50°E , 60°E , 70°E , 80°E , 90°E , 100°E

Therefore, central Meridian is = $\boxed{70^{\circ}\text{E}}$

Step-4

Division along the central Meridians spacing of the Parallel = $\frac{\pi R \times I}{180}$
 $= 1.99$

Step-5

Radius of the Standard Parallels $\Rightarrow R\theta = R \cot \theta$
 $\Rightarrow 10.24 \times \frac{1}{\tan}$
 $\Rightarrow 12.20$

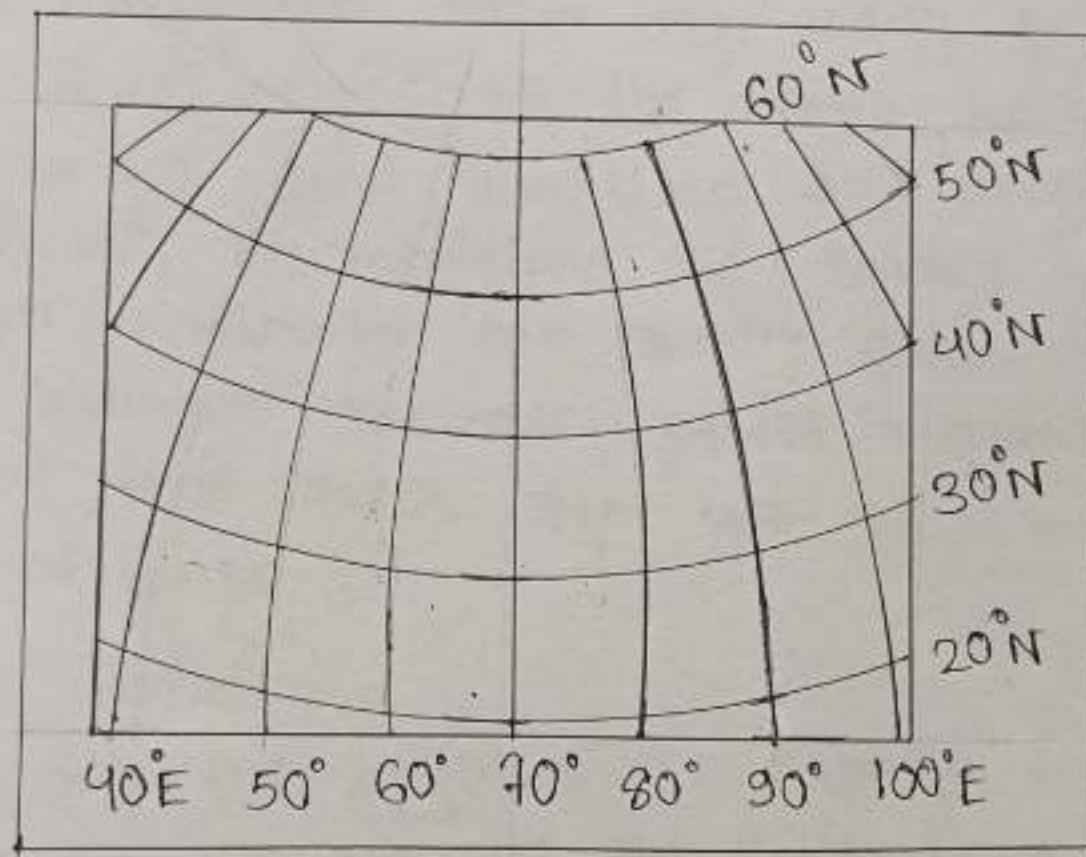
Step-6

Division along the Parallels for spacing of the Meridians.

$$d\theta = \frac{\pi R}{180^\circ} \times I \times \cos \theta$$

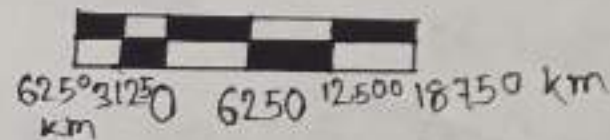
θ	R in cm	$\frac{\pi R}{180^\circ} \times I \times \cos \theta$
20°N	10.24	1.68
30°N	10.24	1.55
40°N	10.24	1.36
50°N	10.24	1.15
60°N	10.24	0.89

BONNE'S PROJECTION



R.F = 1: 625,000,000

Scale



Extension	
20°N to 60°N	
40°E to 100°E	
interval - 10°	

[Signature]
19/01/23

MERCATOR PROJECTION

The Mercator Projection is a cylindrical map Projection Presented by the Flemish geographer and cartographer Gerardus Mercator, in 1569. Mercator Projection the Standard Projection for navigation due to its ability to conserve lines of constant course; that it represents the north as up and south as down everywhere while preserving local directions and shapes. The Mercator Projection is achieved mathematically. The meridians are equally spaced vertical lines, and the latitudes are parallel horizontal lines equally spaced further apart as the distance from the equator increases. Street mapping services such as Google maps, Bing map, map quest etc. use as a mercator called web Mercator for their map images.

Properties :-

- In this Projection only the length of the equator to the length of the equator of the creative sphere. At the Polar Point their length is infinite.
- The scale from the equator to the both Poles, the area and the amount of distance deviation increases at a very rapid rate.
- Parallels and meridians intersect each other at right-angles.

Draw a graticules at 20° interval on scale $1:297 \times 10^6$ for the whole globe.

⇒ calculation

Step-1

Radius of the generating globe, $R = \frac{\text{Actual Radius of the earth}}{\text{Denominator of the R.F.}}$

Step-2

$$R = \frac{640 \times 10^6}{297 \times 10^6} \approx 2.15 \text{ cm}$$

The division along the equator for spacing the meridians at 20° interval

$$d = \frac{2\pi R}{360^\circ} \times I = \frac{2 \times 3.14 \times 2.15}{360^\circ} \times 20^\circ \approx 0.75 \text{ cm}$$

Step-3

The height of any Parallel ($Y\theta$) above equator

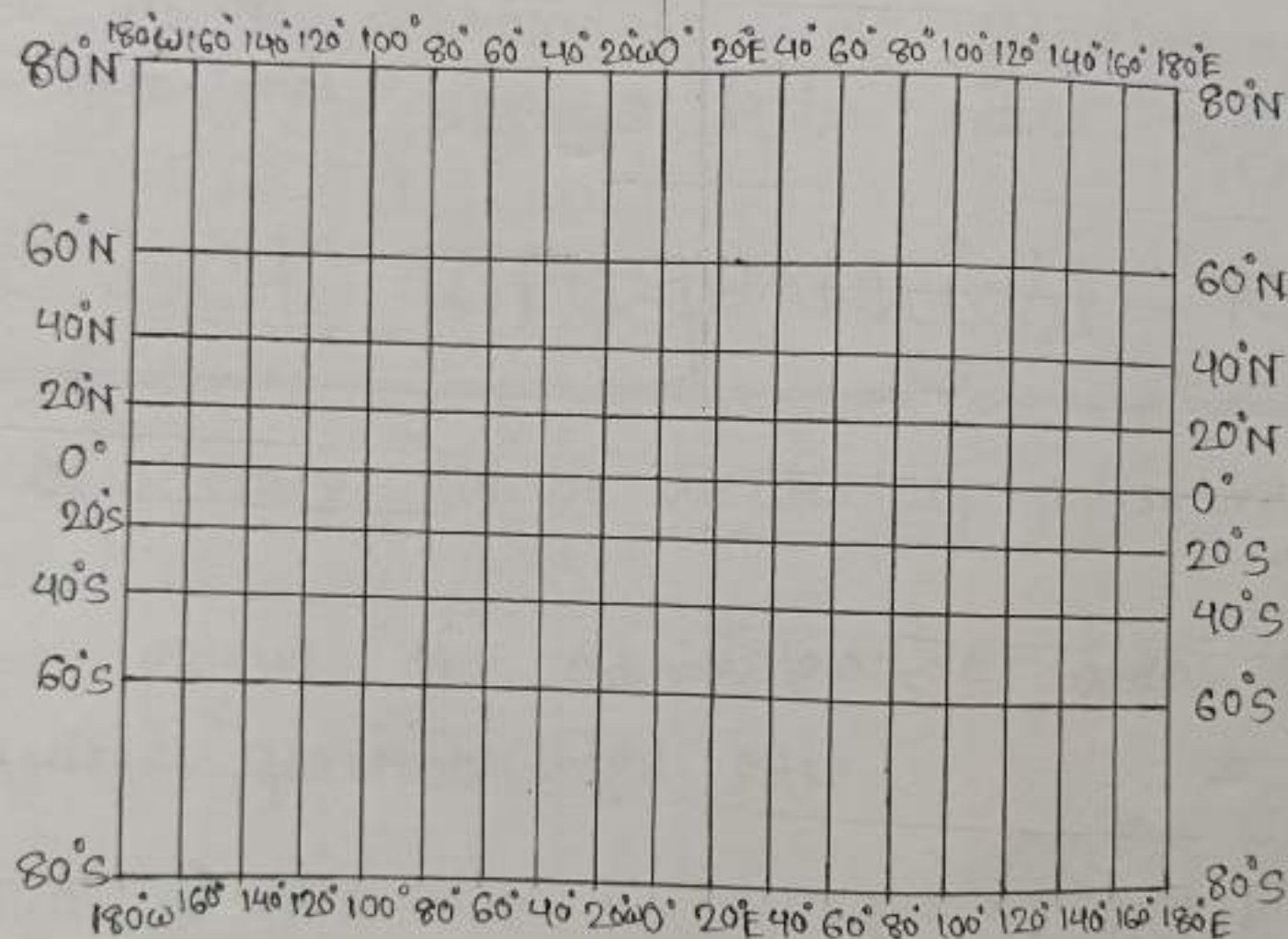
$$Y\theta = 2.3026 \log \tan \left(\frac{90^\circ + \theta}{2} \right)$$

θ	20° N/S	40° N/S	60° N/S	80° N/S
$\left(\frac{90^\circ + \theta}{2} \right)$	55	65	75	85
$2.3026 R \log \tan \left(\frac{90^\circ + \theta}{2} \right)$	0.766	1.640	2.831	5.237

Step-4

Parallels to be drawn — 20° N/S , 40° N/S , 60° N/S , 80° N/S
 Meridians to be drawn — 0° , 20° E/W , 40° E/W , 60° E/W , 80° E/W ,
 100° E/W , 120° E/W , 140° E/W , 160° E/W , 180° E/W

MERCATOR PROJECTION



R.F. = 1: 297 X 106

Extension
whole world

[Signature]
19/01/23

Concept of Topographical Map

When the natural and cultural elements of a Particular latitudinal and longitudinal region in an appropriate scale, geometrically and mathematically using various conventional symbols, it is called Topographical map.

Importance of Topographical Map

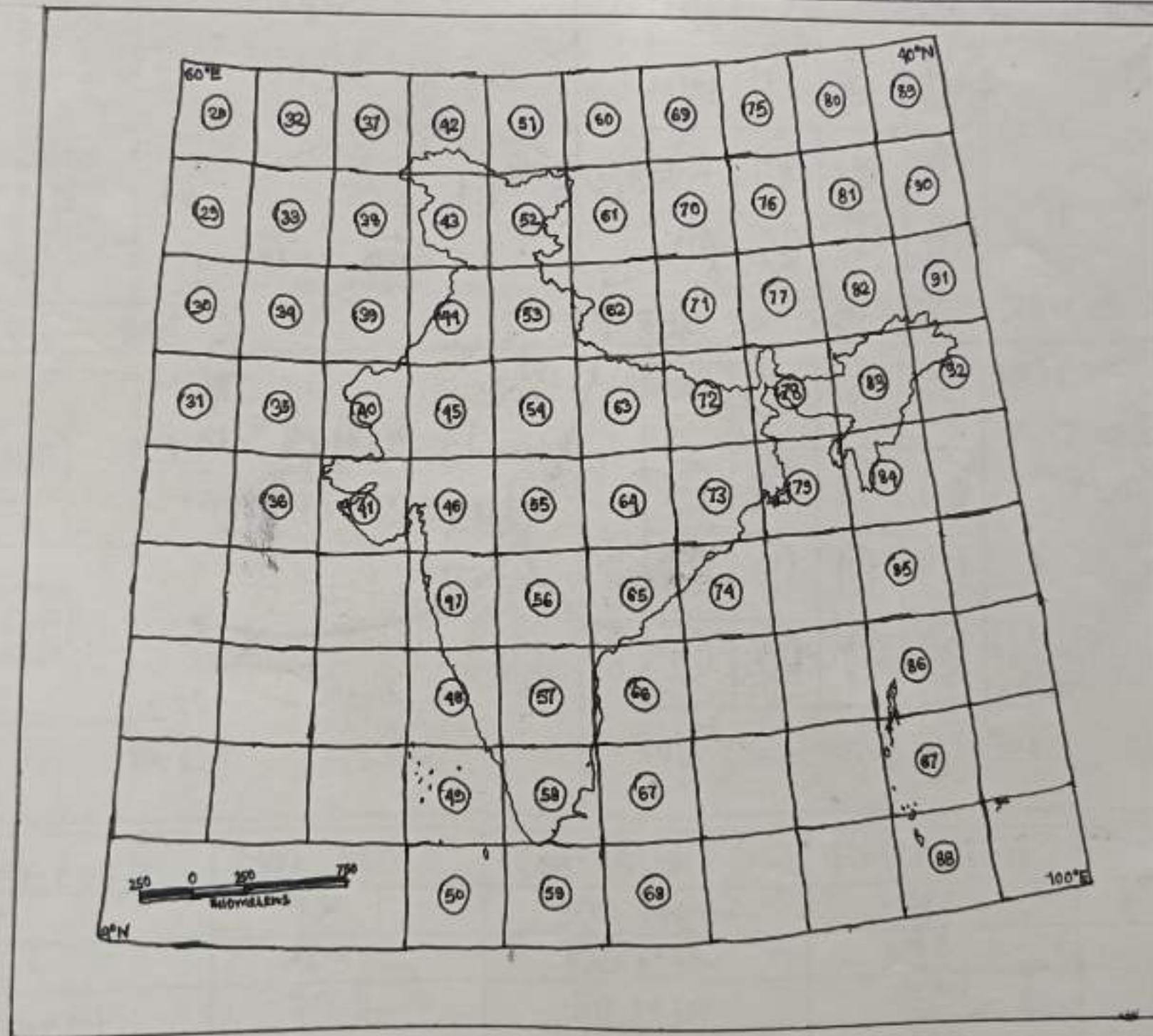
The location of a Place can be accurately determined based on latitude and longitude.

It is known about the administrative areas of a region that is states, districts, governorships etc.

With the helps of this map, the topography and land characteristics of a region that is land height, land slope etc. can be known in detail.

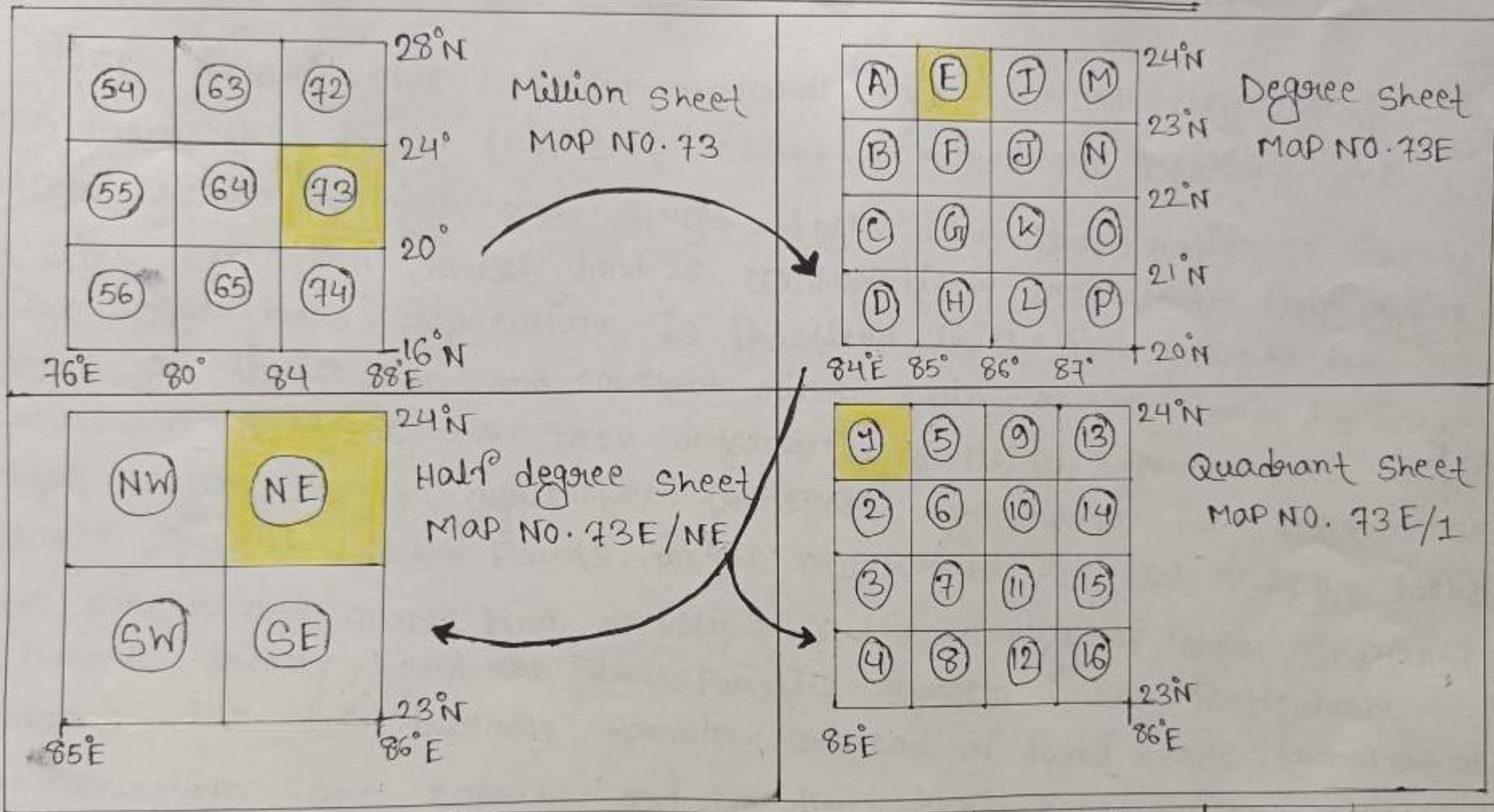
Topographical maps are required for planning the development of an area such as new settlements, setting up of industries, construction of railways, roads etc.

LAYOUT OF MILLION SHEETS COVERING THE INDIAN CONTINENT



[Signature]
20/01/23

NUMBER SYSTEMS



Name of the sheet	Map NO.	Contour	Extension	R.F
Million Sheet	73	500 Mtr	4°	1:1,000,000
Degree sheet	73E	100 Mtr	1°	1:250,000
Half degree Sheet	73 ^E _{NE}	50 Mtr	30'	1:100,000
Quadrant degree Sheet	73 ^E ₁	10-20 Mtr	15'	1:50,000

Signature
19/01/23

INTERPRETATION

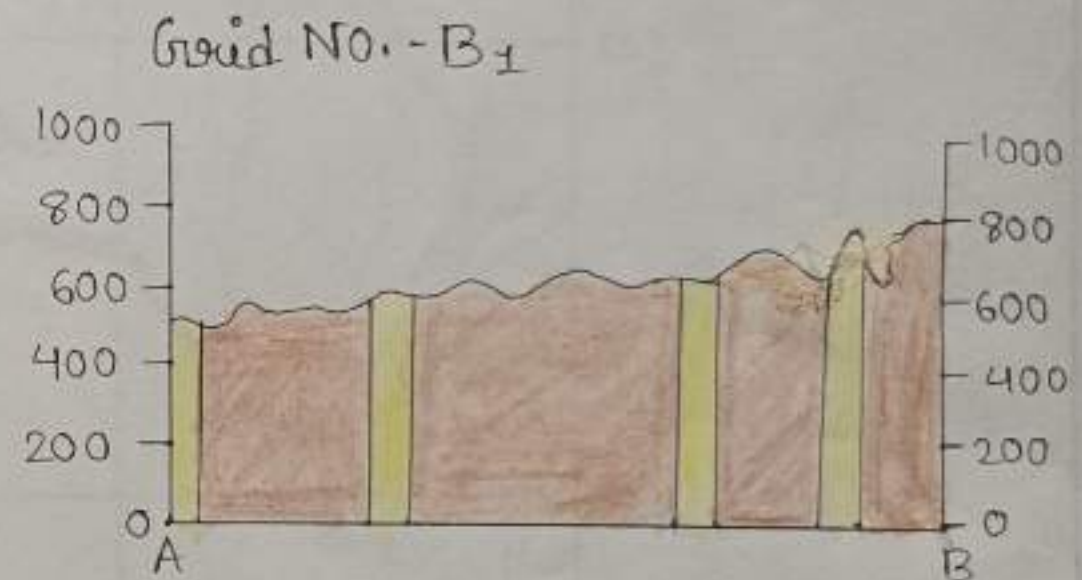
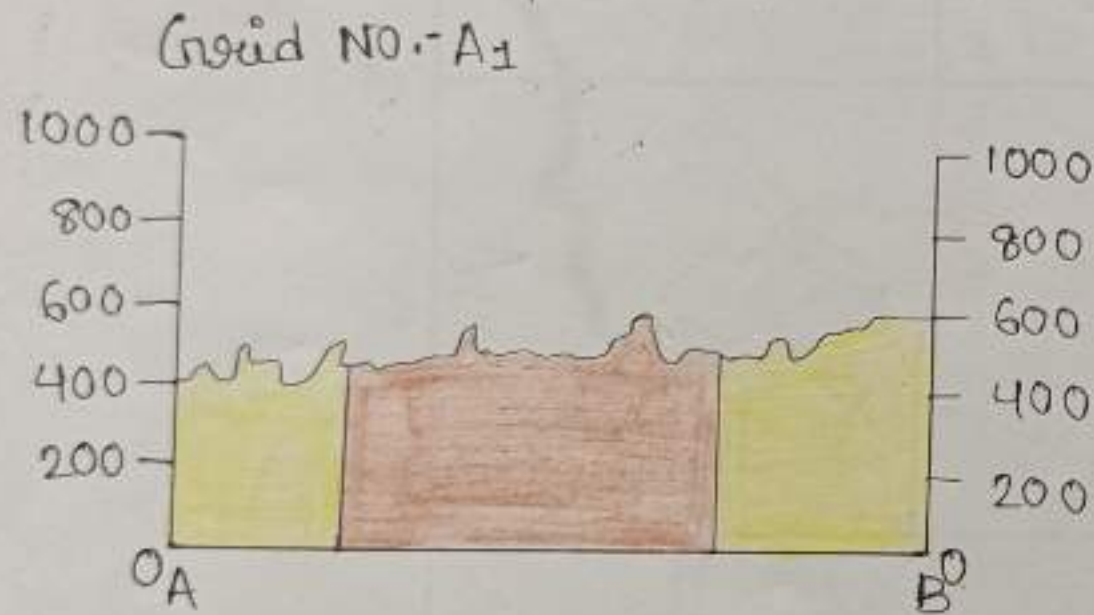
A close relationship between natural and cultural elements can be seen from the drawn transect chart. For example, because the Plateau region is high and steep, there is a Proliferation of forest. But, the extent of forest land is comparatively less in the Plain region. On the other hand, agriculture is Practiced in the Plains due to the Presence of fertile soil and constant rains. Again, as the terrain is flat communication systems have been intensively developed. Improvements in drinking water supply, agriculture, transport and industry have led to dense Population growth in the Plains. On the other hand, the Plateau region lacks Potable water and arable land, resulting in the clearing of forest Scattered settlements locally, and the transportation system is not Particularly developed due to the friendly terrain. Instead of paved roads, transport and communication are carried out by dirty roads. Forestry agriculture, transportation, communication systems and human settlements are closely related to topography.

PHYSIOGRAPHIC DIVISION

BIHAR
HAZARIBAGH DISTRICT

MAP NO. 73.E₁

PHYSIOGRAPHIC PROFILE ALONG AB LINE

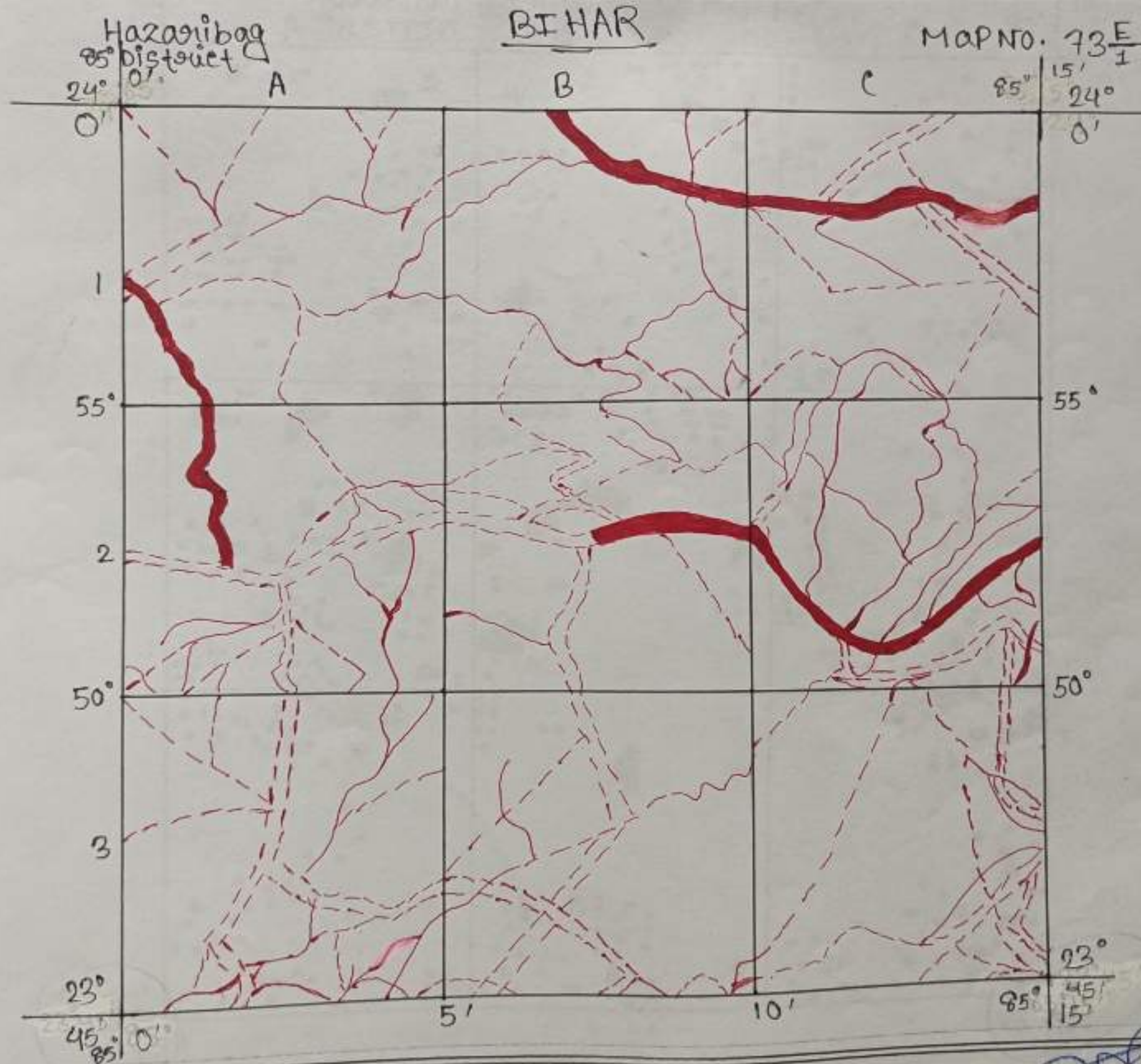


INDEX

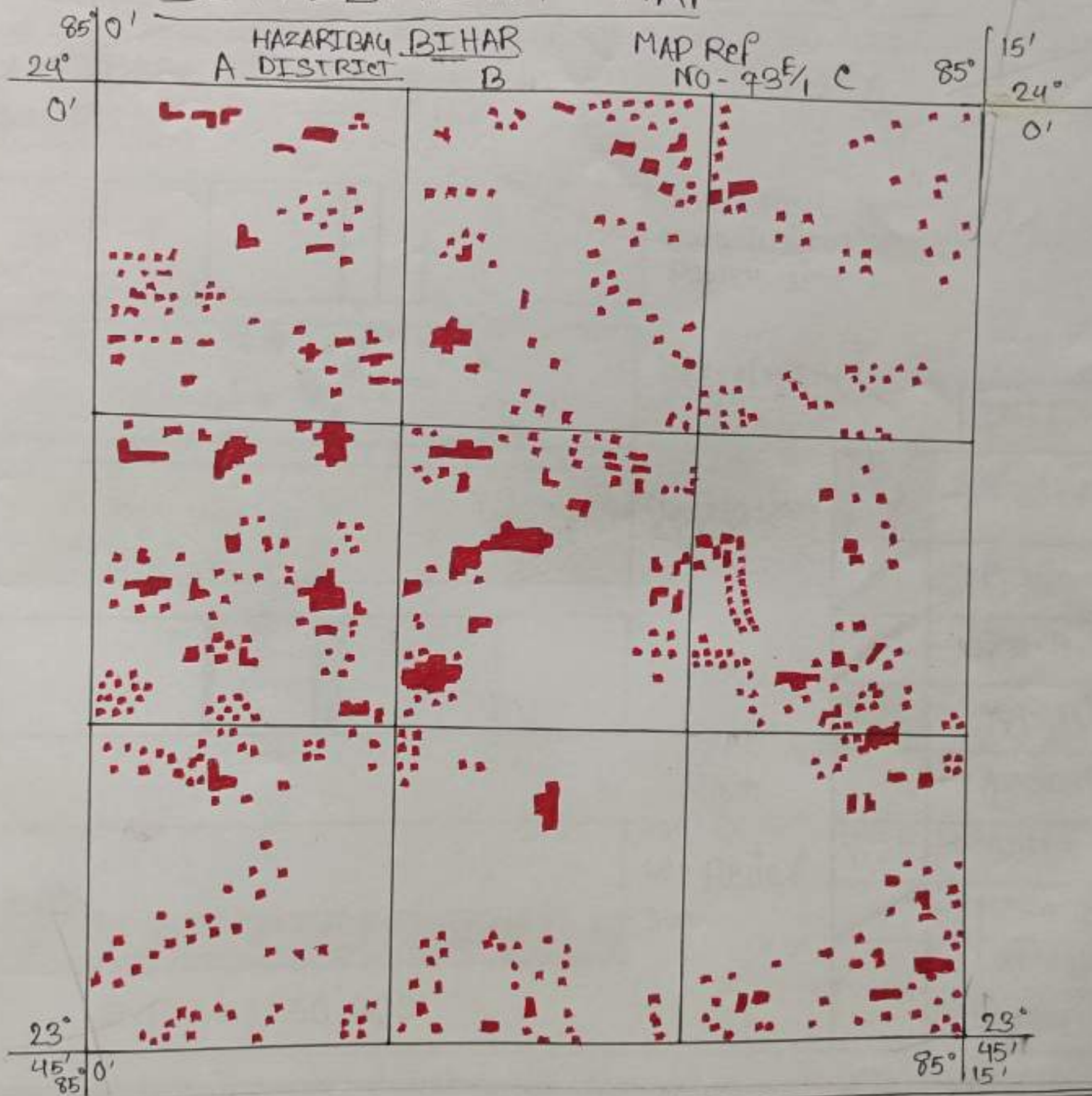
- PLAETO
- HILLY AREA

19/10

BROD TRANSPORT AND COMMUNICATION MAP



SETTLEMENT MAP



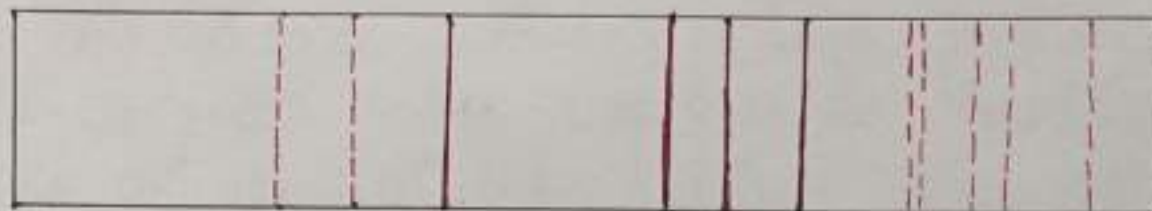
19/10/12

TRANSECT CHART

HAZARIBAGH
DISTRICT

BIHAR

73E/1



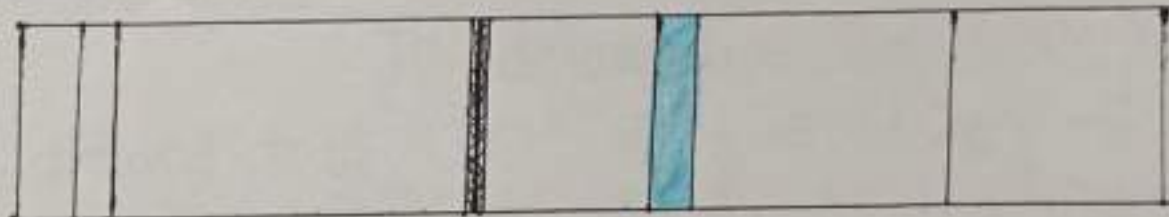
Transposit and
communication
Power line



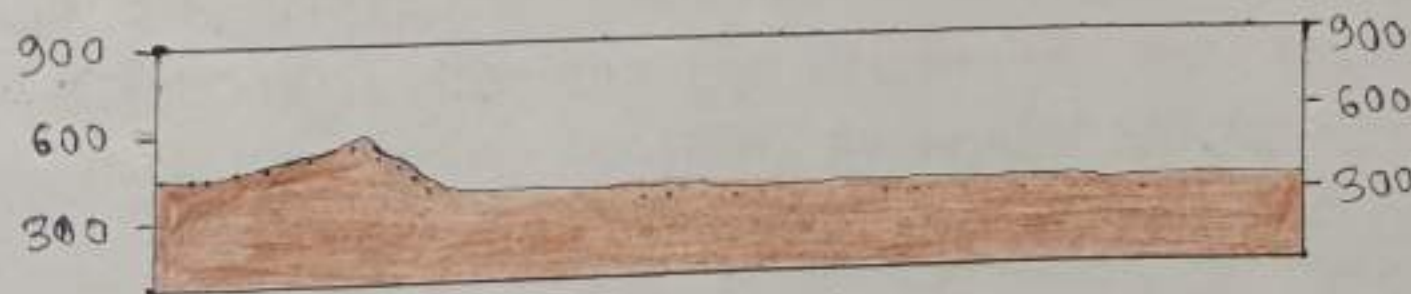
Settlement



Vegetation



River



Relief

R.F. = 1:50,000

INDEX

	→ Relief
	→ Perennial River
	→ Non-Perennial River
	→ Vegetation
	→ Agriculture
	→ Settlement
	→ Metalled Road
	→ Unmetalled Road
	→ Power line

[Signature]

AVERAGE SLOPE

The Slope of the earth is an important element of the land form that actually indicates the slope of earth's surface. It is a quantity and it has a two side - (i) direction. In most cases the average value is determined from the diversity index map without the opinion of the surface degradation.

DETERMINATION OF AVERAGE SLOPE AFTER WENTWORTH

In the year 1930, C.K. Wentworth Published the first Value 5 of the American Journal of Science. A Very Simple and Straightforward method of determining the Slope of his land.

To determine the slope of the landform a geographic map, the map is divided into $1'' \times 1''$ that is 1 mile x mile of land area. The representative determines the number of ascending lines calculating the ascending line passing along the range to each grid, and determine the slope of the land accordingly to the following formula by determining the average number of ascending lines.

According the CWS system, Average Slope —

$$\theta = \tan^{-1} \left(\frac{\text{Average number of contour crossing} \times \text{contour Interval}}{636.6} \right)$$

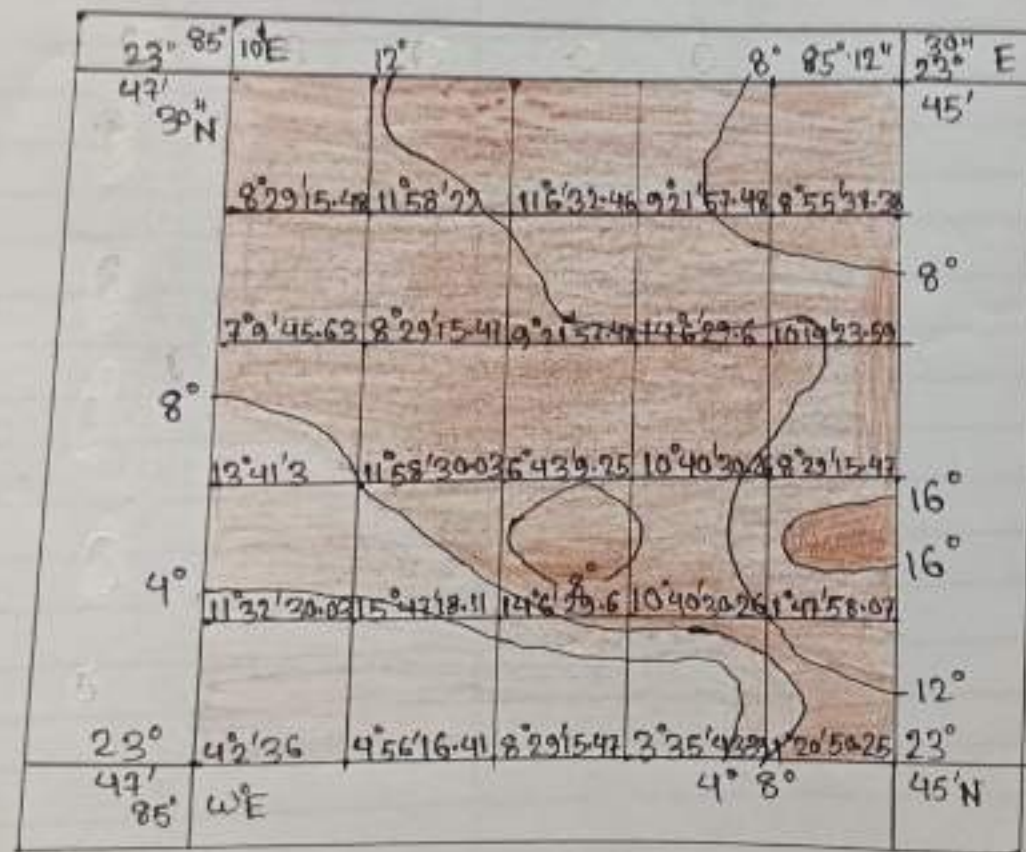
GRID NO	NO. OF CONTOUR CROSSING	AVERAGE NO. OF CONTOUR CROSSING (Acc)	AVERAGE SLOPE $\tan^{-1} \frac{Acc \times c.1}{636.6}$
A ₁	19	4.75	8° 29' 15.48
A ₂	16	4	7° 9' 45.63
A ₃	31	7.75	13° 41' 3
A ₄	26	6.5	11° 32' 30.03
A ₅	9	2.25	4° 2' 36
B ₁	27	6.75	11° 58' 22
B ₂	19	4.75	8° 29' 15.47
B ₃	26	6.5	11° 58' 30.03
B ₄	36	9	15° 47' 18.11
B ₅	11	2.75	4° 56' 16.41
C ₁	25	6.25	11° 6' 32.46
C ₂	21	5.25	9° 21' 57.48
C ₃	15	3.75	6° 43' 9.25
C ₄	32	8	14° 6' 29.6
C ₅	19	4.75	8° 29' 15.47
D ₁	21	5.25	9° 21' 57.48
D ₂	32	8	14° 6' 29.6
D ₃	24	6	10° 40' 30.26
D ₄	24	6	10° 40' 30.26
D ₅	8	2	3° 35' 43.39
E ₁	20	5	8° 55' 38.38
E ₂	23	5.75	10° 14' 23.59
E ₃	19	4.75	8° 29' 15.47
E ₄	4	1	1° 47' 58.07
E ₅	3	0.75	1° 20' 59.25

AVERAGE SLOPE

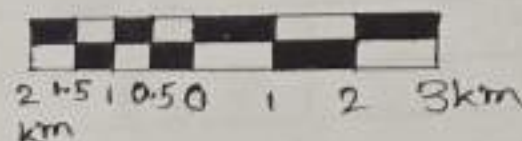
BIHAR

DISTRICT- HAZARIBAGH

MAP NO. 73E/1



scale



GRAPHICAL SCALE \rightarrow 2 cm = 1 km.

R.F. = 1:50,000

INDEX	
AVERAGE SLOPE IN DEGREE	
	< 4
	4-8
	8-12
	12-16
	> 16

M. Das
21/12/22

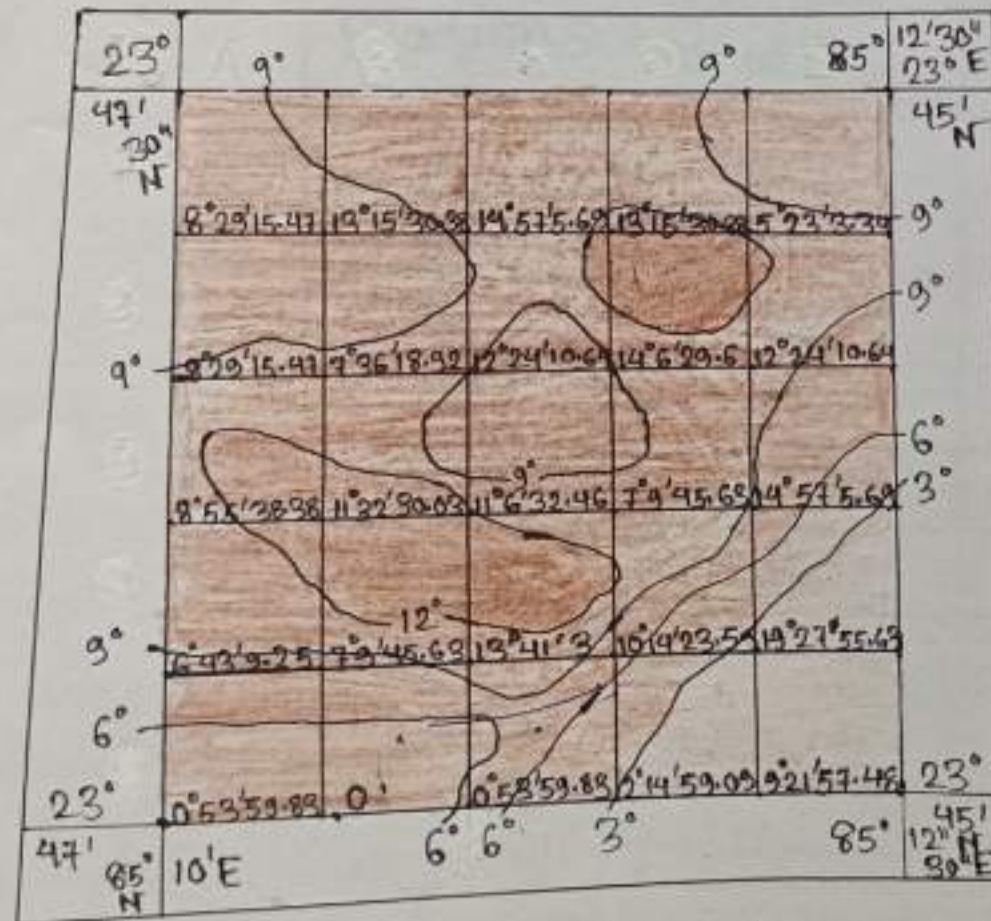
GRID NO	NO. OF CONTOUR CROSSING	AVERAGE NO. OF CONTOUR CROSSING	AVERAGE SLOPE $\tan^{-1} = \frac{\text{Acc} \times C.I}{636.6}$
A ₁	19	4.75	8° 29' 15.47
A ₂	19	4.75	8° 29' 15.47
A ₃	20	5	8° 55' 38.38
A ₄	15	3.75	6° 43' 9.25
A ₅	2	0.5	0° 53' 59.83
B ₁	30	7.5	13° 15' 30.88
B ₂	17	4.25	7° 36' 18.92
B ₃	26	6.5	11° 32' 30.03
B ₄	16	4	7° 9' 45.63
B ₅	0	0	0
C ₁	34	8.5	14° 57' 5.69
C ₂	28	7	12° 24' 10.64
C ₃	25	6.25	11° 6' 32.46
C ₄	31	7.75	13° 41' 3
C ₅	2	0.5	0° 53' 59.83
D ₁	30	7.5	13° 15' 30.88
D ₂	32	8	14° 6' 29.6
D ₃	16	4	7° 9' 45.63
D ₄	23	5.75	10° 14' 23.59
D ₅	5	1.25	2° 14' 59.09
E ₁	12	3	5° 23' 3.34
E ₂	28	7	12° 24' 10.64
E ₃	34	8.5	14° 57' 5.69
E ₄	43	11.25	19° 27' 55.63
E ₅	21	5.25	9° 21' 57.48

AVERAGE SLOPE

BIHAR

DISTRICT - HAZARIBAGH

MAP NO. 73E/1



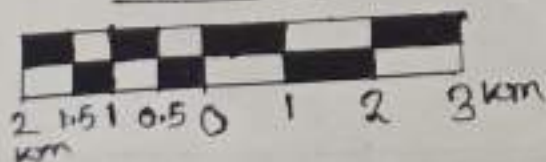
INDEX

AVERAGE SLOPE IN DEGREE



<3
3-6
6-9
9-12
>12

Scale



GRAPHICAL SCALE $\Rightarrow 2\text{cm} = 1\text{km}$

R.F. = 1:50,000

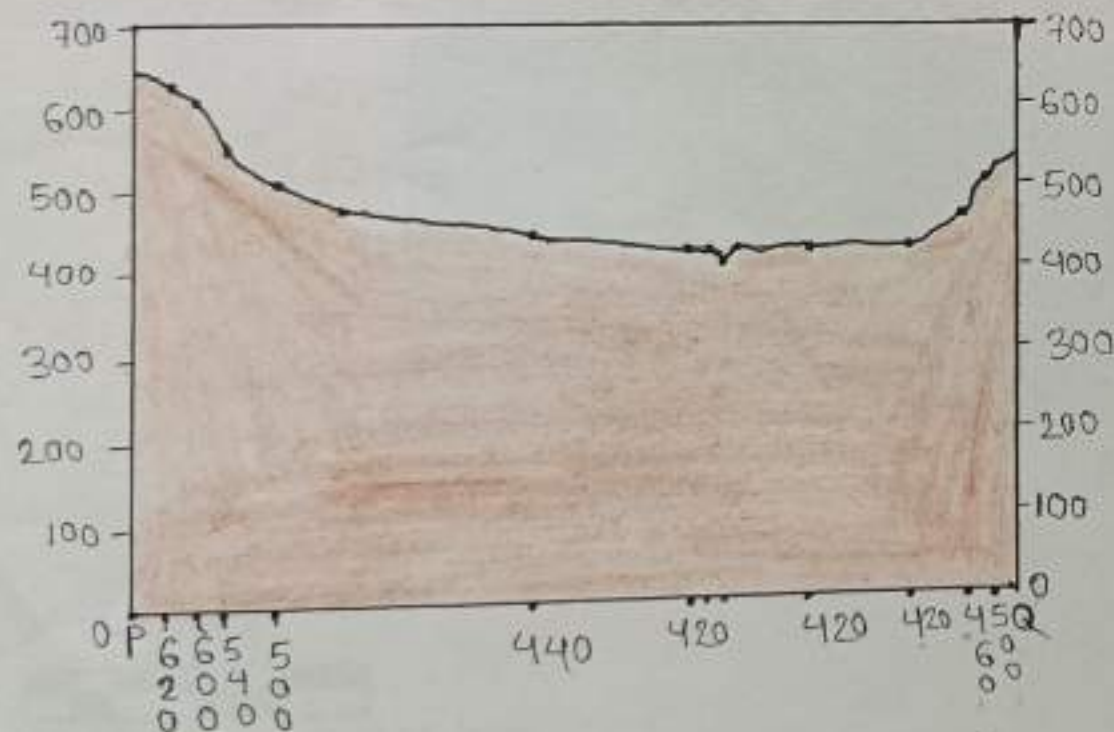
RIVER LONG PROFILE AND CROSS PROFILE

Stations	Contour value in metre	Rotameter Reading in (cm)	Scale 1 cm = 2 km
A ₁	460	0	0
A ₁	440	2	1
A ₂	440	5	2.5
A ₃	420	17	8.5
A ₄	420	22	11
A ₅	400	37	18.5

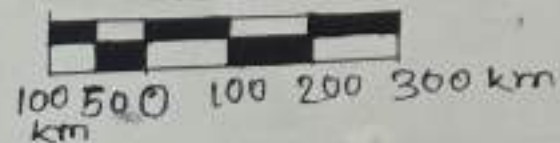
CROSS PROFILE OF GARHI RIVER

BIHAR
HAZARIBAG DISTRICT

MAP NO-73 E/1

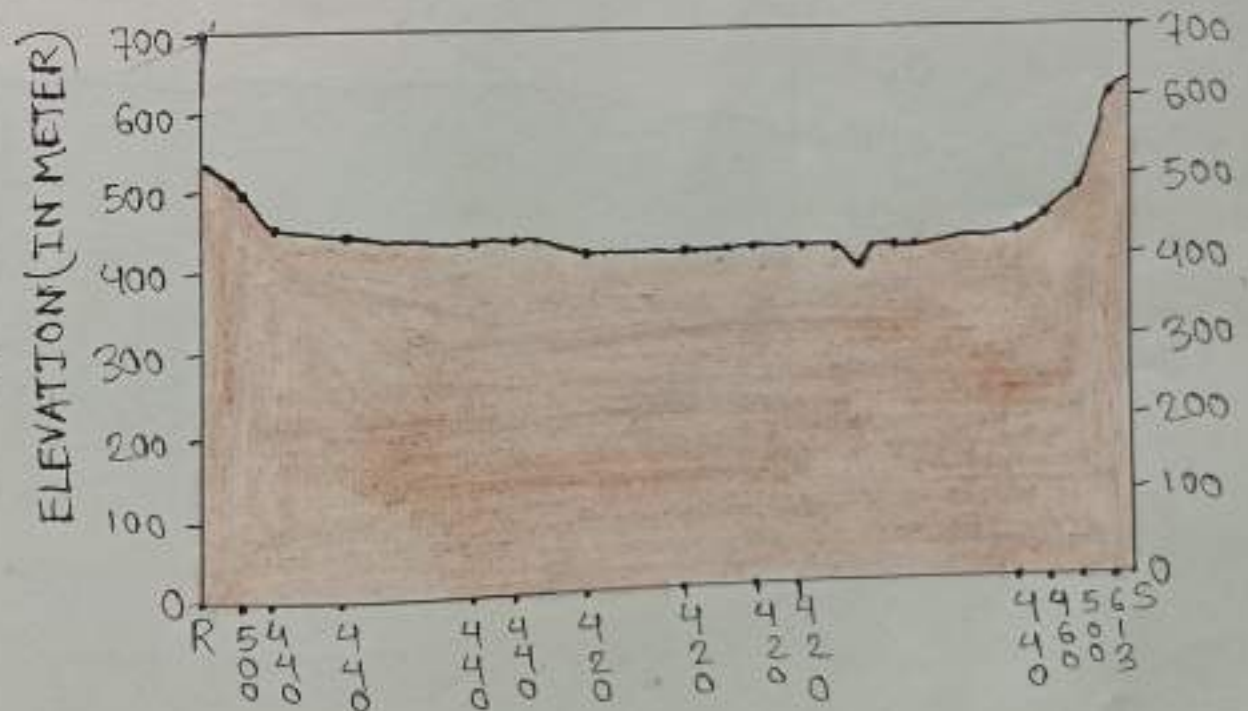


Scale



BIHAR
HAZARIBAG DISTRICT

MAP NO-73 E/1



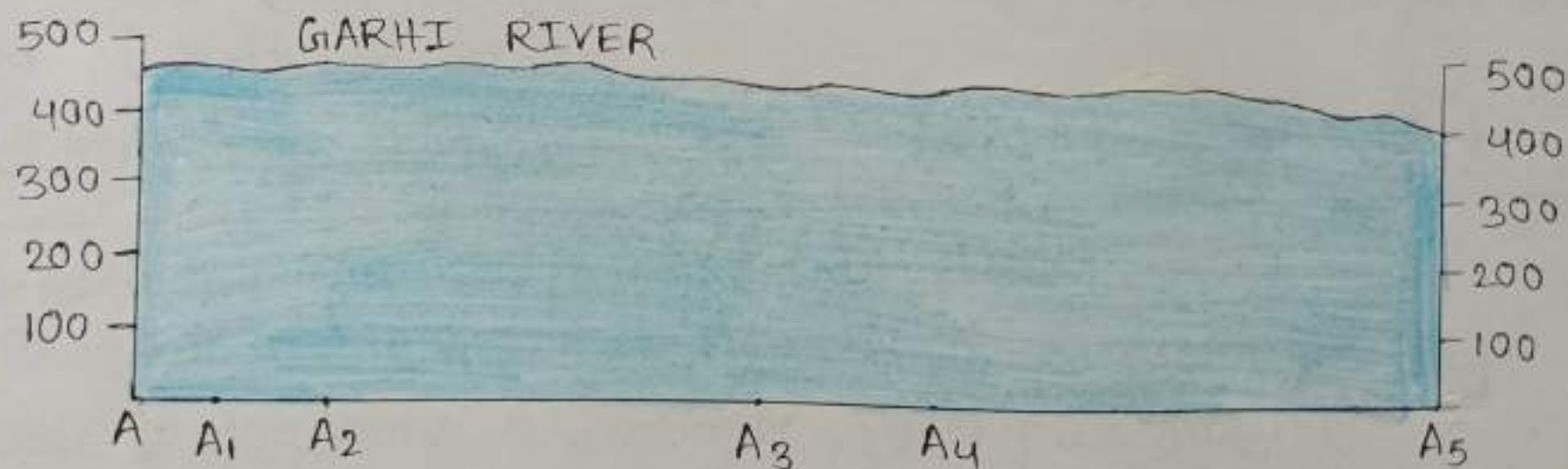
[Signature]
19/01/23.

LONG PROFILE OF GARHI RIVER

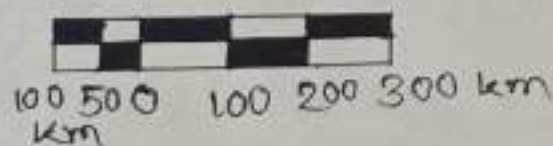
BIHAR

HAZARIBAG DISTRICT

MAP NO. 73 E₁



Scale



[Signature]
19/01/23.

WEATHER MAP

DEFINITION :- A weather one that Portrays weather elements recorded at a Particular instant of whole world or Part of it. Normally, the weather elements are shown either by conventional symbols by absolute numerical values or by codes.

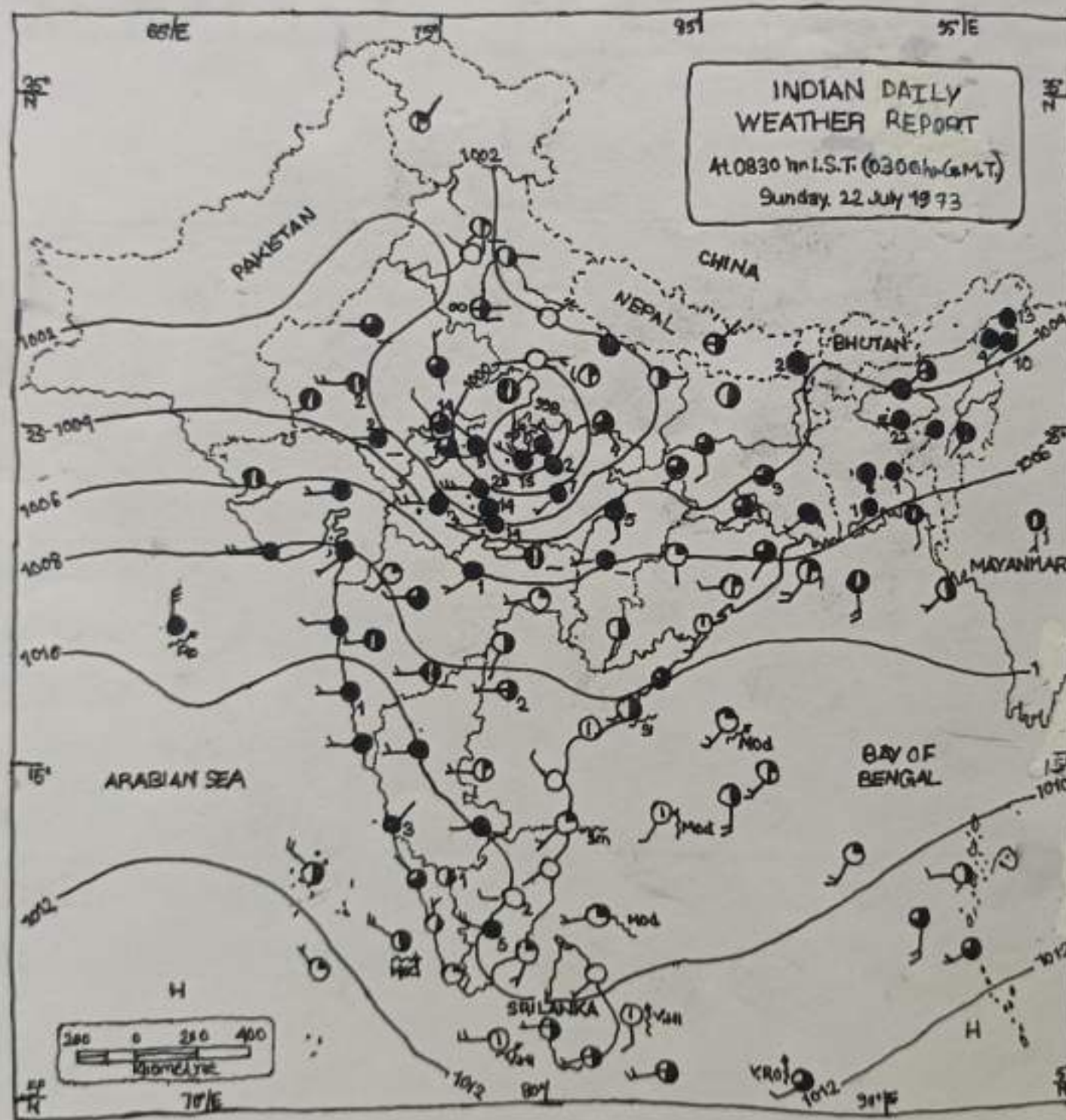
Example :- The weather map shows the weather conditions as recorded at 06:30 hr I.S.T [03:00 hr G.M.T] on Sunday 22 July 1973. Obviously the weather map represents that of the South-west monsoon season which is precisely the Period of rain in India.

THE PRIMARY CHARACTERISTIC AS SHOWN BY THE MAP

- (i) Low Pressure : 996 mb [at the mid India]
- (ii) High Pressure : 1012 mb [at the South western Arabia]
- (iii) Isobars : Monsoon, 9 isobars, Patchy in outline
- (iv) Wind : South-western and western wind dominant gentle to windy.
- (v) Rainfall : Mostly in the north-eastern and south-eastern hilly states.
- (vi) Sea : Mainly moderate and smooth

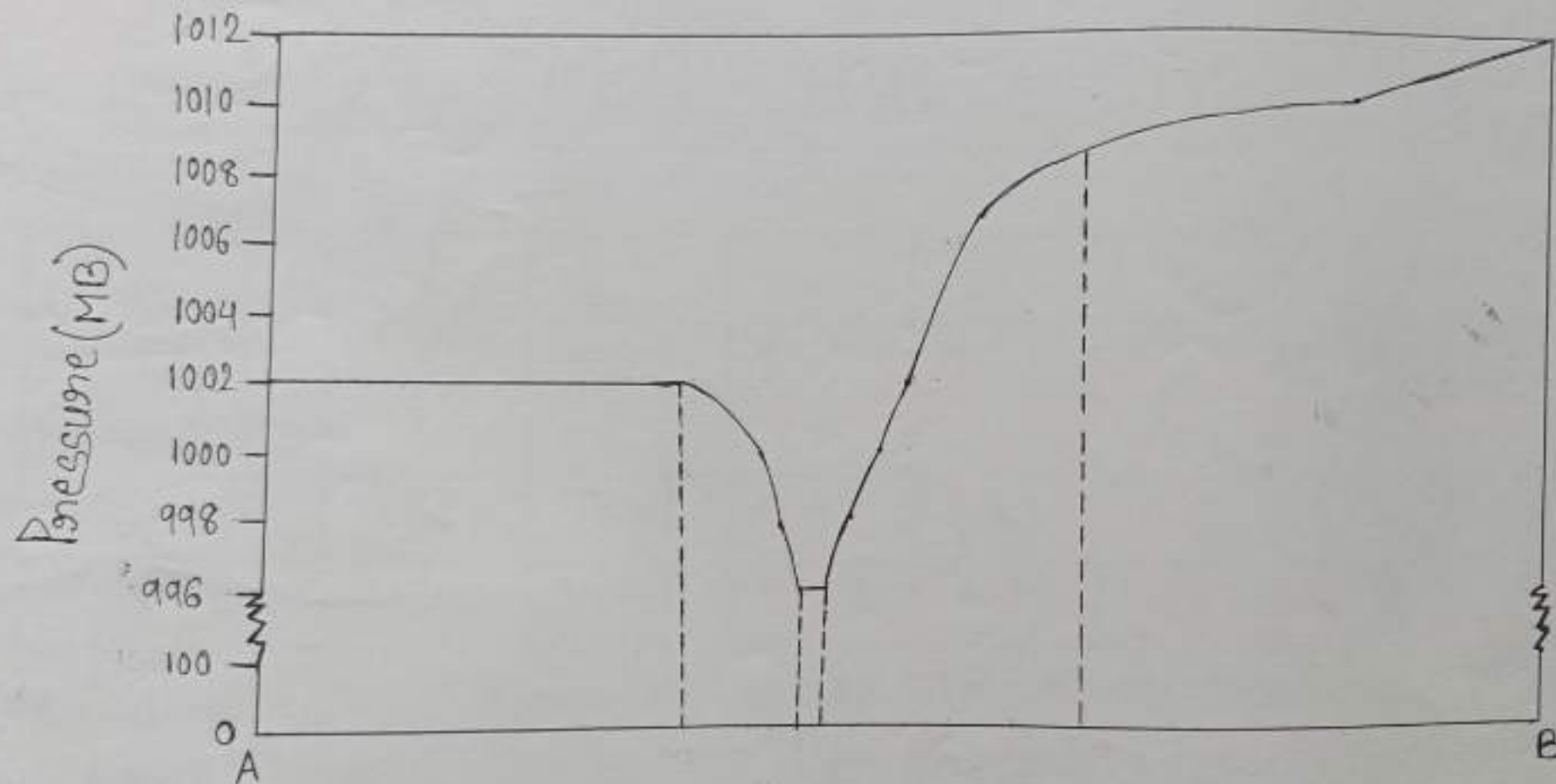
Hence, though it is monsoon in swing because of well distributed cloudness and rainfall, the presence on any steep pressure gradient and high velocity winds

INDIAN DAILY WEATHER REPORT



✓ 06.02.23

ISOBARIC CROSS SECTION ALONG THE LINE AB



Scale
1 cm = 2 Mb

✓ 06.02.23

CLOUD COVER

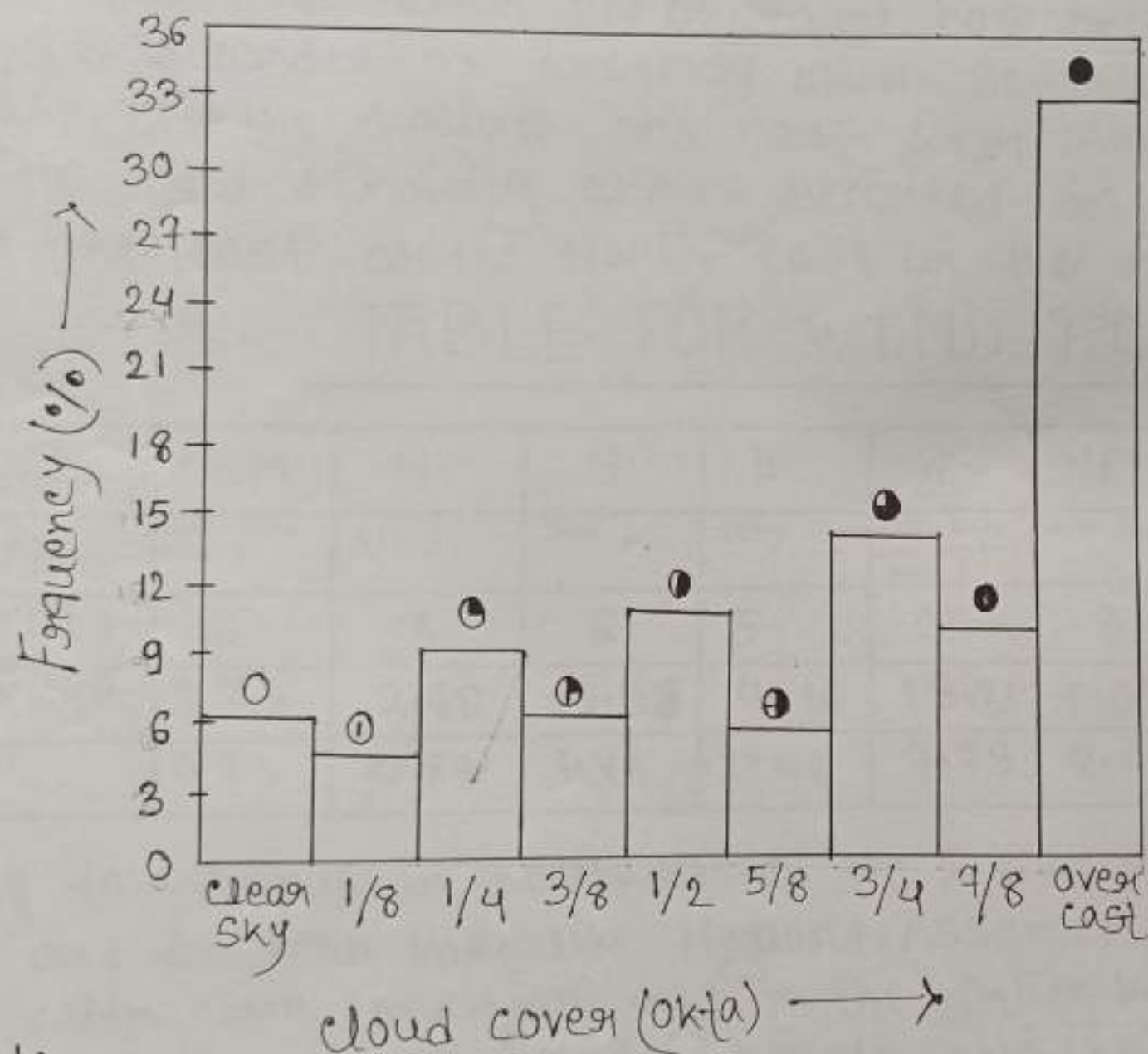
The moist and rain bearing South-Western season of monsoon wind have produced clouds varying intensity depending upon the local situation of atmosphere instability.

TABLE FOR CLOUD COVER

CLOUD COVER	CLEAR SKY	1/8	1/4	3/8	1/2	5/8	3/4	7/8	OVER CAST	TOTAL
TALLY MARK	II			II		I				
FREQUENCY	7	5	10	7	13	6	16	11	37	112
% OF FREQUENCY	6.25	4.46	8.93	6.25	11.61	5.36	14.28	9.82	33.03	
SCALE 1cm = 3	2.08	1.48	2.97	2.08	3.57	1.78	4.76	3.27	11.01	

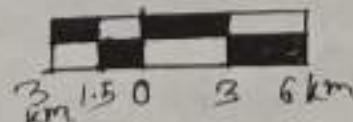
According to the table 33% of the stations recorded completely overcast or full cover sky. while about 6% of the stations absolutely clear. overcast conditions were found in the places of Gujarat, Madhyapradesh, Maharashtra, Karnataka and also in the Part of eastern India, Bihar, west Bengal, Assam, Meghalaya, Nagaland. cloudness sky of clear sky has been recorded at Haridwar, Border areas of Uttarpradesh, Punjab, Himachal Pradesh, Tamilnadu and in Andhrapradesh over the west of the continent Part of cloudy sky ranging from 1/8 th - 7/8 th has been recorded.

CLOUD COVER DIAGRAM



Scale

1 cm to 3% of cloud cover



✓ 06.02.23

WIND DIRECTION

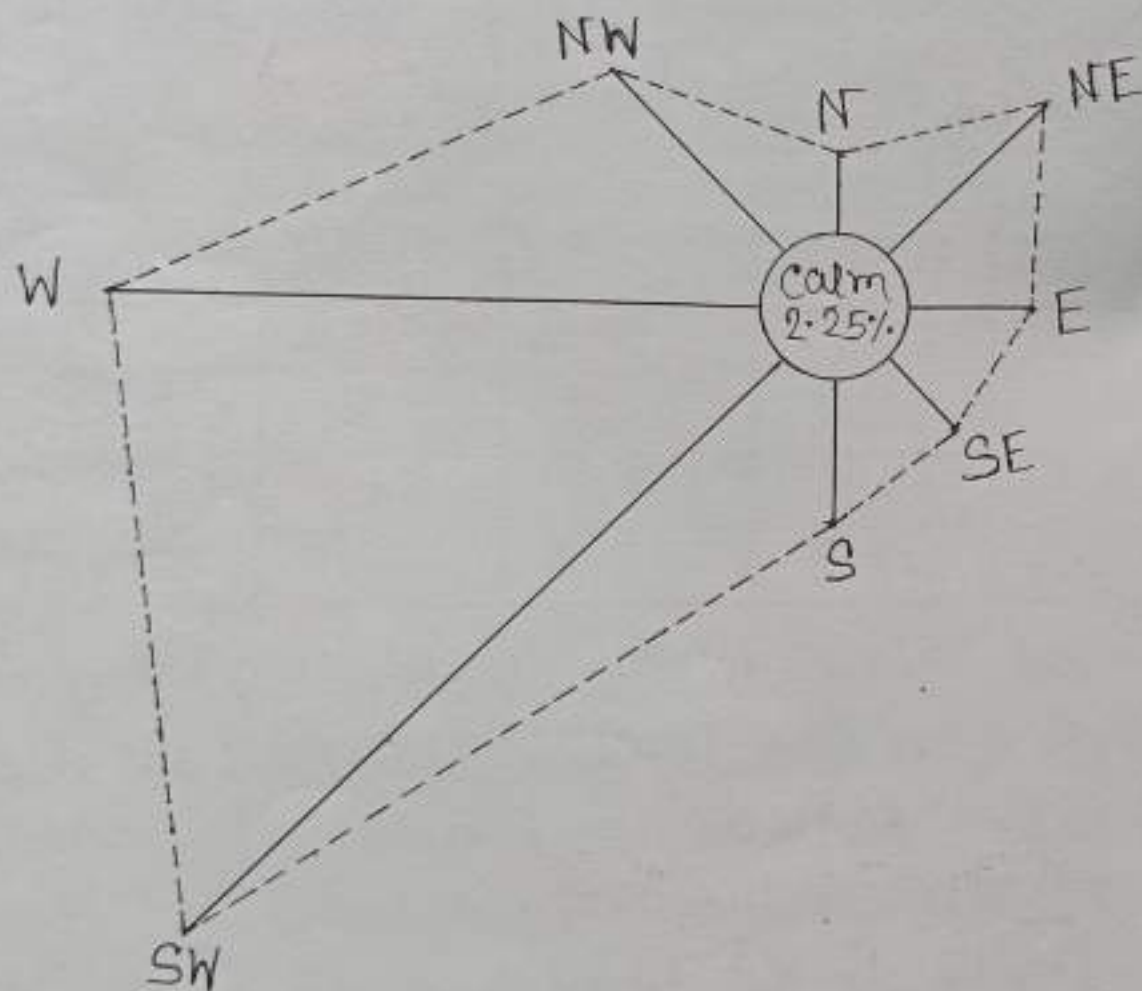
Normally, wind blows from high Pressure to low Pressure. The direction of surface wind is influenced by the pressure gradient, vector coriolis force and surface features. In this map about 14% of wind has recorded as calm conditions and another 23% recorded as westerly wind. South westerly wind have been recorded at 29% of the stations and north west wind have been recorded at 9% of the stations and remaining winds recorded as local winds blowing from the north or the east or the North-east or the south-east.

TABLE FOR WIND ROSE

WIND DIRECTION	CALM	N	S	E	W	NE	SE	NW	SW	TOTAL
TALLYMARK	 				 				 	
FREQUENCY	16	3	6	5	26	9	4	10	33	112
% OF FREQUENCY	2.25	2.68	5.36	4.46	23.21	8.03	3.57	8.93	29.46	
SCALE 1 cm = 3%	0.75	0.89	1.78	1.48	7.73	2.67	1.19	2.97	9.82	

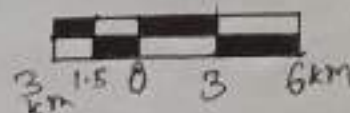
According to the map in the middle of the Indian Sub continent some part of Madhyapradesh and eastern part like Nagaland, Assam, Meghalaya, Manipur are the regions dominant with calm condition and on the other hand Rajasthan, Gujarat, Maharashtra, Karnataka, Tamilnadu, Kerala are the dominant with western wind in eastern part again, West Bengal, Odisha, some part of the Tamilnadu, Andhra Pradesh are the dominant with South-western wind.

WIND ROSE DIAGRAM



Scale

1 cm to 3 % of wind rose



06.02.23

WIND VELOCITY

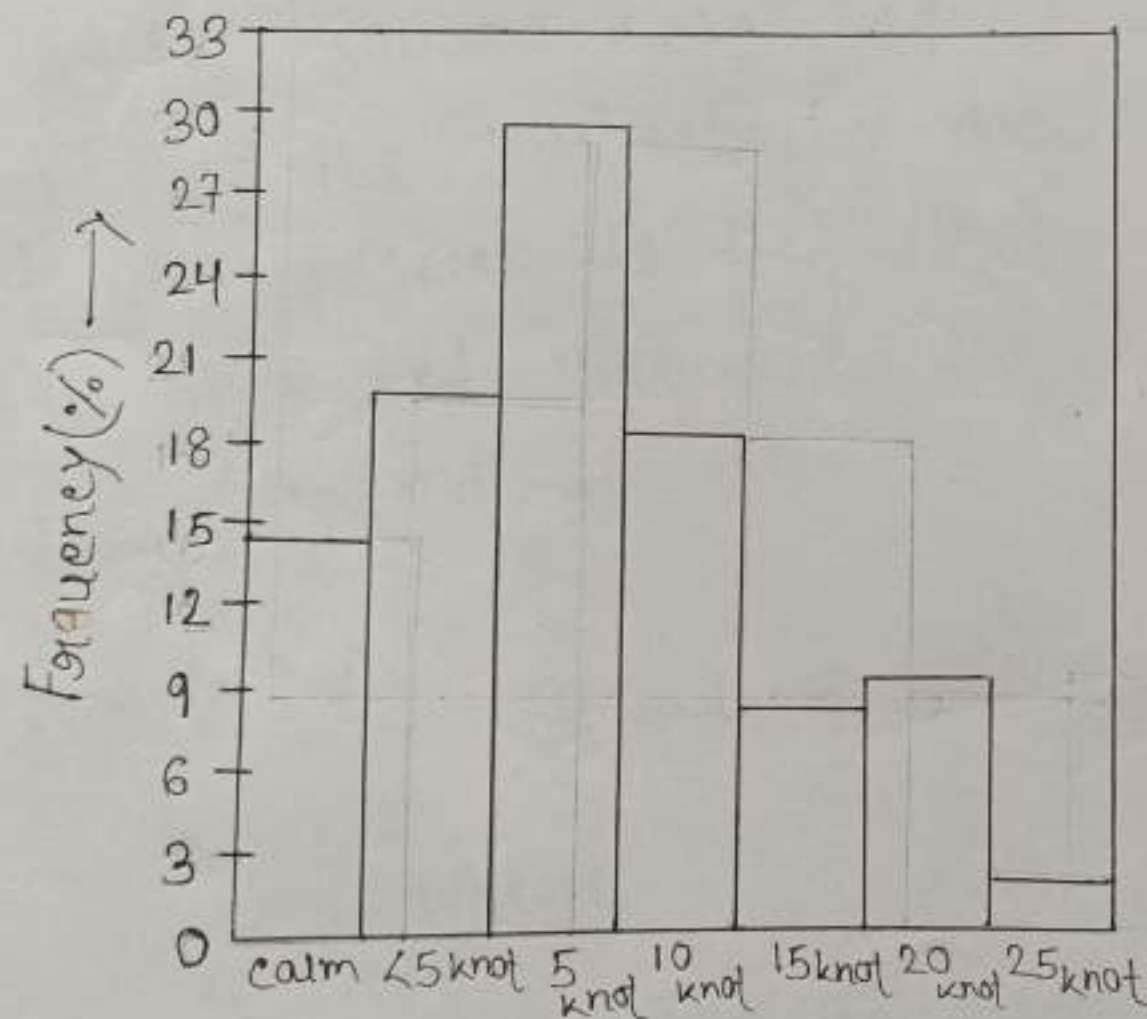
The velocity of the wind depends the Pressure gradient force. It is also influenced by geostrophic conditions. The degree of Persistence of the prevailing system and also occurrence of components if any. In season of South west monsoon the Pattern of circulation mainly governed by the flow vector of the transient equatorial monsoon Airmass.

TABLE FOR WIND VELOCITY

WIND VELOCITY	CALM	< 5 KNOT	5 KNOT	10 KNOT	15 KNOT	20 KNOT	25 KNOT	TOTAL
TALLY MARK								
FREQUENCY	16	22	33	20	9	10	2	112
% OF FREQUENCY	14.28	19.64	29.46	17.86	8.03	8.93	1.78	
SCALE 1 cm = 3	4.76	6.54	9.82	5.95	2.67	2.97	0.59	

According to our given weather map 14% area are experienced calm condition. The lightest velocity of 25 knot has been recorded at Madhyapradesh and light to gentle breeze of 40 knot to 20 knot has been recorded at Rajasthan, Gujarat, Some Part of the Madhyapradesh and Maharashtra. On the other hand the lightest breeze of less than 5 knot to 5 knot has been recorded at Ladakh, Jammu and Kashmir, Himachal Pradesh, Punjab and Places of Haryana and in major part of West Bengal, Chattisgarh, Odisha and also in Maharashtra, Karnataka, Goa, Tamilnadu and Kerala.

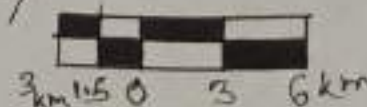
WIND VELOCITY DIAGRAM



Scale

1 cm = 3% of wind velocity

Wind Velocity (knot) →



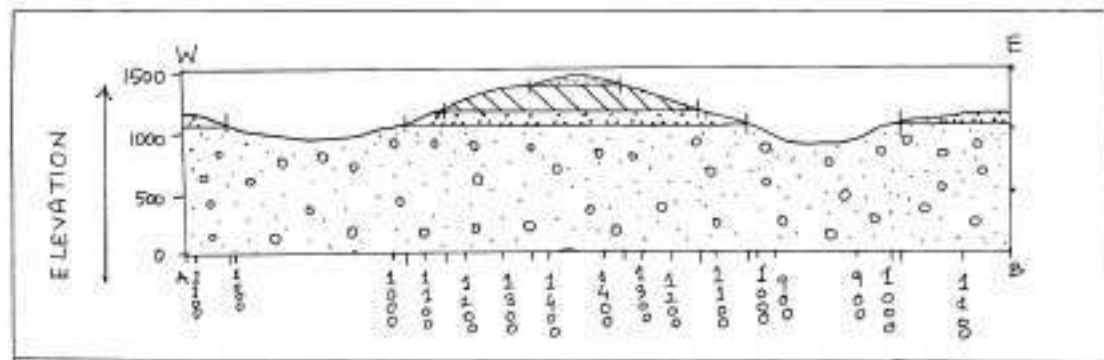
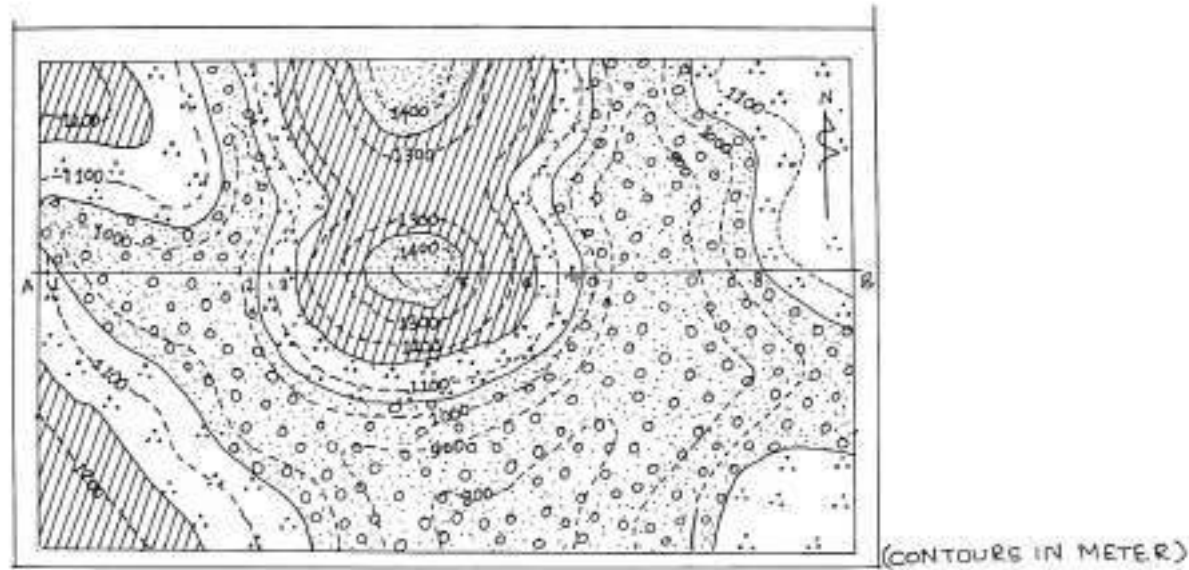
Examined
Dept. of Geography
B. C. College, Asansol
Examined
2/2/23

✓ 06.02.23

Examined
Dept. of Geography
B. C. College, Asansol

GEOLOGICAL MAP

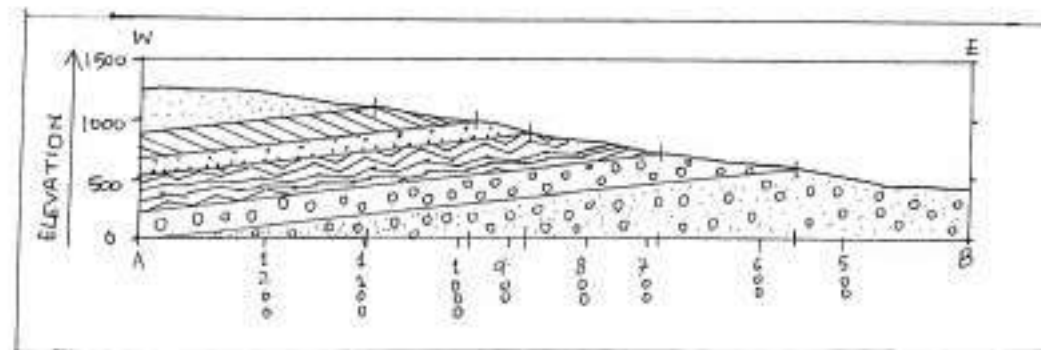
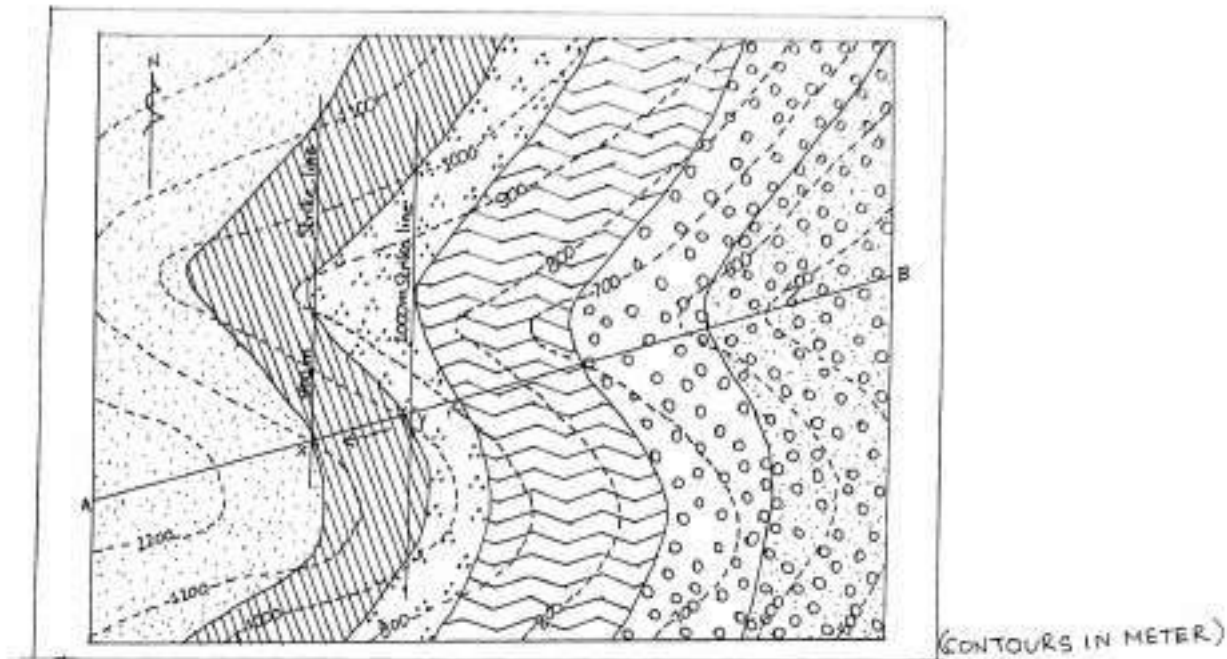
GEOLOGICAL SECTION ALONG THE LINE AB



INDEX	
	SANDSTONE
	SHALE
	MUDSTONE
	CONGLOMERATE

HORIZONTAL AND
VERTICAL SCALE 1cm to 500meter

GEOLOGICAL SECTION ALONG THE LINE AB



INDEX	
	CONGLOMERATE
	GRIT
	LIMESTONE
	MUDSTONE
	SHALE
	SANDSTONE

HORIZONTAL AND
VERTICAL SCALE 1cm to 500 meter

IDENTIFICATION OF ROCKS AND MINERALS



GRANITE

GRANITE

CHARACTERISTICS

1. Granite is the most common intrusive rock in Earth's Continental Crust. Mineral - Quartz (20% - 40%), (50% - 80%) K-Feldspar (orthoclase and/or microcline, and perthite).
2. Melting Temperature - $1215 - 1260^{\circ}\text{C}$.
3. It has poor primary permeability but strong secondary permeability.
4. Chemical composition of the core corresponds to elbasite and andesite (An 30 - 38), whereas more acidic elbasite and andesite occur in the margin.
5. It is coarse- to medium-grained.
6. It is familiar as a mottled pink, white, gray, and black granite stone.
7. Granite crystallizes from silica-rich magma that are miles deep in Earth's crust.
8. Granite has phanitic (medium to coarse grained), holocrystalline porphyrocrystalline, porphyrocrystalline in places texture.



BASALT

BASALT

CHARACTERISTICS

1. Basalt, extrusive igneous (volcanic) rock that is low in silica content, dark in colour, and comparatively rich in iron and magnesium.
2. Some basalts are quite glassy (tachylytes), and many are very fine-grained and compact.
3. Basalt rock colour - dark gray to black.
4. Basalt is largely composed of minerals with little resistance to weathering.
5. Basalts are classified on a chemical and petrographic basis into 2 main groups:-
 - The tholeiitic basalts
 - The alkali basalts
6. The rock hardness of basalt is 6 as per the Mohs scale and can be observed through a combination of its compressive strength. Generally, 100-300 Mpa or Megapascal is the compressive strength.
7. Minerals - Plagioclase feldspar, biotite, olivine, pyroxene, hornblende and less than 20% quartz.



DOLERITE

DOLERITE

CHARACTERISTICS

1. Dolerite, fine to medium-grained, dark gray to black intrusive igneous rock. It is extremely hard and tough and is commonly quarried for crushed stone, under the name of trap.
2. It usually occurs as dykes, plugs or sills.
3. Dolerite hardness - 2.93 - 3.05
4. Colour - dark gray to black
5. Dolerite formation - Dolerite cools under basaltic volcanoes, like those at mid-ocean ridges.
6. Mineral - Plagioclase, pyroxene, hornblende, quartz.

26/09/22



PEGMATITE

PEGMATITE CHARACTERISTICS

1. A pegmatite is a holocrystalline intrusive igneous rock showing a very coarse texture, with large interlocking crystals usually greater in size than 1cm (0.4 in) and sometimes greater than 1 meter (3 ft).
2. The 3 major minerals found in Pegmatite are - Quartz, Lepidolite and Clausthalite.
3. Pegmatite is a common plutonic rock, of variable texture and coarseness, that is composed of interlocking crystals of widely different sizes.
4. Geophysics: Unlike other base metal commodities, Lithium - Caesium - Tantalum Pegmatites often have very weak magnetic or conductivity properties and therefore, cannot be distinguished from adjacent S-type granites or sediments, unless there is a stark contrast in these physical properties.
5. Pegmatite in which main ingredients are Biotite mica (black), Microcline (Pink), Oligoclase (white), Quartz (gray). The rock has a monzogranitic composition.



LIMESTONE

LIMESTONE

CHARACTERISTICS

1. Some varieties of limestone have an extremely fine grain.
2. Limestone is usually gray, but it may also be white, yellow or brown.
3. It is a soft rock and it is easily scratched.
4. It will effervesce readily in any common acid.
5. Chemical Composition - Calcite
6. Hardness - Generally hard
7. Texture - Clastic or Non-Clastic
8. Grain size - Variable, can consist of clasts of all sizes.
9. Limestone is an extremely strong and long-lasting rock.



SHALE

SHALE

CHARACTERISTICS

1. Shale is a fine-grained, clastic sedimentary rock formed from mud that is a mixture of flakes of clay minerals and tiny fragments (silt-sized particles) of other minerals, especially quartz and calcite.
2. Composition - Clay mineral, Quartz.
3. Colour - Gray to Black.
4. Miscellaneous - Thin platy beds.
5. Texture - Clastic; Very fine-grained ($\leq 0.004 \text{ mm}$).
6. The defining characteristic of shale is its ability to break into layers or fissility.
7. Shale usually contains other clay-size mineral particles such as Quartz, Chert and Feldspar.
8. Chemical composition - 58% clay minerals, 28% quartz, 6% feldspar, 5% carbonate minerals, 2% iron oxides.



SANDSTONE

SANDSTONE

CHARACTERISTICS

1. A sedimentary rock consisting of sheets of sand, mineral particles of sheets sand, mineral particles, and binding matrix deposited one atop in water environments and desert formations. Mineral: Feldspar, mica.
2. Very porous and water will penetrate it easily.
3. Brown, red, purple, and pink sandstone and commonly called brownstone.
4. Texture - Clastic (only noticeable with a microscope)
5. Grain size - 0.06 - 2 mm. Clasts visible to the naked eye, often identifiable.
6. Colour - Variable through gray, yellow, red to white reflecting the variation in mineral content and cement.
7. Sandstone, a sedimentary rock, is formed when grains of sand are compacted and cemented together over thousands or millions of years.



PHYLLITE

PHYLLITE

CHARACTERISTICS

1. Type - Metamorphic Rock
2. Texture - Foliated; Fine-grained
3. Composition - Muscovite, Biotite, Quartz, Plagioclase
4. Color - Shiny gray
5. Phyllite is a durable and soft rock
6. It is rated between 1-2 on the Mohs Hardness Scale and has a specific gravity of 2.72-2.73.
7. Phyllite has a resistance to heat, pressure, and water.
8. Its grain size is larger than that of slate but smaller than that of Schist.



SLATE

SLATE

CHARACTERISTICS

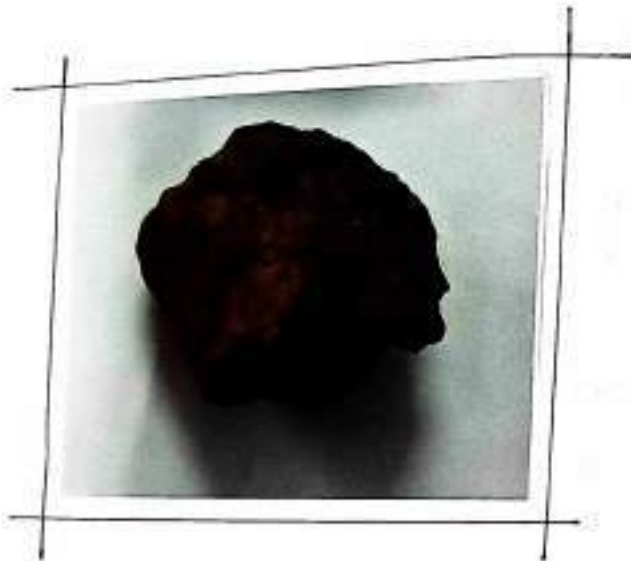
1. Type - Metamorphic Rock
2. Composition - Chlorite, Plagioclase, Quartz (Mineral)
3. Index Minerals
→ Colour - Bluish-gray
4. Miscellaneous - Foliation surface is dull and planar, slaty cleavage.
5. Texture - Foliated; Very fine grained.
6. Slate is a fine-grained, foliated homogeneous metamorphic rock derived from an original shale-type sedimentary rock composed of clay or volcanic ash through low-grade, regional metamorphism.
7. Slate is considered to be in between 2.5-4 on this scale in terms of hardness, which means that it is, on average, almost as hard as marble and limestone, but not as hard as granite or natural quartz.



CONGLOMERATE

CONGLOMERATE CHARACTERISTICS

1. Conglomerate is sedimentary rock that looks like concrete.
2. Colour - Tan to Brown.
3. Texture - Clastic; Coarse-grained (2-64 mm).
4. It is usually found in most thick, crudely stratified layers.
5. Conglomerate has a variable hardness, and it often looks like concrete.
6. The pebbles of sand can be composed of many different minerals.
7. Conglomerate is a coarse-grained rock that is often found in riverbeds.
8. It consists of large, rounded pebbles (clasts) cemented by a matrix made of calcite, iron oxide, or silica (Mineral).
9. Conglomerate is composed of particles of gravel, that is to say of particles of greater than 2mm in diameter, consisting, with increasing size, of granules, pebbles, cobbles, and boulders.



LATERITE

LATERITE

CHARACTERISTICS

1. Laterite is both a soil and a rock type rich in iron and aluminium and is commonly considered to have formed in hot and wet tropical areas. Mineral - Kaolinite, goethite, hematite, gibbsite.
2. Nearly all laterites are of rusty-red coloration, because of high iron oxide content.
3. These soils are acidic in nature and coarse and crumbly in texture.
4. The proportion of lime and silica is reduced when leaching takes place.
5. Laterite soils are leached soils because alternating dry and wet spells cause the soluble silica to be removed.
6. Texture - It is frequently pisolitic (pebble-like). Exposed surfaces are blackish-brown to reddish and commonly have a shaggy, or scoriaceous lava-like appearance. Commonly lighter in colour (red, yellow, and brown) when freshly broken, it is generally soft when freshly quarried but hardens on exposure.



MARBLE

MARBLE

CHARACTERISTICS

1. Colour - White, pink
2. Derived - limestone, dolomite
3. Grain size - medium grained, can be seen interlocking calcite crystals with the naked eye.
4. Hardness - hard, although component mineral is soft (calcite is 3 on Moh's scale of hardness).
5. Structure - Massive
6. Group - Metamorphic Rocks
7. Texture - Non-foliated, Medium - to coarse-grained.
8. Marble is often known as soft stone.
9. Marble is a rock resulting from metamorphism of sedimentary carbonate rocks, most commonly limestone or dolomite (rock).
10. Mineral - Micas, Quartz, iron oxides, graphite, pyrite, clay minerals.

26/9/21



SCHIST

SCHIST

CHARACTERISTICS

1. Type - Metamorphic Rock
2. Texture - Foliated ; Medium - to coarse-grained
3. Composition - Muscovite, Biotite, Quartz, Feldspar
4. Index Minerals
→ Color - Silver to Gray
5. Schist is a crystalline metamorphic rock, mostly composed of more than 50% tabular and elongated minerals with grain size coarse enough to be visible to the unaided eye.
6. The shiny surfaces that these schists often show are due to the presence of the flashy flaky mineral, mica, formed during the metamorphism.



QUARTZITE

QUARTZITE

CHARACTERISTICS

1. Quartzite, sandstone that has been converted into quartz rock
2. Quartzite is free from pores and have a smooth fracture.
3. When struck they break through, not around, the sand grains, producing a smooth surface instead of a rough and granular one
4. Quartzite is a compact, hard, nonfoliated, medium to coarsely crystalline, and also almost mono mineral metamorphic rocks with granoblastic texture.
5. Pure Quartzite is usually white to gray.
6. Though quartzites often occur in various shades of pink and red due to varying amounts of hematite. Other colors, such as yellow, green, blue and orange, are due to other minerals.
7. Quartzite is a metamorphic rock that results of a compaction and recrystallization of quartz sandstone, composed mainly of quartz (with 99%), and sometime presents little crystals of mica.
8. Mineral - Silicon dioxide (SiO_2).



BAUXITE

BAUXITE

CHARACTERISTICS

1. Colour - White, gray, sometimes stained yellow, orange, red, or pink, or brown by iron or included iron minerals. Minerals - silica, titania, aluminosilicate.
2. Diagnostic Properties - Soft, low specific gravity, colour often exhibits pisolitic habit.
3. Chemical Composition - Variable but always rich in aluminium oxides and aluminium bearing ore (bauxite) and aluminium hydroxides.
4. Bauxite is a sedimentary rock.
5. Bauxite ore is not a mineral with a homogeneous chemical composition and crystal structure, but a heterogeneous mixture of these minerals.
6. Bauxite consists of a mixture of 4 different minerals:-
 - diaspore ($Al_2O_3 \cdot H_2O$)
 - boehmite [$AlO(OH)$]
 - gibbsite (hydrargillite) $Al_2O_3 \cdot 3H_2O$
 - Corundum (Al_2O_3)

26/09/22

(M) NITROGEN AMMONIACAL IN SOIL

CHART-AMMONIACAL NITROGEN

CHART NO. 6
Required for estimation of Ammoniacal Nitrogen in soil

Lbs per acre as N	Kg/acre as N
High 180	81.64
Medium 65	29.48
Low 3	5.89



RESULT

Lbs per acre as N	Kg/acre as N
High 180	81.64

DESCRIPTION- Nitrogen level affects soil pH. Nitrogen is a key element in plant growth. Too much Nitrogen makes soil acidic 'Nitrogen Toxicity'. Soil should contain an adequate supply (40ppm) of Nitrogen (N) in soil. Primary reasons for soils becoming more acidic (lower pH values) is through the use of Nitrogen (N) fertilizers containing Ammonium - N.

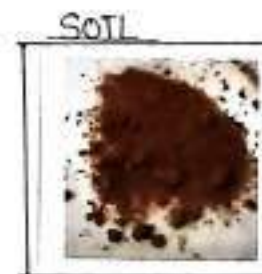
PLANTS THRIVING- Soybeans, Alfalfa, Peanut

(N) NITROGEN IN SOIL

CHART-NITRATE NITROGEN

CHART NO. 5
Required for the estimation of Nitrate (Nitrogen in soil)

Lbs per acre as N	Kg/acre as N
45 High	20.41
18 Medium	8.16
6 Low	4.08
4 Very Low	1.81



RESULT

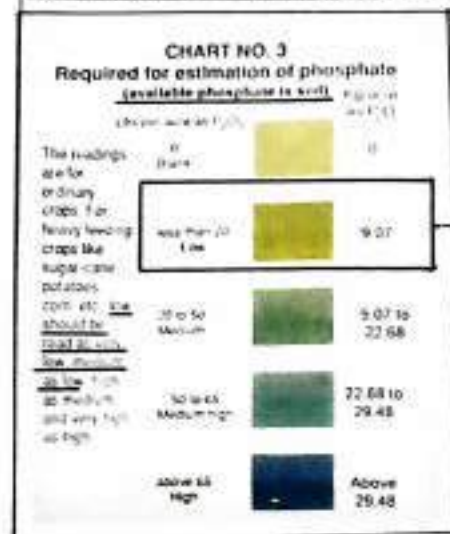
(Nitrogen in soil)	Kg/acre as N
Lbs per acre as N 45 High	20.41

DESCRIPTION - Too much Nitrogen can actually slow plant growth because Nitrogen not used by plants is washed (leached) out of the soil, which makes soil more acidic. Nitrogen Toxicity - extreme dark leaves "Burning" of leaf tips.

PLANTS THRIVING - Lettuce, Clover

PHOSPHOROUS IN SOIL

CHART - PHOSPHATE (P) SOIL



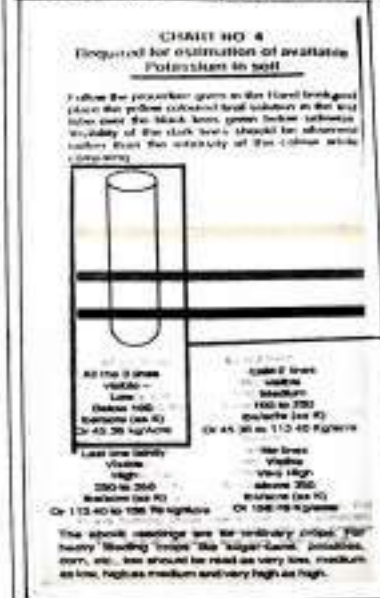
RESULT



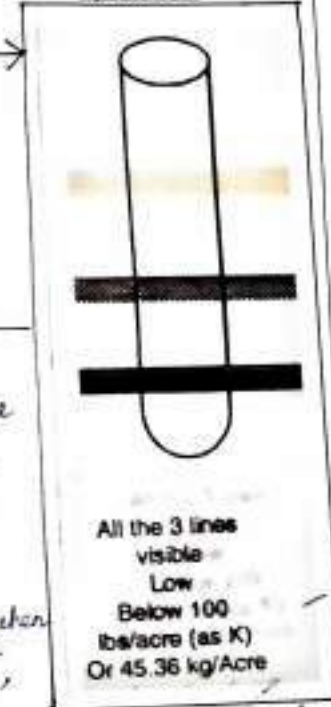
DESCRIPTION - Soil phosphorous categorized into 3 types - (1) Soluble phosphorous, (2) Soluble phosphorous, (3) stable phosphorous. Healthy levels of P in soil ranges from 25-50 ppm. Optimum soil pH - 6 and 7 (between).
PLANTS THRIVING - Banana, Soy, Sunflower.

POTASSIUM IN SOIL

CHART - POTASSIUM (K) SOIL



RESULT



DESCRIPTION - Potassium availability is highest above soil pH of 6.0. At low pH, potassium availability is generally low. Potassium most available to plants when soil has a pH of 6.5 - 7.5, plants obtain sufficient Oxygen.
PLANTS THRIVING - Avocado, Tomatoes.

SOIL pH (POTENTIAL OF HYDROGEN)

CHART-SOIL pH



RESULT

Very slightly
acidic

pH 6.5



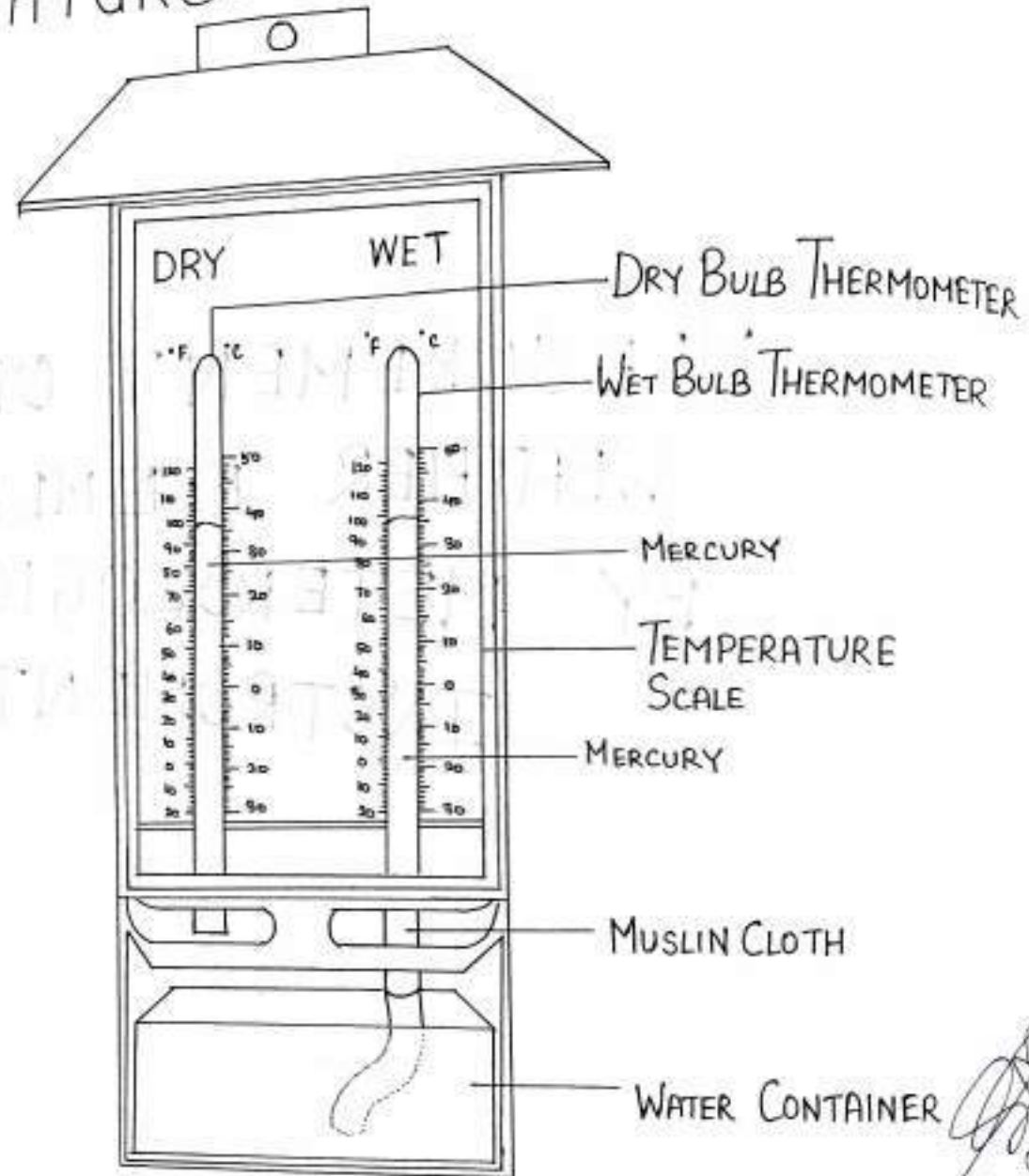
DESCRIPTION - Soil pH is a measure of the acidity or basicity of a soil, defined as -ve logarithm of activity of hydronium ions in a solution (H^+ or H_3O^+ aq). Acid soil pH below 7, Alkaline soil pH above 7. Ultra-acidic soil ($pH < 3.5$) and very

strongly alkaline soil ($pH > 9$) are rare. Optimum pH range for most plants is between 6.5 and 7.5, however, many plants have adapted to thrive at pH values outside this range.

PLANTS THRIVING - Sweet corn, beans, blueberries, huckleberries, willow trees, Daffodil flower, dogwood trees, Camellia flowers.

23.11.22

HYGROMETER



DETERMINATION OF RELATIVE HUMIDITY BY HYGROMETER

PLACE - DEPARTMENT - GEOGRAPHY, BIDHANCHANDRA COLLEGE

DATE - 24-09-2022

INSTRUMENT NUMBER -

TIME - 12:45 p.m.

<u>NUMBER OF READING</u>	<u>DRY BULB THERMOMETER READING °F</u>	<u>MEAN DRY BULB THERMOMETER READING °F</u>	<u>WET BULB THERMOMETER READING °F</u>	<u>MEAN WET BULB THERMOMETER READING °F</u>	<u>DEPRESSION OF WET BULB (DIFFERENCE)</u>	<u>RELATIVE HUMIDITY (%)</u>
1st	87°F	264°F	82°F	249°F	5	80%
2nd	88°F	264°F	83°F	249°F	5	81% <
3rd	89°F	264°F	84°F	249°F	5	81%

SIX 5 MAXIMUM AND MINIMUM

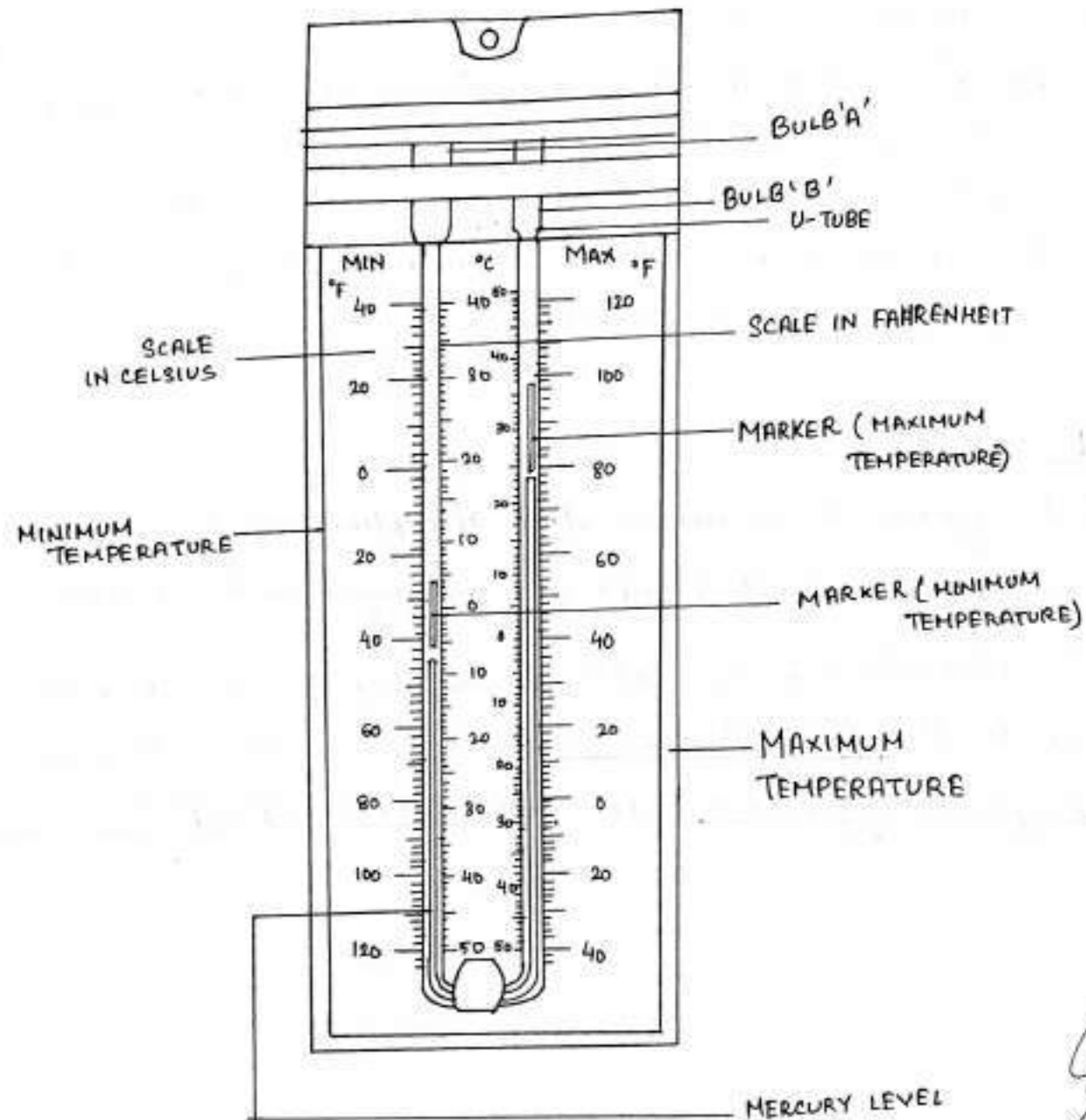


TABLE RECORD OF MAXIMUM TEMPERATURE AND MINIMUM TEMPERATURE DONE BY SIX'S MAXIMUM AND MINIMUM THERMOMETER.

PLACE - DEPARTMENT - GEOGRAPHY, BIDHANCHANDRA COLLEGE

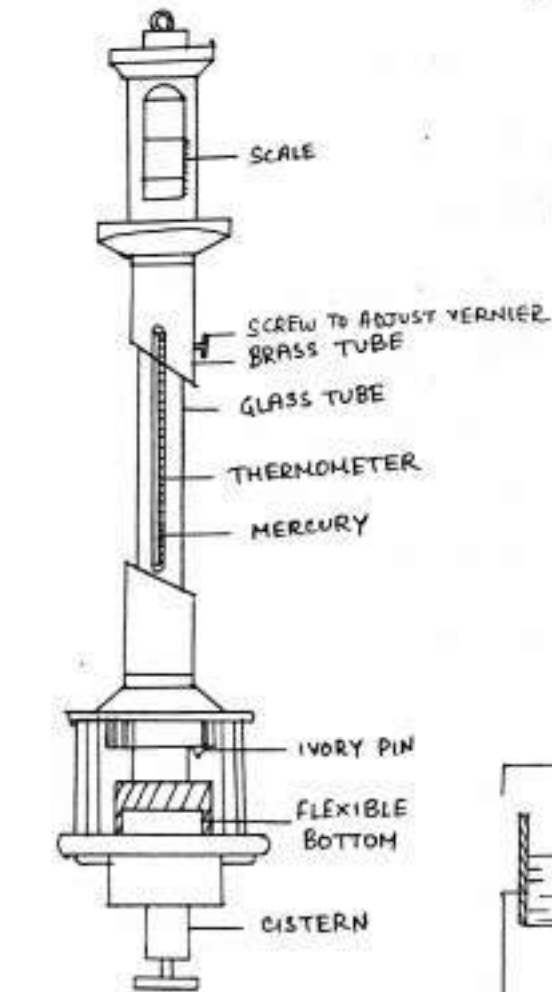
DATE - 23-9-2022

INSTRUMENT NUMBER -

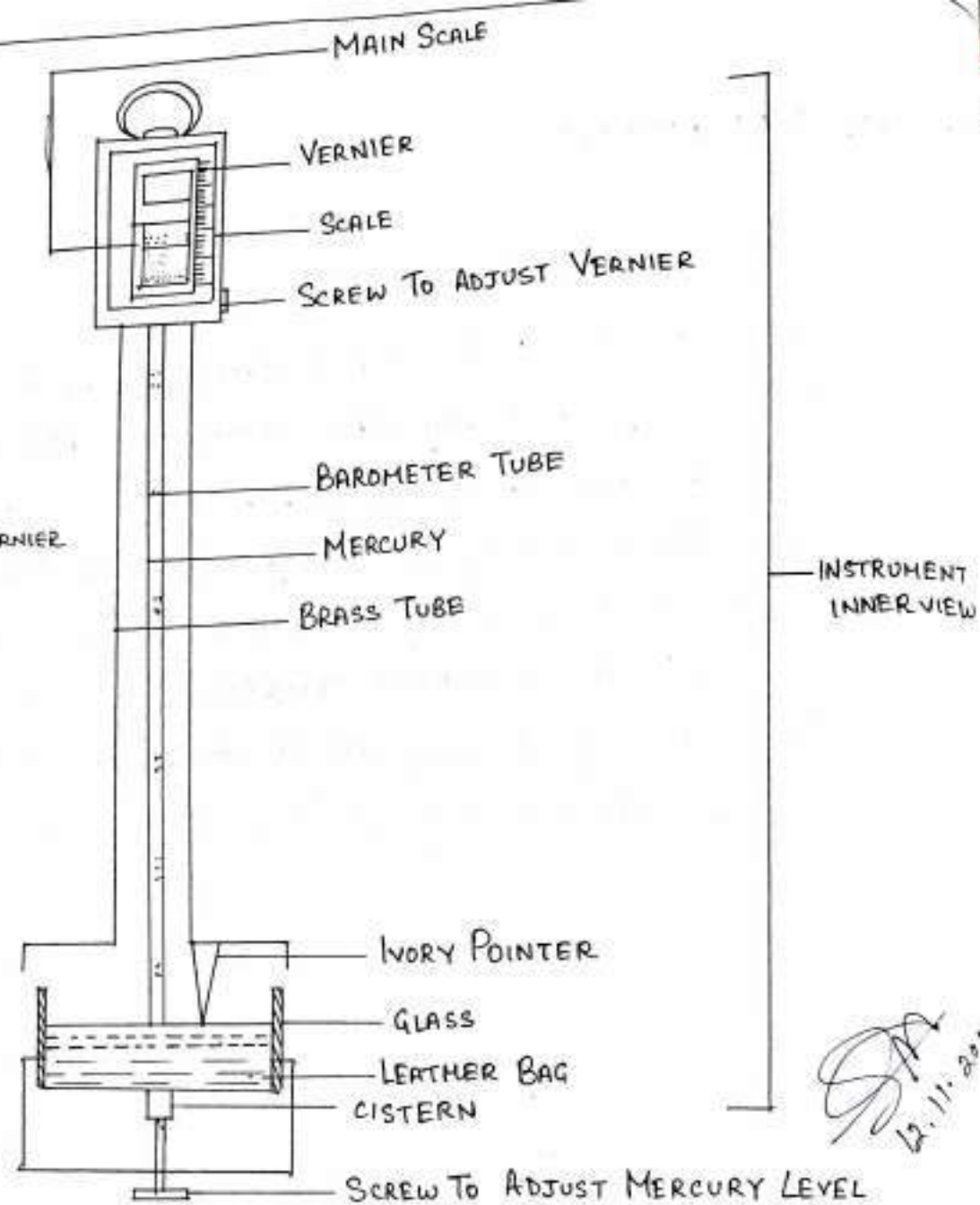
TIME - 01:03 p.m.

<u>NUMBER OF READING</u>	<u>MAXIMUM TEMPERATURE</u>		<u>MINIMUM TEMPERATURE</u>		<u>CURRENT TEMPERATURE</u>		<u>RANGE OF TEMPERATURE</u>	
	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$
1st	31 $^{\circ}\text{C}$	87.8 $^{\circ}\text{F}$	30 $^{\circ}\text{C}$	86 $^{\circ}\text{F}$	29 $^{\circ}\text{C}$	84.2 $^{\circ}\text{F}$	1 $^{\circ}\text{C}$	1.8 $^{\circ}\text{F}$
2nd	32 $^{\circ}\text{C}$	90 $^{\circ}\text{F}$	31 $^{\circ}\text{C}$	87.8 $^{\circ}\text{F}$	29 $^{\circ}\text{C}$	84.2 $^{\circ}\text{F}$	1 $^{\circ}\text{C}$	2.2 $^{\circ}\text{F}$
3rd	33 $^{\circ}\text{C}$	91.4 $^{\circ}\text{F}$	32 $^{\circ}\text{C}$	90 $^{\circ}\text{F}$	29 $^{\circ}\text{C}$	84.2 $^{\circ}\text{F}$	1 $^{\circ}\text{C}$	1.4 $^{\circ}\text{F}$
<u>MEAN TEMPERATURE</u>	32 $^{\circ}\text{C}$	89.7 $^{\circ}\text{F}$	31 $^{\circ}\text{C}$	87.9 $^{\circ}\text{F}$	29 $^{\circ}\text{C}$	84.2 $^{\circ}\text{F}$	1 $^{\circ}\text{C}$	1.8 $^{\circ}\text{F}$

FORTIN'S BAROMETER



INSTRUMENT OUTER VIEW



DETERMINATION OF WIND PRESSURE BY BAROMETER (FORTIN)

PLACE - DEPARTMENT - GEOGRAPHY, BIDHAN CHANDRA COLLEGE

DATE - 14-09-2022

INSTRUMENT NUMBER

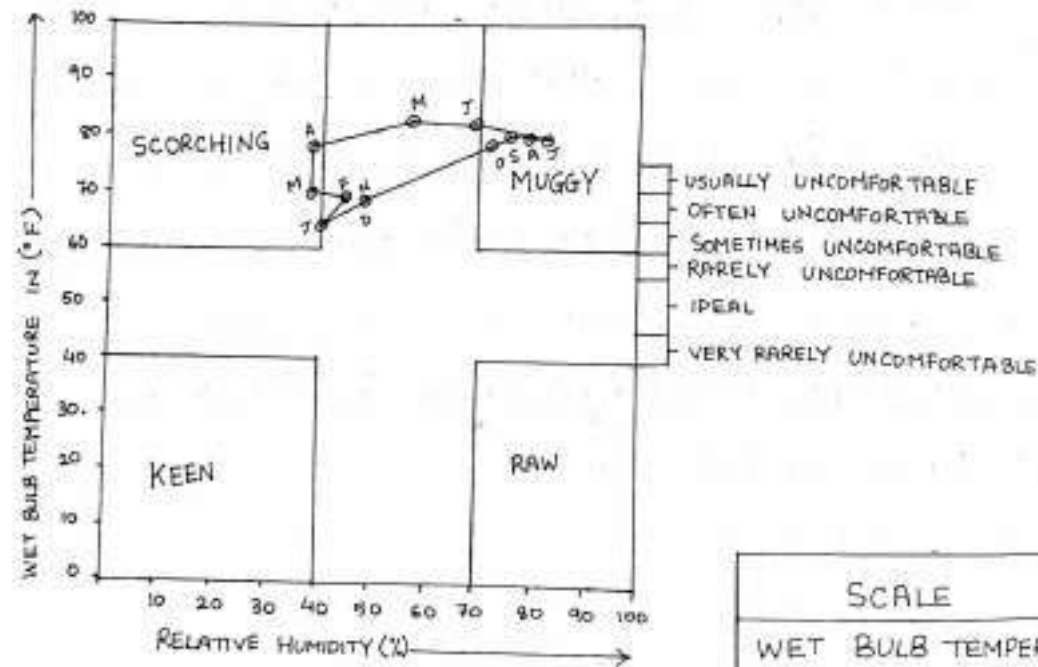
TIME - 11:45 a.m.

NUMBER OF READING	MAIN SCALE READING	VERNIER CONSTANT (cm)	NO. OF VERNIER SCALE DIVISION	VERNIER SCALE READING (cm)	FINAL READING (cm)	CO. MEAN FINAL READING (cm)	CONVERSION	WIND PRESSURE (Hg)	REMARK
1st	76.0	0.005	7	0.035	76.035	76.040	76 cm =	76 cm	25°C
2nd	76.0	0.005	8	0.040	76.040	76.040	1013.25	1013.25	25°C
3rd	76.0	0.005	9	0.045	76.045	76.040	mb	mb	25°C

CLIMOGRAPH

BY- GRIFFITH TAYLOR

SHOWING RELATION BETWEEN RELATIVE HUMIDITY
AND WET BULB TEMPERATURE (°F)



SCALE

WET BULB TEMPERATURE
(°F), 1cm = 10°F

RELATIVE HUMIDITY (%)
1cm = 10%

19.10.22

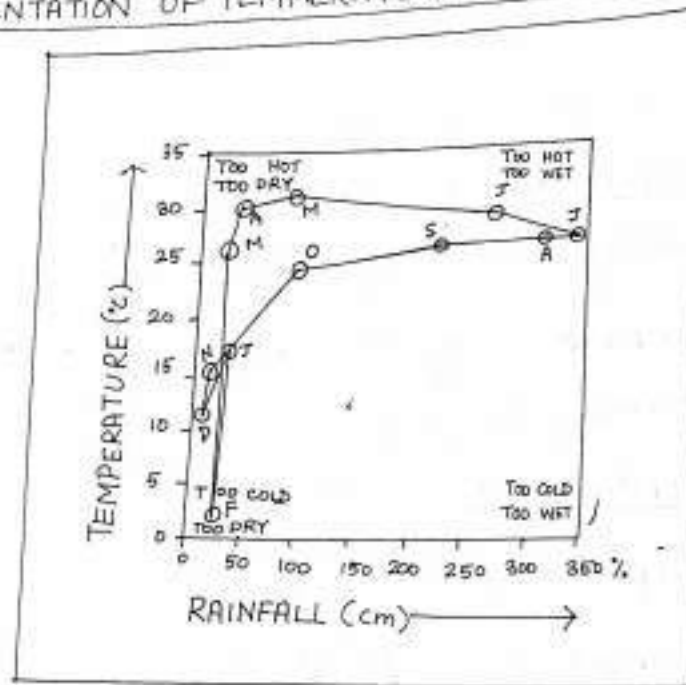
CLIMOGRAPH

TABLE REPRESENTATION OF WET BULB TEMPERATURE (°F) AND RELATIVE HUMIDITY (%)

MONTH	WET BULB TEMPERATURE (°F)	SCALE-1cm = 10°F	RELATIVE HUMIDITY PERCENTAGE (%)	SCALE-1cm = 10%
JANUARY	64.8	6.4	40	4.0
FEBRUARY	68.5	6.8	44	4.4
MARCH	70.5	7.0	38	3.8
APRIL	78.1	7.8	38	3.8
MAY	82.9	8.2	57	5.7
JUNE	82.3	8.2	69	6.9
JULY	80.8	8.0	81	8.1
AUGUST	80.7	8.0	79	7.9
SEPTEMBER	80.0	8.0	75	7.5
OCTOBER	78.0	7.8	72	7.2
NOVEMBER	68.9	6.8	48	4.8
DECEMBER	68.4	6.8	48	4.8

HYTHERGRAPH - GRIFFITH, TAYLOR

REPRESENTATION OF TEMPERATURE CONDITION OF PURULIA DISTRICT, (AVERAGE)



SCALE
TEMPERATURE (°C), 1cm = 5°C
RAINFALL, 1cm = 50 cm

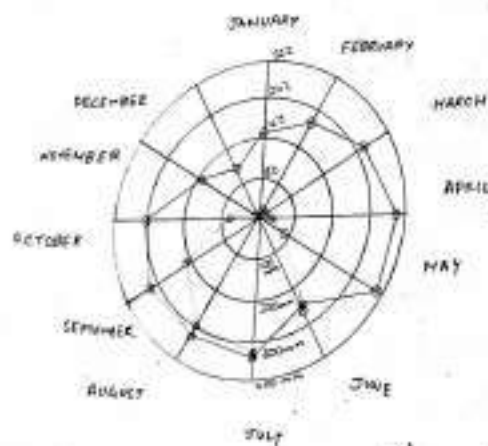
[Signature]
12.11.2022

HYTHERGRAPH - GRIFFITH TAYLOR

TABLE FOR REPRESENTATION OF TEMPERATURE CONDITION OF PURULLA DISTRICT (AVERAGE TEMPERATURE)

MONTH	TEMPERATURE (°C)	SCALE - 1 cm = 5°C	RAINFALL (mm)	SCALE - 1 cm = 50 mm
JANUARY	17.3	3.46	13	0.52
FEBRUARY	21.3	0.38	20	0.40
MARCH	26.2	5.24	21	0.42
APRIL	30.4	6.08	30	0.60
MAY	31	6.20	83	1.66
JUNE	29.6	5.92	262	5.24
JULY	27.3	5.46	341	6.82
AUGUST	27	5.40	303	6.06
SEPTEMBER	26.6	5.32	224	4.48
OCTOBER	24.9	4.98	88	1.76
NOVEMBER	15.9	3.18	11	0.22
DECEMBER	11.8	2.36	10	0.20

STAR DIAGRAM TEMPERATURE AND RAINFALL



SCALE
TEMPERATURE (°C) - 1cm = 3°C
RAINFALL (mm) - 1cm = 100 mm

Examination
Date: 30.11.20

STAR DIAGRAM TABLE REPRESENTING TEMPERATURE AND RAINFALL

MONTHS	TEMPERATURE °C	SCALE - 1cm = 3°C	RAINFALL mm	SCALE - 1cm = 100 mm
JANUARY	17.3	2.16	13	0.13
FEBRUARY	21.3	2.66	20	0.20
MARCH	26.2	3.27	21	0.21
APRIL	30.4	3.80	30	0.30
MAY	31	3.87	83	0.83
JUNE	20.6	2.57	262	2.62
JULY	24.3	3.41	341	3.41
AUGUST	24	3.37	303	3.03
SEPTEMBER	26.6	3.32	224	2.24
OCTOBER	24.9	3.11	88	0.88
NOVEMBER	15.9	1.98	11	0.11
DECEMBER	11.8	1.47	10	0.10

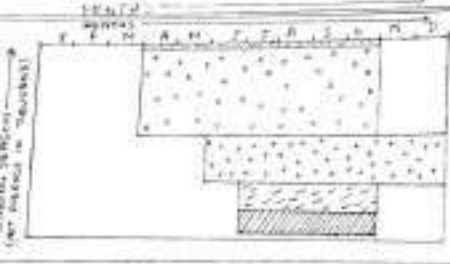
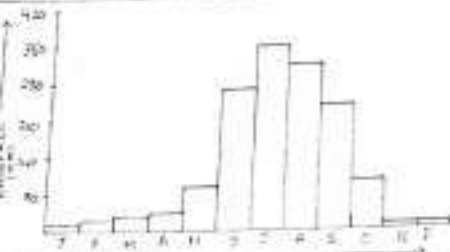
ERGOGRAPH

REPRESENTING DIFFERENT WEATHER ELEMENTS AND PRODUCTION OF CROPS



LEGEND
TEMPERATURE (°C)
HUMIDITY (%)

LEGEND
RAINFALL (mm)



LEGEND (CROPS)
RICE
WHEAT
COTTON
JOWAR
SUGARCANE

SCALE
TEMPERATURE, 1cm = 2°C
HUMIDITY, 1cm = 20%
RAINFALL, 1cm = 30mm

ERGOGRAPH

TABLE REPRESENTING DIFFERENT WEATHER ELEMENTS AND PRODUCTION OF CROPS

MONTHS	TEMPERATURE °C	SCALE - 1cm = 2°C	RAINFALL mm	SCALE - 1cm = 30mm	HUMIDITY PERCENTAGE	SCALE - 1cm = 20%
JANUARY	17.8	2.47	13	0.12	60	3
FEBRUARY	21.3	3.04	20	0.28	52	2.60
MARCH	26.3	3.25	21	0.30	40	2
APRIL	30.4	4.34	20	0.42	39	1.95
MAY	31	4.42	83	1.18	55	2.75
JUNE	29.6	4.22	262	3.74	71	3.55
JULY	27.9	3.96	341	4.87	84	4.20
AUGUST	27	3.85	303	4.32	85	4.25
SEPTEMBER	26.6	3.80	224	3.10	85	4.25
OCTOBER	24.9	3.55	88	1.25	77	3.85
NOVEMBER	15.9	2.27	11	0.15	65	3.25
DECEMBER	11.8	1.68	10	0.14	62	3.10

ERGOGGRAPH

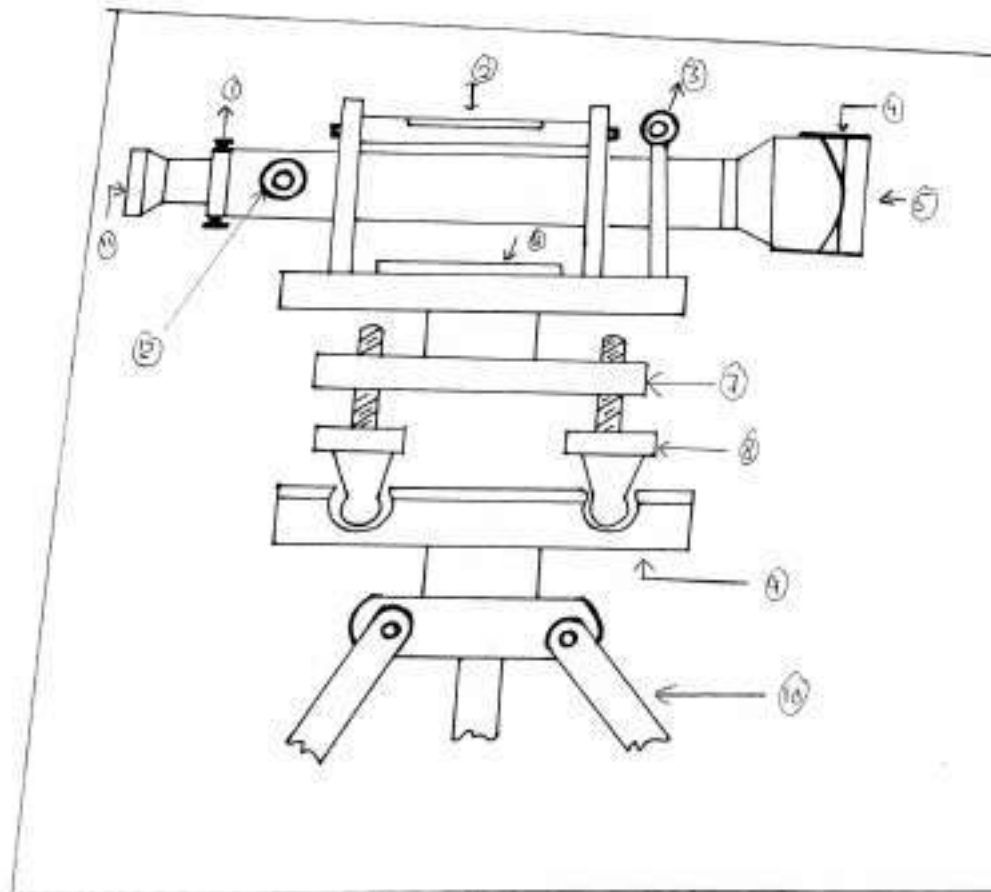
TABLE FOR PRODUCTION OF CROPS.

CROP	GROWING SEASON	NET ACERAGE IN THOUSAND	SCALE IN cm.
RICE	MAY-OCTOBER	100	0.2 cm
WHEAT	OCTOBER-APRIL	1100	2.2 cm
COTTON	JUNE-DECEMBER	600	1.2 cm
JOWAR	JULY-OCTOBER	350	0.7 cm
BAJRA	JULY-OCTOBER	300	0.6 cm

DUMPY LEVEL

Dumpy level is commonly used leveling instrument to locate the point in same horizontal plane. It is also called as automatic level or builder's level. Elevations of different points and distance between the points of same elevation can be determined by dumpy level.

DUMPY LEVEL



PARTS NAME	
① Dia. Phragm	
② Longitudinal Bubble	
③ cross Bubble	
④ Shade	
⑤ Object glass	
⑥ Circular compass	
⑦ Tribrach	
⑧ Foot screw	
⑨ Leveling head	
⑩ Tripod stand	
⑪ Eye Piece	
⑫ focussing screw	

12/11/22

FIELD BOOK

Determination of Reduced level by Dumpy level

Time:

Date:

Place - Bidhan Chandra College campus
Instrument no -

Station	Distance	Staff Reading			Rise	fall	RL	Remarks	Difference (scale - 1cm = 25 station)
		B.S	I.S	F.S					
A	0	1.420					111.2	BM at A 377	0
B	6		1.465			0.045	110.95		3
C	12		1.500			0.035	110.92		6
D	18		1.490		0.01		110.93		9
E	24			1.535		0.045	110.85		12

Arithmetic check

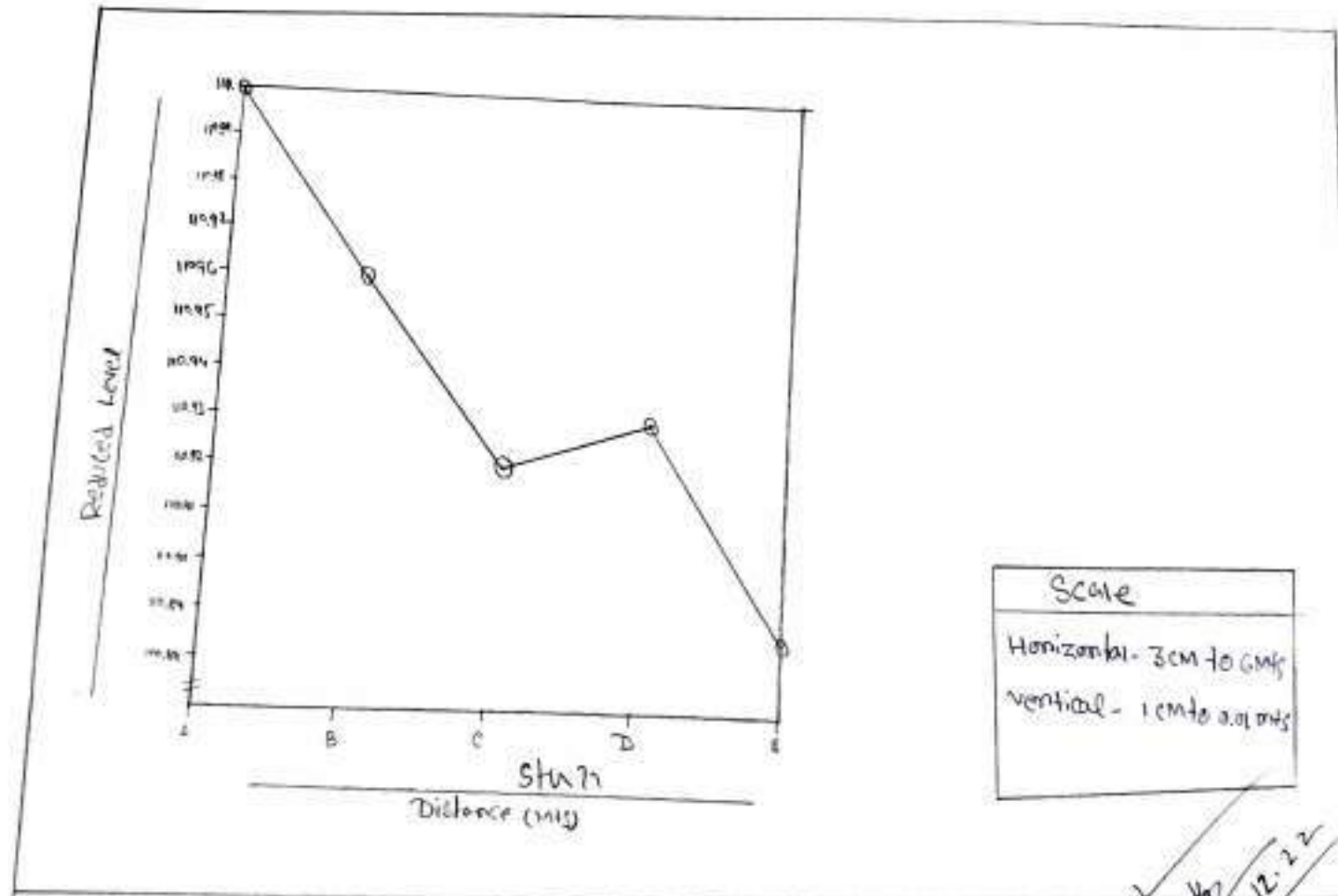
$$\Sigma B.S - \Sigma F.S = \text{Last R.L} - \text{First R.L}$$

$$\Rightarrow 1.420 - 1.535 = 110.85 - 111$$

$$\Rightarrow 0.115 = 0.115$$

DUMPY LEVEL

Determination of Reduced level by Dumpy level



FIELD BOOK

DETERMINATION OF REDUCED LEVEL BY DUMPY LEVEL

Time :

SURVEYER :

Date :

INSTRUMENT NO. :

Place: Bidhan Chandra College Campus

Station	Distance	Staff Reading			Rise	Fall	R.L	REMARK
		B.S	I.S	F.S				
A	0	1.430					111	BM at A 111
B	3		1.350		0.08		111.08	
C	6		0.750		0.6		111.68	
D	9		1.280			0.5	111.18	
E	12		0.350		0.92		112.1	
F	15		1.200			0.87	111.23	
G	18		1.315			0.115	111.12	
H	21		1.030		0.285		111.4	
I	24		0.100		0.93		111.33	
J	27			0.470		0.37	111.96	

$$\Sigma BS - \Sigma FS = \text{Last R.L} - \text{First R.L}$$

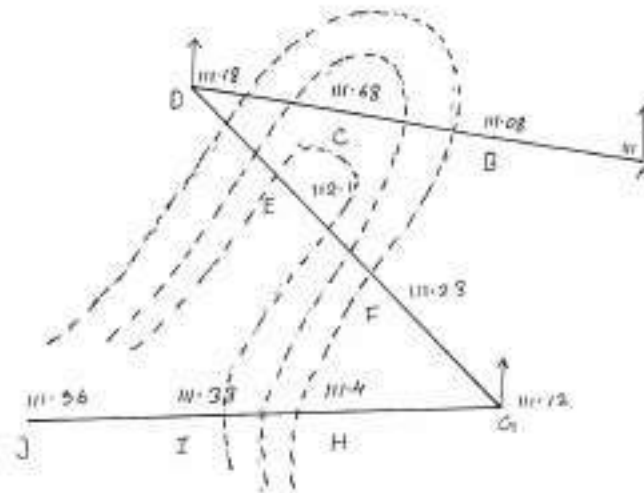
$$\Rightarrow 1.430 - 0.470 = 111.96 - 111$$

$$\Rightarrow 0.96 = 0.96$$

Line	Bearing(W.C)
AD	81°30'
DG	134'
GD	267°30'

DUMPY LEVEL

Determination of reduced level by Dumpy level



Scale



Scale

3 cm to 1 station

12/12/22

PRISMATIC COMPASS

A Prismatic compass is a navigation and surveying instrument which is extensively used to find out the bearing of the traversing and include angles between them, way points and direction.

FIELD BOOK

Field work is done by prismatic compass and step

date -

Time -

Place -

Surveyer -

Instrument No -

Table-1

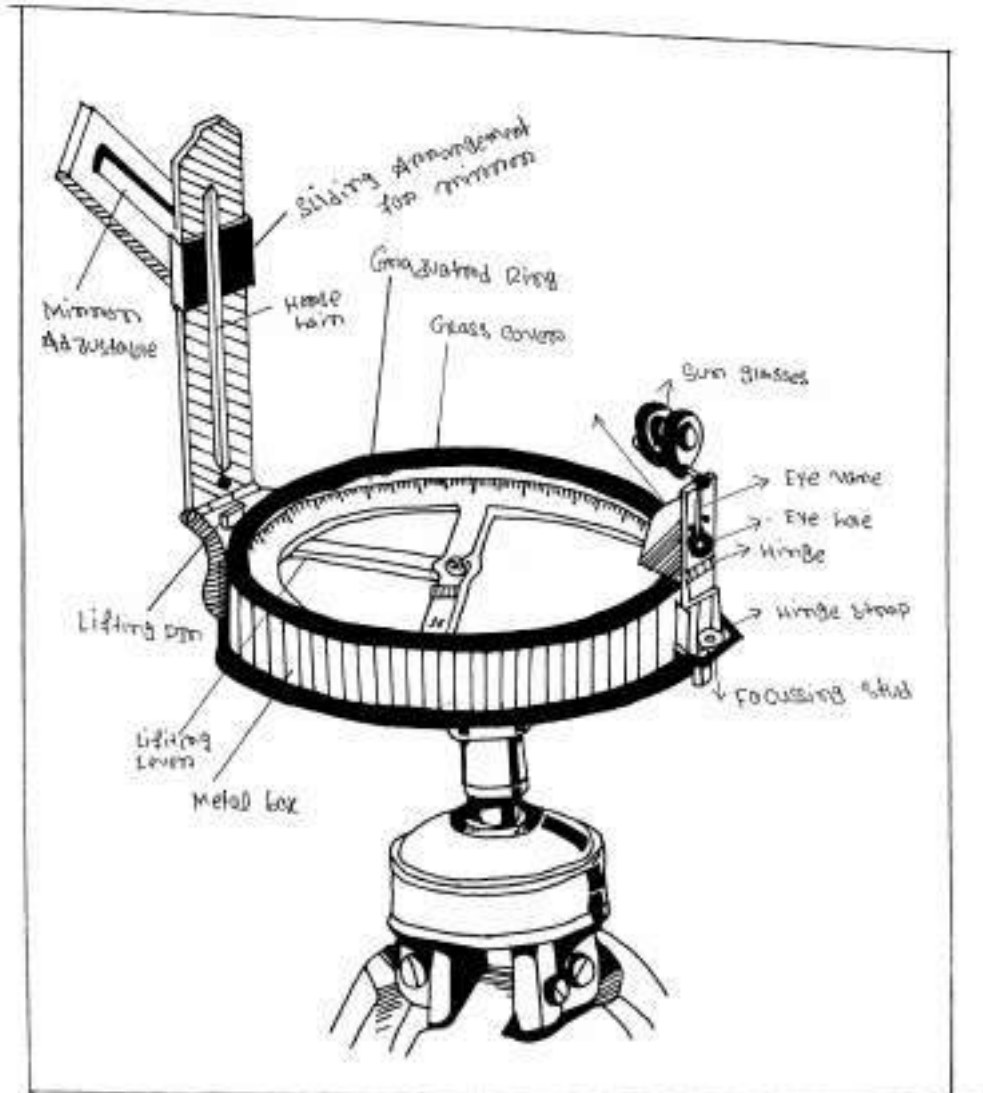
Station	Line	Distance in Mts	Observed Bearing		Difference
P	PQ	12	71°51'	260°15'	179°
Q	QR	10	131°0'	313°0'	182°
R	RS	13	231°45'	60°45'	177°
S	SP	11	315°	134°	181°

Table-2

Calculation of traversing

Station	Line	Distance		Observed Bearing		Difference	Error	Error 2	Connected Bearing		Remarks
		Mts	Scale Mts	F.B	B.B				F.B	B.B	
P	PQ	12	12	71°15'	260°15'	179°	-1°	-0°30'	70°45'	260°45'	
Q	QR	10	10	131°0'	313°0'	182°	2°	1°	132°	312°0'	
R	RS	13	13	231°45'	60°45'	177°	-3°	-1°30'	234°15'	69°15'	
S	SP	11	11	315°	134°	181°	1°	0°30'	314°30'	134°30'	

PRISMATIC COMPASS

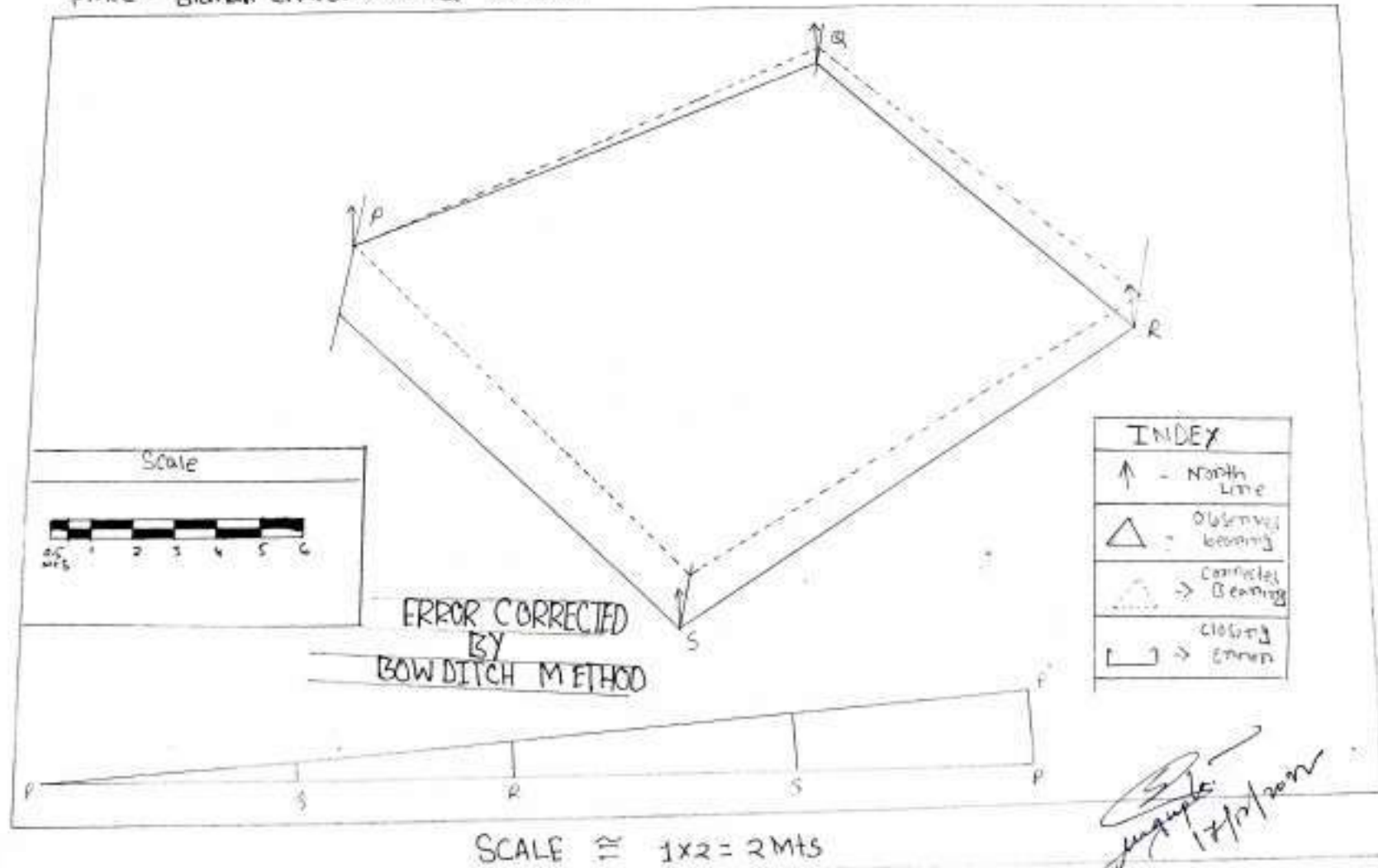


Shreyas B.
14/12/2020

TRAVERSING
BY
PRISMATIC COMPASS

Date :
Time :
Place - Bidhan chandra college campus

Instrument No -



TRAVERSING

A traverse is a connected lines whose lengths and directions are to be measured and the process of surveying to find such measurements is known as traversing. In general, chains are used to measure length and compass or theodolite are used to measure the direction of traverse lines.

TYPES OF TRAVERSING:

Traversing may be of two types. Namely

(i) OPEN TRAVERSE:

A traverse is said to be open traverse when the traverse starts at one point and terminates at another point as shown in the figure.

(ii) CLOSED TRAVERSE:

A traverse is said to be closed traverse when the traverse forms a closed circuit as shown in the figure.

METHODS OF TRAVERSING

The traversing is performed by four different methods and these methods are classified according to the survey instrument used. The methods are as follows.

- (1) Chain traversing
- (2) Compass traversing
- (3) Theodolite traversing
- (4) Plane table traversing

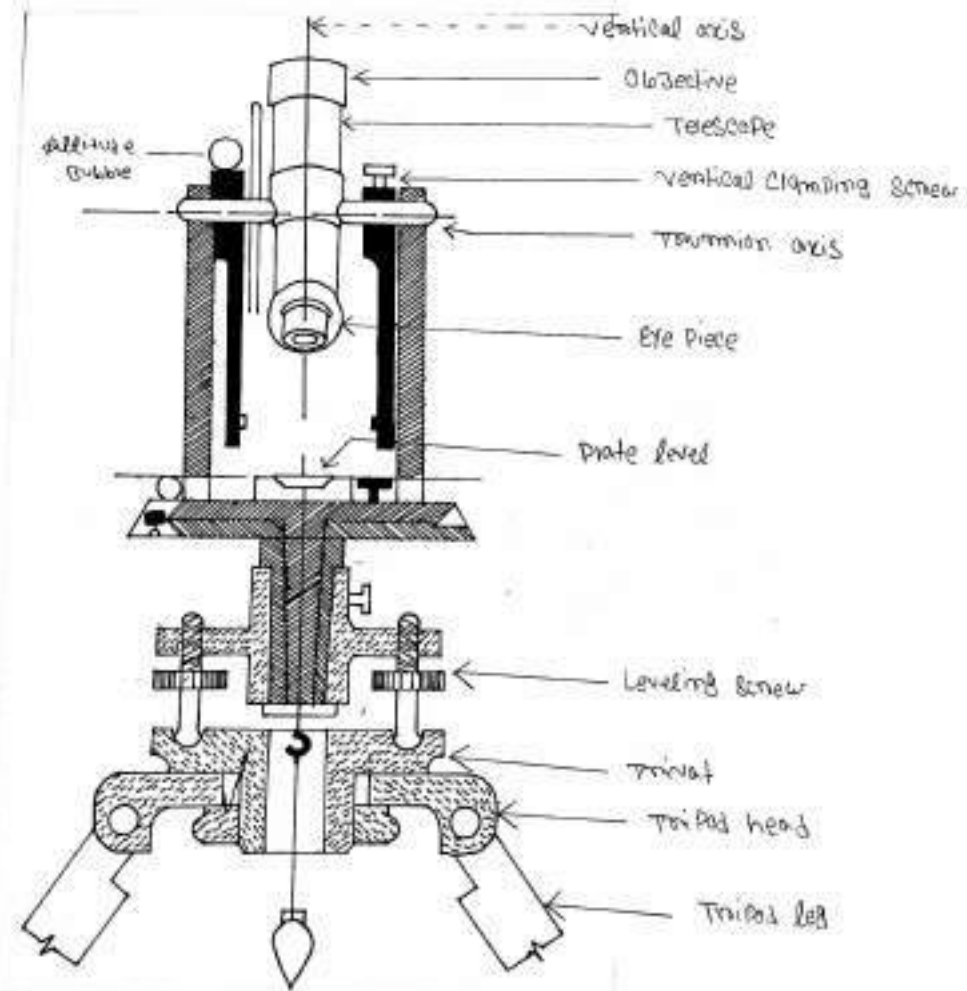
IMPORTANCE OF TRAVERSING:

It allows geodetic triangulation for sub-closure of all known closed points. Closed traversing is useful in marking the boundaries of wood or lakes. Construction and civil engineers utilize this practice for preliminary surveys of designated area.

THEODOLITE

A theodolite is a precision optical instrument for measuring optical angles between designated visible points in the horizontal and vertical planes. The traditional use has been for land surveying, but it is also used extensively for building and infrastructure construction, and some specialized applications such as meteorology and Rocket launching.

THEODOLITE

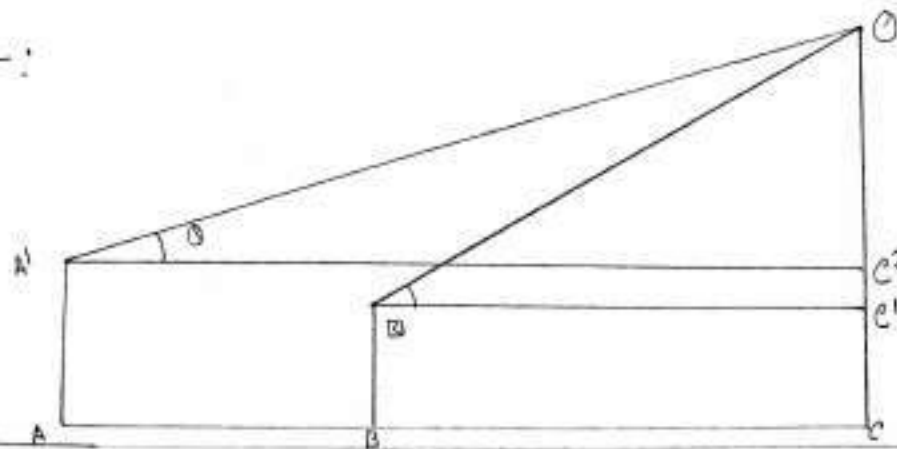


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14.12.22

THEODOLITE DETERMINATION OF HEIGHT BY TRANSIT THEODOLITE

Instrument no.	Face		Vertical circle Reading	Mean angle	Grand Mean Angle	
A	Left	ve	21°46'	21°45'50"	21°44'20"	A station height = 1.5 mts B station height = 1.4 mts A to B station Distance = 11.55 mts
		VD	21°45'50"			
	Right	ve	21°43'40"	21°42'30"		
		VD	21°40'			
B	Left	ve	24°45'	24°44'30"	24°42'30"	
		VD	24°40'			
	Right	ve	24°45'	24°43'30"		
		VD	24°42'			

ROUGH SKETCH :



NOTATION:

$$AC = A'C^2 = \text{Base}$$

$$AB = 11.55 \text{ mts}$$

$$BC = B'C' = (\text{Base} - x)$$

$$AA' = cc^2$$

$$BB' = cc^1$$

$$\angle OA'C^2 = \alpha$$

$$\angle OB'C = \beta$$

$$c^1c^2 = (cc^2 - cc^1) = (1.5 - 1.4) \text{ mts}$$

$$= 0.1 \text{ mts} = hd$$

- From $\Delta OA'C^2$ we can get

$$\frac{A'C^2}{oc^2} = \cot \alpha \quad [A'C^2 = \text{Base}]$$

on $\text{Base} = \cot \alpha \times oc^2$ ①

- From another $\Delta OB'C'$, we can get

$$\frac{B'C'}{oc^2} = \cot \beta \quad [B'C' = \text{Base} - x]$$

on $\text{Base} - x = \cot \beta \times oc^2$ ②

Subtracting of Equation No ② from ①

$$\text{Base} - (\text{Base} - x) = (\cot \alpha \times oc^2) - (\cot \beta \times oc^2)$$

$$\text{on, } \text{Base} - \text{Base} + x = \cot \alpha \times oc^2 - \cot \beta \times oc^2$$

$$\text{on, } x = oc^2 (\cot \alpha - \cot \beta) - \cot \beta \times hd$$

$$\text{on, } oc^2 (\cot \alpha - \cot \beta) - \cot \beta \times hd = x$$

$$\text{on, } oc^2 = \frac{x + \cot \beta \times hd}{\cot \alpha - \cot \beta}$$

$$\text{on, } oc^2 = \frac{11.55 + \cot 24^\circ 42' 30'' \times 0.1}{\cot 29^\circ 44' 20'' - \cot 24^\circ 42' 30''}$$

$$\text{on, } oc^2 = \frac{11.77}{0.33}$$

$$\text{on, } oc^2 = 35.67 \text{ mts}$$

$$\begin{aligned}\text{Total } OC &= (OC^2 + CE^2) \\ &= (35.67 + 1.8) = 37.17 \text{ m/s}\end{aligned}$$

From the $\triangle OA'C^2$ we can get, $\frac{AC^2}{OC^2} = \cot^2 \theta$

$$\text{or } AC^2 = \cot^2 21^\circ 44' 20'' \times 35.67$$

$$\text{or } AC^2 = 89.46 \text{ m/s}$$

● Taken scale 1 cm to 5 m/s

$$AC = A'C^2 = 17.892 \text{ cm}$$

$$BC = B'C^1 = ~~10.758~~ 15.662 \text{ cm}$$

$$OC = 7.434 \text{ cm}$$

$$AA' = 0.3 \text{ cm}$$

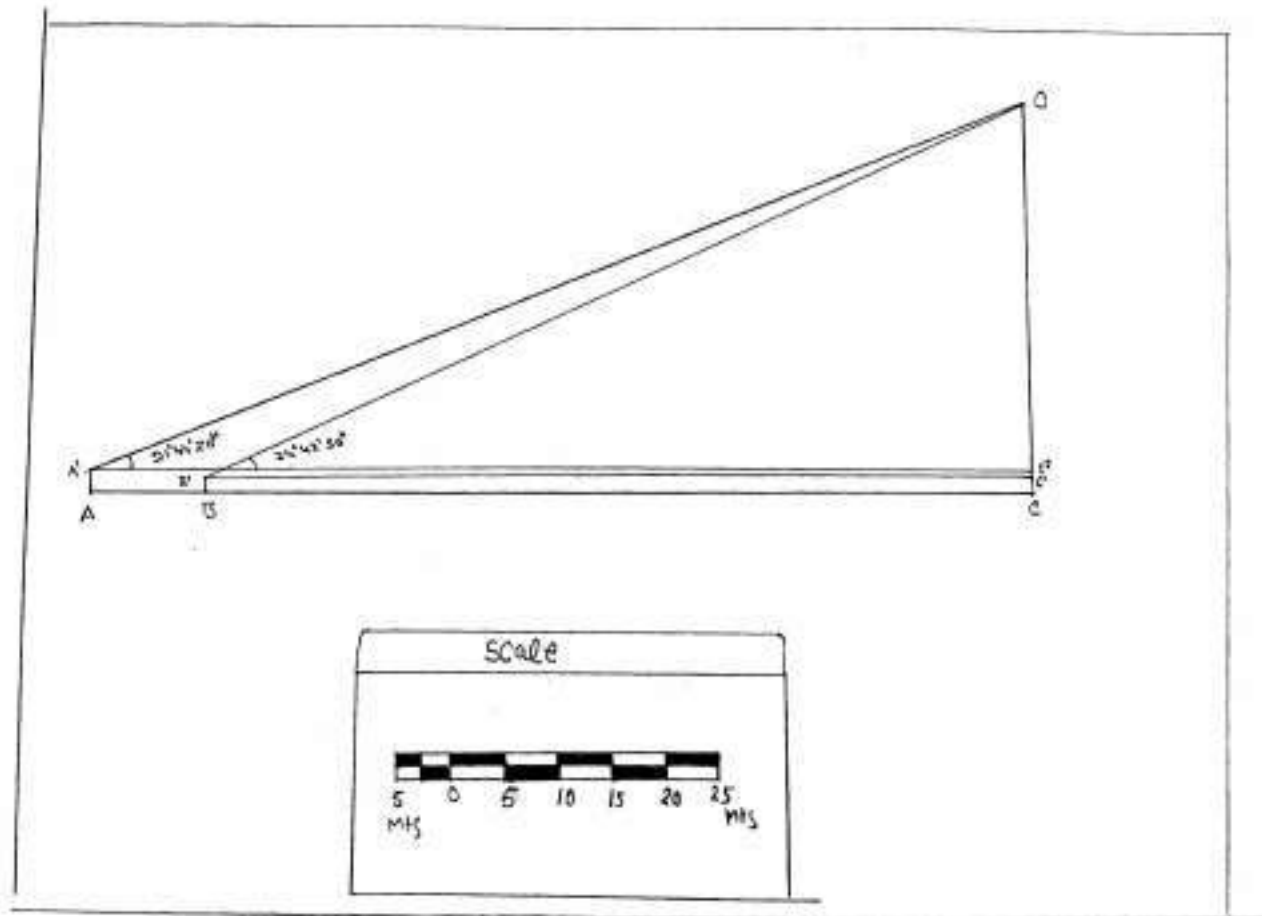
$$BB' = 0.728 \text{ cm}$$

$$C^1C^2 = 0.02 \text{ cm}$$

$$AB = 2.23 \text{ cm}$$

THEODOLITE

Determination of height and distance by transit theodolite



[Signature]
14/12/22

FIELD BOOK

Determination of height BY Transit Theodolite

Date :

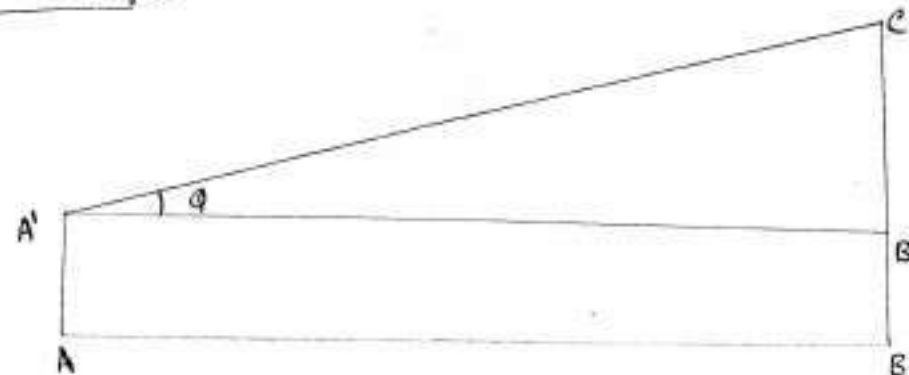
Time :

Place :

Instrument no. :

Station	Face		Vertical circle Reading	Mean angle	Ground mean angle	Remarks
A	Left	VC	$13^{\circ}45'$	13°	$13^{\circ}42'45''$	Instrument height of A 1.48 mts
		VD	$13^{\circ}42'$	$43'30''$		
	Right	VC	$13^{\circ}44'$	13°		
		VD	$13^{\circ}40'$	$42'$		

Rough sketch :-



• Stadia Method

Upper Stadia reading = 1.45 mts

Lower Stadia reading = 1.35 mts

$$\text{Horizontal Method} = (\text{Upper Stadia} - \text{Lower Stadia}) \times 100$$

$$= (1.45 - 1.35) \times 100$$

$$= 0.1 \times 100 = 10 \text{ mts}$$

From $\Delta A'B'C$ we can get

$$\frac{B'C}{A'B'} = \tan \theta$$

$$\therefore B'C = \tan \theta \times A'B'$$

$$\text{or } B'C = \tan 13^\circ 42' 45'' \times 10 \text{ mts}$$

$$B'C = 2.44 \text{ mts}$$

$$\begin{aligned} \text{total height of } BC &= (B'C + BB') \\ &= (2.44 + 1.48) \\ &= 3.92 \text{ mts} \end{aligned}$$

Taken scale, 1 cm to 1 meters

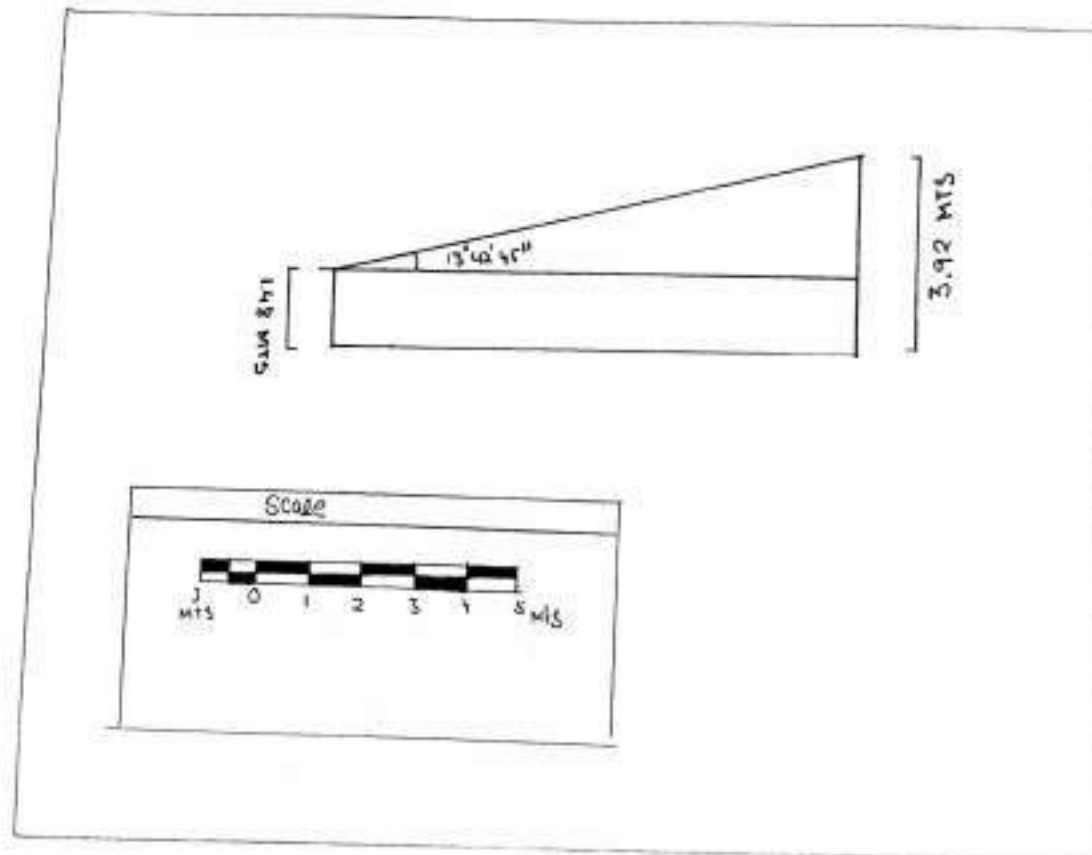
$$AB = 10 \text{ cm} \quad B'C = 3.9 \text{ cm}$$

$$A'B' = 10 \text{ cm}$$

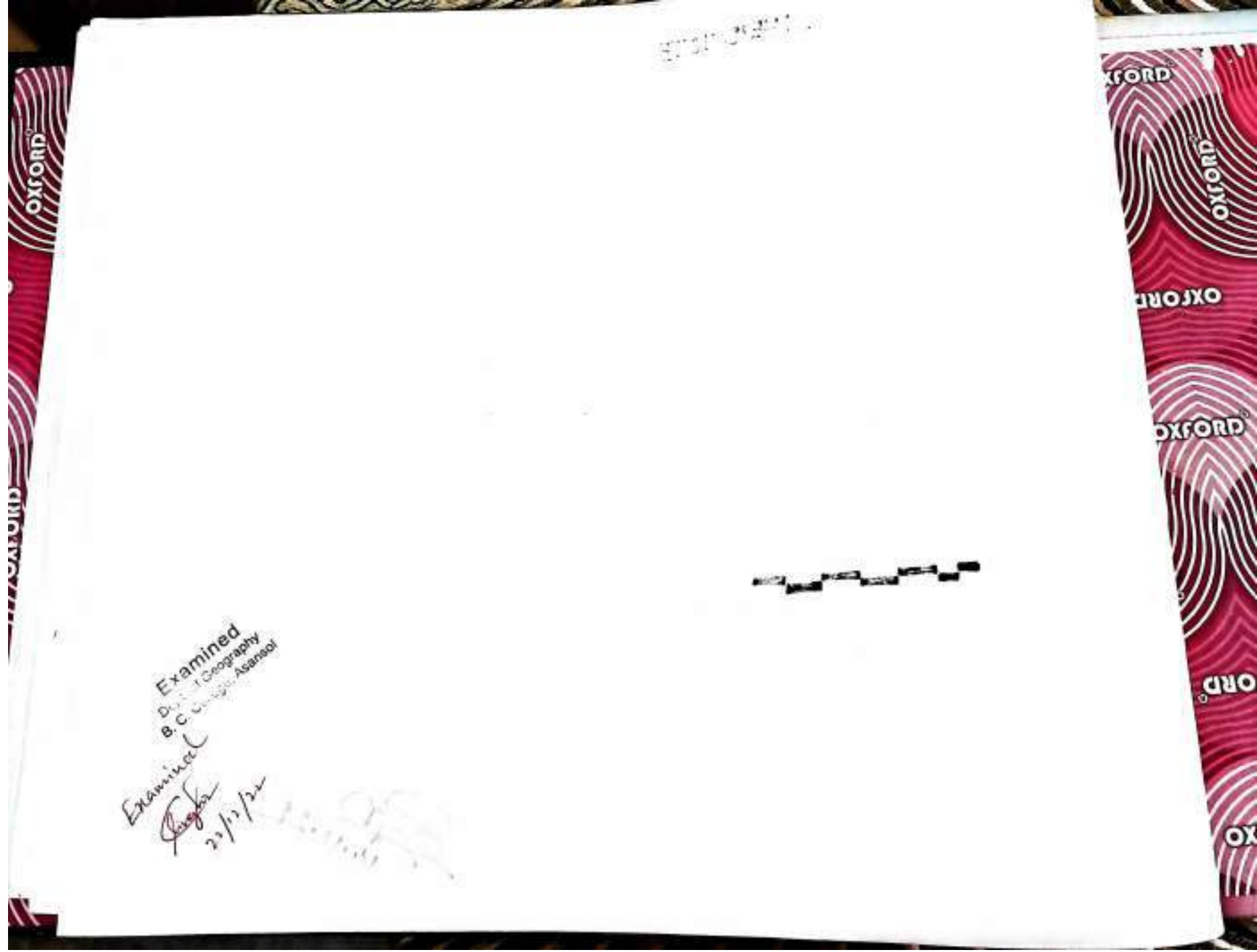
$$BC = 3.9 \text{ cm}$$

THEODOLITE

Determination of height and Distance by Transit Theodolite



[Signature]
14.12.22



Examined
D. J. T. Geography
B. C. Geography Asanoel
Examined
[Signature]
20/12/20

BBA



BIDHAN CHANDRA COLLEGE



**PROJECT REPORT ON WORKING CAPITAL
MANAGEMENT**

OF

REPLISOFT TECHNOLOGIES PVT. LTD.

COMPLETED BY

ISHIKA SARKAR

ROLL :103200512800 NO:7022

REGISTRATION NO: KNU20103003232

6TH SEMESTER

BBA (H)

DECLARATION

I Do Here By Declare That This Project Report On Replisoft Technologies Pvt. Ltd., Ghaziabad Is An Original Work Done By Me Under The Guidance Of Mr. Sanjoy Maity, Founder & Ceo. I Have Tried To Present This Report With Almost Clarity And An Authentic One As Well.

The Project Report Is A Joint Property Of Bidhan Chandra College, Asansol And Replisoft Technologies, Ghaziabad. The Project Work Has Been Undertaken As A Part Assignment Of My Full Time Bachelors Of Business Administration From Bidhan Chandra College, Asansol.

Ishika Sarkar

Bba (2020-2023)

B. C. College (Asansol)

ACKNOWLEDGEMENT

This Research Was Made Possible As Per The Requirement Of The Bba Course Under KNU University. Many Individuals Took Interest And Were Supportive Of My Efforts .In Fact Many Have Given Me Generously Their Time And It Is Not Possible To Mention All Of Them And Their Act Of Goodness. I Take The Opportunity To Place And Record My Deep Sense Of Gratitude To All Who Have Helped Me In Completion Of My Study.

My Sincere Thanks To Mr. Sanjoy Maity (Founder & Ceo), At Replisoft Technologies, Ghaziabad. Their Valuable Support And Help During My Visit For My Data Collection.

I Am Deeply Indebted To My Mentor And Guide Prof. Kajal Goswami, Prof. Santanu Mazumdar, Prof. Pratap Shankar Das, Prof. Faisal Hamid For Their Inspirstion And Guidance In Writing This Book.

I Would Be Failing In My Duties If I Don't Express My Sincere Gratitude To My Parents For Their Constant Support And Guidance. I Also Humbly Thank My Friends And All The Professors For Their Generous Participation In Data Collection Process.

PREFACE

Project Study Has Enriched Me To Had The Opportunity Under The Replisoft Technologies Through A Period Of 22 Days From 25.01.2023 -15.02.2023 Help Me To Acquiring The Industrial Financial Strategy On The Basis Of Knowledge I Have Enclose A Small Part Of Financial Management That Is Working Capital Management And Its Financial Analysis With Help Of Ratio Analysis.

Cost Effectiveness Is The Buzz Word Today. So, Effectively Use Of Working Capital Is Important From The Point Of View Of Both Profitability And Liquidity.

For Any Ongoing Project Or Any Ongoing Organization Working Capital Management Is Highly Crucial For Its Meaningful Survival And Growth Of The Organization. The Management Of Current Assets, However, Differs In Three Important Ways:

First, In Managing Current Assets, Time Is A Very Important Factor.

Second, The Large Holding Of Current Assets, Especially Cash, Strengths The Firms Liquidity Position (And Reduces Riskness), But Also Reduce The Overall Profitability. Thus, A Risk – Return Tradeoff Is Involved In Holding Current Assets.

Third Levels Of Current Assets Depend Upon Expected Sales, But It Is Only Current Assets Which Can Be Adjusted With Sales Fluctuations In The Short Run. Thus, The Firm Has A Greater Degree Of Flexibility In Managing Current Assets.

An Effort Has Been Made In The Present Study Titled “Working Capital Management” With Respect To Replisoft Technologies, Ghaziabad To Understand The Different Financial Implication And To Make A Detailed And In Depth Study.

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- 2. ACKNOWLEDGEMENT**
- 3. PREFACE**
- 4. THEORETICAL INTRODUCTION OF FINANCIAL MANAGEMENT**
- 5. THEORETICAL INTRODUCTION OF WORKING CAPITAL MANAGEMENT**
- 6. CONCEPTS OF WORKING CAPITAL**
- 7. SCOPE OF THE STUDY**
- 8. PURPOSE OF THE STUDY**
- 9. METHODOLOGY USED**
- 10. LIMITATION OF THE STUDY**
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 - b. WHAT THEY DO?**
 - c. HISTORY OF THE COMPANY**
 - d. COMPANY BASIC DETAILS**
 - e. COMPANY CONTACT DETAILS**
 - f. SOLUTIONS THEY PROVIDE**
 - g. COMPANY SERVICES**
 - h. COMPANY OEM PARTNERS**
- 12. WORKING CAPITAL MANAGEMENT**
 - A. INTRODUCTION**
 - B. CONCEPTS OF WORKING CAPITAL MANAGEMENT**
 - C. IMPORTANCE \ ADVANTAGES OF ADEQUATE WORKING CAPITAL**
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 - E. NATURE OF WORKING CAPITAL**
 - F. OPERATING CYCLE CONCEPT**
 - G. DETERMINANTS OF WORKING CAPITAL**
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- 13. ANALYSE AND INTERPRETATION OF DATA**
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- 14. CONCLUSION**
- 15. SUGGESTION**
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THEORETICAL INTRODUCTION OF FINANCIAL MANAGEMENT

Let's Define Financial Management As The First Part Of The Introduction To Financial Management. For Any Business, It Is Important That The Finance It Procures Is Invested In A Manner That The Returns From The Investment Are Higher Than The Cost Of Finance. In A Nutshell, Financial Management –

- *Endeavors To Reduce The Cost Of Finance

- *Ensures Sufficient Availability Of Funds

- *Deals With The Planning, [Organizing](#), And [Controlling](#) Of Financial Activities Like The Procurement And Utilization Of Funds.



“Financial Management Is That Area Of Business Management Devoted To A Judicious Use Of Capital And A Careful Selection Of The Source Of Capital In Order To Enable A Spending Unit To Move In The Direction Of Reaching The Goals.” – **J.F. Brandley**

Financial Management Is The Activity Concerned With Planning, Raising, Controlling And Administering Of Funds Used In The Business.” – **Guthman And Dougal**

THEORETICAL INTRODUCTION OF WORKING CAPITAL MANAGEMENT

Working Capital Or Circulating Capital Indicates Circular Flow Of Funds In The Day-To-Day Or Routine Activities Of Business. However, This Term Is Used In Two Ways; In The Gross And In The Net Concept. In The Broad Sense, The Term 'Working Capital Is Used To Denote The 'Total Current Assets'. The Following Are Some Definitions Of This Group.

"Working Capital Means Current Assets". -Mead, Baker, Malott. "The Sum Of The Current Assets Is Working Capital Of A Business". -J.S. Mill.

Working Capital Managements Takes Place At Two Levels:

1. Ratio Analysis Can Be Used To Monitor Overall Trends In Working Capital And To Identify Areas Requiring Management.
2. The Individual Components Of Working Capital Can Effectively Managed By Using Various Techniques And Strategies. When Considering These Techniques And Strategies, Company Needs To Recognize That Each Department Has A Unique Mix Of Working Capital Components. The Emphasis That Needs To Be Placed On Each Component Varies According To The Department.

Working Capital = Current Asset-Current Liabilities

Debtors	Trade
Stock	Creditors
Cash	Bills Payable
Investment	Short-Term
Loan & Advances	Loans
Taxation	
Dividend	

The Primary Objective Of Working Capital Management Is To Ensure That Sufficient Cash Is Available:

- 1.Meet Day To Day Cash Flow Needs
2. Pay Wages And Salaries
3. Pay Creditors To Ensure Continued Supplies Of Goods And Services
4. Ensure Ling-Term Survival Of The Business Entity

CONCEPTS OF WORKING CAPITAL

Working Capital Differs From Fixed Capital In Terms Of Time Required To Recover The Investment In A Given Asset. In Case Of Fixed Capital Or Long-Term Asset 9 Such As Land, Building And Equipment, A Firm Usually Needs Several Years Or More To Recover The Initial, Investment In Contrast, Working Capital Is Turned Over Or Circulated At A Relatively Repaid Rate. There Are To Concept Of Working Capital Gross And Net Working Capital. Generally, The Working Capital Has Its Significance In Two Perspectives. There Are Gross Working Capital And Net Working Capital Are Called “Balance Sheet Approach” Of Working Capital.

GROSS WORKING CAPITAL

The Terms ‘Gross Working Capital’ Refers To The Firm’s Investment In Current Asset. According To This Concept Working Capital Refers To Firm’s Investment In Current Asset. The Amount Of Current Liabilities Is Not Deducted From Total Of Current Asset.

NET WORKING CAPITAL

The Term ‘Net Working Capital’ Refers To The Excess Of Current Assets Over Current Liabilities. It Refers To The Difference Between Current Assets And Current Liabilities The Net Working Capital Is Qualitative Concept Which Indicates The Liquidity Position Of A Firm And The Extend To Which Working Capital Needs May Be Financed By Permanent Source Of Fund.

The ‘Positive Net Working ’Represents The Excess Of Current Assents Over Current Liabilities.

The Net Working Capitals Turn To Be Negative When Current Liabilities Are Exceeding The Current Asset. The Negative ‘Working Capital’ Position Will Adversely Affect The Operation Of The Firm And Its Profitability. Working Capital Is Also To Of Permanent And Temporary Working Capital.

SCOPE OF THE STUDY

The Project Is Vital To Me In Significant Way Because This Project Will Be A Learning Device For Finance Student. The Project Is Mainly Concentrated On Working Capital Management Of Replisoft Technologies Pvt. Ltd. The Study Aims To Find Out The Changes In Current Assets And Current Liabilities And Analysis Of The Liquidity, Profitability And Efficiency Of The Company During The Period 25thjan,2023 To 15thfeb,2023. Through This Project The Effectiveness Of Working Capital Management The Company Can Be Estimated By Using Various Statistical And Mathematical Tools.

The Study Is Both Descriptive And Analytical In Nature It Is An Attempt To Evaluate The Working Capital Management Of Company.

- To Analyze The Working Capital Position.
- To Evaluate The Liquidity Position.
- To Analyze The Efficiency In Management Of Working Capital.
- To Give Suggestions For The Improvement Of Working Capital.
- To Analyze The Profitability Of Company.

PURPOSE OF THE STUDY

I Am Student Of Bachelor Of Business Administration Under Knu University Belong To Bba Stream. As Per The Requirement Of Bba Course I Have Been Directed By Our Study Centre Authority To Receive The Industrial Training And Prepare A Project Report On Working Capital Management.

I Have Got An Opportunity To Do A Project On Working Capital Management At Replisoft Technologies Pvt. Ltd., Ghaziabad. It Is A Fastest Growing **It** Solutions Provider. It Is A **It** System Integration Company. They Work With Us To Ensure The Success Of All Of Your Business. It Is Providing Total System Integration Solution Compute And Storage Solution, Networking & Security Solution, Software Services, Data Centre Solutions And Video Surveillance Solution According To The Technical Specifications Of The Project And User Requirements.

Our Services Are As Following: -

*Infrastructure Management Services(Ims)

*Facility Management Services (Fms)

Replisoft Offers: -

- Project Management
- Server/Systems Management
- Network (Lan/Wan) Management
- Mail Management
- Asset Management
- Data Center Management
- Manpower Deployment
- Call Management

Here In This Study, I Have Focused To Bring Out The Significance Of Various Components Of Working Capital Viz. Inventories, Cash And Bank Balance, Debtors, Etc.

The Training Was Basically An In- House Training Which Intimated Me With Various Aspects Of The Project.

METHODOLOGY USED

JUSTIFICATION OF TOPIC

In Today's Competitive World Maintaining Financial Strength On A Day-To-Day Basis Has Become A Challenge. Every Firm Wants To See Themselves Financially Sound. The Financial Attributes Like Liquidity, Solvency And Profitability Can Be Improved By Effective Implementation Of The Working Capital Management. Working Capital Supports The Day-To-Day Operations Of The Firm. As It Includes Items Like Cash, Inventory, Receivables, Payables Etc The Working Capital Shows The Activities Of The Companies. Empirical Studies Have Shown That Ineffective Management Of Working Capital As One Of The Major Causes Of Industrial Sickness. So, Efficient Management Of Working Capital Is One Of The Important Indicators Of Financial Soundness.

STATEMENT OF PROBLEM

This Project Report Tries To Evaluate How The Management Of Working Capital Is Carried Out In Replisoft Technologies Pvt. Ltd.

OBJECTIVES OF THE STUDY:

- 1) To Understand The Concept Of Working Capital Management
- 2) To Study The Components Of Working Capital Management.
- 3) To Analyse The Efficiency Of Working Capital Management In Replisoft Technologies Pvt. Ltd. Using Intra Firm Ratio Analysis.
- 4) To Find Out The Changes In Working Capital Of Replisoft Technologies Pvt. Ltd Using Comparative Financial Statement Analysis.
- 5)To Study And Analyses The Concept Of Working Capital
- 6)To Study The Operating Cycle.
- 7)To Study The Different Ratios Related To Working Capital

AREA OF STUDY

Area Of Study Is Financial Management.

SAMPLE SIZE

The Sample For The Study Has Been Selected A Company Named Replisoft Technologies Pvt. Ltd., Ghaziabad Which Is A Fastest Growing It Solutions Provider.

LIMITATIONS OF THE STUDY

The Study Conducted And Done Is Analytical, Subject To The Following Limitations

1. The Study Is Mainly Carried Out Based On The Secondary Data Provided In The Financial Statements.
2. This Study Is Based On The Historical Data And Information Provided In The Annual Reports Therefore It May Not Be A Future Indicator.
3. There May Be Some Fractional Differences In The Calculated Ratios.

As The Study Was For Short Span Of 3 Weeks 1 Day And Due To Lack Of Time Other Areas Could Not Be Well Focused.

Company Profile

Replisoft Technologies Pvt. Ltd.



Address- G-6, B-11, Dlf Dilshad Ext.-li,
Ghaziabad, Up-201005, India.

ABOUT COMPANY

Replisoft Technologies Is A Fastest Growing It Solutions Provider. We Can Work With You To Ensure The Success Of All Of Your Business. Replisoft Looks Deeper Into Your Business To Find Smarter It Solutions And Clearer Strategies For A Better Business Model. Our Engineers Have A Wide Range Of Knowledge In Regards To All Aspects Of Technology And Will Provide You With The Solutions You Need To Be Successful In Your Business. We Are Providing Total System Integration Solution Compute And Storage Solution, Networking & Security Solution, Software Services, Data Center Solutions And Video Surveillance Solution According To The Technical Specifications Of The Project And User Requirements. We Have Expertise In Backup, Data Protecting, Storage Technologies, Disaster Recovery, Networking And Hpc Solution Etc.

WHAT THEY DO?

Replisoft Is It System Integration Company. We Help Our Clients To Use Technology Platforms To Deliver Business Results For Their Enterprise. We Work As A Strategic Partner To Help Our Clients Enable It To Deliver Results For Their Growth And Success.

HISTORY OF THE COMPANY

Replisoft Technologies Private Limited Is A Private Incorporated On 07 November 2017. It Is Classified As Non-Govt Company And Is Registered At Registrar Of Companies, Delhi. Its Authorized Share Capital Is Rs. 1,000,000 And Its Paid Up Capital Is Rs. 100,000. It Is Involved In Other Computer Related Activities [For Example Maintenance Of Websites Of Other Firms/ Creation Of Multimedia Presentations For Other Firms Etc.]

Replisoft Technologies Private Limited's Annual General Meeting (Agm) Was Last Held On 30 November 2021 And As Per Records From Ministry Of Corporate Affairs (Mca), Its Balance Sheet Was Last Filed On 31 March 2021.

Directors Of Replisoft Technologies Private Limited Are Sovona Mondal, Sanjoy Maity And .

Replisoft Technologies Private Limited's Corporate Identification Number Is (Cin) U72900dl2017ptc325728 And Its Registration Number Is 325728. Its Email Address Is Prasenjit.Dbc@Gmail.Com And Its Registered Address Is Rz-697, , F/F, Gali No-08, Raj Nagar-1, Palam Colony, New Delhi South West Delhi DI 110077 In .

Current Status Of Replisoft Technologies Private Limited Is - Active.

COMPANY BASIC DETAILS: -

Director Details

Din	Director Name	Designation	Appointment Date
07966033	Sovona Mondal	Director	07 November 2017
09336643	Sanjoy Maity	Director	04 September 2021

Company Details

Cin	U72900dl2017ptc325728
Company Name	Replisoft Technologies Private Limited
Company Status	Active
Roc	Roc-Delhi
Registration Number	325728
Company Category	Company Limited By Shares
Company Sub Category	Non-Govt Company
Class Of Company	Private
Date Of Incorporation	07 November 2017
Age Of Company	5 Years, 4 Month, 25 Days

Share Capital & Number Of Employees

Authorised Capital	₹1,000,000
Paid Up Capital	₹100,000

COMPANY CONTACT DETAILS: -

Replisoft Technologies Pvt Ltd

G-6, B-11, Dlf Dilshad Extn.-li,
Ghaziabad, Up-201005, India.

SOLUTIONS THEY PROVIDE...

They Offer A Variety Of Solutions To The Clients



Data Center Build

Our Data Center Team Helps You To Identify Your Requirements, Data Center Capacities, For An Optimal Green, Energy Efficient And High-Resiliency Data Center. The Engineering Team Helps Clients To Build New Data Centers Or Optimize Existing Ones While Ensuring We Help Leverage Savings And Redundancy Through Consolidation And Relocation.



High-End Computing (Hpc)

Performance Computing Most Generally Refers To The Practice Of Aggregating Computing Power In A Way That Delivers Much Higher Performance Than One Could Get Out Of A Typical Desktop Computer Or Workstation In Order To Solve Large Problems In Science, Engineering, Or Business.

Replisoft Hpc Experts Provide Services To Customers Enabling Them To Achieve Their Established Research Goal. Our Industry Leading Experts Come With A Variety Of Competencies Providing Services Like Workflow/Architecture Consulting, Hpc Compute And Storage Infrastructure Sizing, Performance Improvement Workflow, Application Performance Tuning Using Best Practices, Application Analysis, Application Porting To Accelerator Platform And Others.

Network Infrastructures



Networking Has Become The Most Prominent Area And Commanding The Focus For Turnkey Consultancy Including Design And Implementation Of Enterprise Networks And Management Solutions Besides Training And Product Support Until The End Of Life.

We Have Necessary Trained Engineering Resources To Support Leading Products Like Juniper, Brocade, Extreme Network, Hp Network & Cisco And Much More To Provide Solutions And Services Of The Very High Standard To The Clients.

Storage Solution



We Offer A Full Suite Of Professional Services For Our Customers In Storage, Backup, Archival And Storage Networks Technologies, Ranging From Solution Consulting And Project Planning To Installation, Training, Health Checks, Site Assessments, Troubleshooting, And Support. Replisoft Consultants Have Significant Depth Of Experience With All Major Backup Applications, Operating Systems, Database Applications, Tape Hardware, And Storage Technologies.

Backup Solution



Backup Is An Additional Copy Of Data That Can Be Used For Restore And Recovery Purpose. This Backup Copy Can Be Created By Simply Copying Data (There Can Be One Or More Copies). A Backup Is Put In Place To Avoid Permanent Data Loss Ensure The Integrity Of Stored Data I.E. Can Get To The Previous Version And Build Up The Data Correctly If Current Data Found To Be In Error. Replisoft Technologies Offers An Enterprise-Grade Fully Automated, Scalable And Flexible Backup Solution Complete With Real-Time Monitoring Built To Meet All Of Our Customer's Exact Requirements.

Disaster Recovery

Replisoft Technologies Provides Their Customers With Fully Tailored Onsite And Offsite Disaster Recovery Solutions, Guaranteeing That All Customer Systems Are Fully Recoverable Within The Required Recovery Time Objectives (Rto's).



System Integration

The Main Challenges Facing Organizations Today On Their Path To Growth Are Complex Technologies And A Rapidly Evolving Business Environment. Consequently, There Is A Pronounced Need To Understand The Complexities Of The It Environment And Ensure That The Technology Is In Line With Your Business Objectives. The Need To Achieve Operational Excellence Irrespective Of The Organization Sizes While Maximizing Efficiency To Enable Technology-Enabled Business Transformation Is Paramount.

COMPANY 'S SERVICES

Infrastructure Management Services (ImS)

Our Service Delivery Models Are Dedicated To Ensuring The Highest Availability Of Your It Infrastructure And Applications. From Providing You With The Secure Infrastructure To Quality Processes, We Give Your Business A Competitive Edge In The Market.

To Ensure That There Are Services Available To Our Customers After Warranty, We Provide Both Amc And Fms Support To Them. Hence We Maintain Hardware From Multiple Vendors For Our Customers. Post Warranty Maintenance Support Services Cover The Following :

- It Products: Pc, Laptop & Notebooks
- Servers & Storage And Backup Device
- Switches, Routers, Firewall, Utm/Ips Etc.
- Lan & Wan
- Printers & Plotters

Facility Management Services (Fms)

Our It Facilities Management Services Is A Comprehensive Set Of Services That Help Our Customers To Fully Utilize Their It Investments By Improving Availability, Reliability, And Performance. End - To End It Infra Support. Our Services Imbibe Effective Combination Of Human Capital, Process, And Tools To Ensure That Your It Infrastructure Is Always Running Without Interruption. We Undertake A 24x7 Service Window Ensuring Complete Responsibility For Availability And Performance Of Your It Infrastructure As Per Sla.

Replisoft Offers:

- Project Management
- Server/Systems Management
- Network (Lan/Wan) Management
- Mail Management
- Asset Management
- Data Center Management
- Manpower Deployment & Call Management

Consultation Services

Replisoft Technologies Consultants Provide Expertise At The Intersection Of Business And Technology, Supporting Our Clients In Enhancing Competitiveness And Creating New Sources Of Economic Value. Our Consultants Work With Clients Like You Seeking To Close The Gap Between Business And Information Technology.

It Staffing & Outsourcing

Replisoft Technologies Offers It Industry For Trained It Staff For Their In-House Support. We Are Here To Help You In 24*7*365 Model.

Experienced Replisoft Consultants Provide Support For Product Evaluations Such As:

- Hardware Solution
- Software Solution
- Operating System
- Storage Technologies
- Backup & Restore Technologies
- Disaster Recovery & Data Protection
- Security Concept

COMPANY' OEM PARTNERS :



Working Capital Management



INTRODUCTION:

The Uses Of Funds Of A Concern Can Be Divided Into Two Parts Namely Long-Term Funds And Short-Term Funds. The Long – Term Investment May Be Termed As 'Fixed Investment.' A Major Part Of The Long-Term Funds Is Invested In The Fixed Assets. These Fixed Assets Are Retained In The Business To Earn Profits During The Life Of The Fixed Assets. To Run The Business Operations Short–Term Assets Are Also Required.

The Term Working Capital Is Commonly Used For The Capital Required For Day-To-Day Working In A Business Concern, Such As For Purchasing Raw Material, For Meeting Day-To-Day Expenditure On Salaries, Wages, Rents Rates, Advertising Etc. But There Are Much Disagreement Among Various Financial Authorities (Financiers, Accountants, Businessmen And Economists) As To The Exact Meaning Of The Term Working Capital.

Definition And Classification Of Working Capital:

Working Capital Refers To The Circulating Capital Required To Meet The Day To Day Operations Of A Business Firm. Working Capital May Be Defined By Various Authors As Follows:

1. According To Weston & Brigham - "Working Capital Refers To A Firm's Investment In Short Term Assets, Such As Cash Amounts Receivables, Inventories Etc.
2. Working Capital Means Current Assets. —Mead, Baker And Malott
3. "The Sum Of The Current Assets Is The Working Capital Of The Business" —J.S.Mill

Working Capital Is Defined As "The Excess Of Current Assets Over Current Liabilities And Provisions". But As Per Accounting Terminology, It Is Difference Between The Inflow And Outflow Of Funds. In The Annual Survey Of Industries (1961), Working Capital Is Defined To Include "Stocks Of Materials, Fuels, Semi-Finished Goods Including Work-In-Progress And Finished Goods And By- Products; Cash In Hand And Bank And The Algebraic Sum Of Sundry Creditors As Represented By

(A) Outstanding Factory Payments Eg. Rent, Wages, Interest And Dividend.

(B) Purchase Of Goods And Services.

(C) Short-Term Loans And Advances And Sundry Debtors Comprising Amounts Due To The Factory On Account Of Sale Of Goods And Services And Advances Towards Tax Payments".

The Term "Working Capital" Is Often Referred To "Circulating Capital" Which Is Frequently Used To Denote Those Assets Which Are Changed With Relative Speed From One Form To Another I.E., Starting From Cash, Changing To Raw Materials, Converting Into Work-In-Progress And Finished Products, Sale Of Finished Products And Ending With Realization Of Cash From Debtors.

Working Capital Has Been Described As The "Life Blood Of Any Business Which Is Apt Because It Constitutes A Cyclically Flowing Stream Through The Business".

CONCEPTS OF WORKING CAPITAL MANAGEMENT

There Are Two Concepts Of Working Capital Viz. Quantitative And Qualitative. Some People Also Define The Two Concepts As Gross Concept And Net Concept. According To Quantitative Concept, The Amount Of Working Capital Refers To 'Total Of Current Assets. Current Assets Are Considered To Be Gross Working Capital In This Concept.

The Qualitative Concept Gives An Idea Regarding Source Of Financing Capital. According To Qualitative Concept The Amount Of Working Capital Refers To "Excess Of Current Assets Over Current Liabilities."

L.J. Guthman Defined Working Capital As "The Portion Of A Firm's Current Assets Which Are Financed From Long-Term Funds.

The Excess Of Current Assets Over Current Liabilities Is Termed As 'Net Working Capital'. In This Concept "Net Working Capital" Represents The Amount Of Current Assets Which Would Remain If All Current Liabilities Were Paid. Both The Concepts Of Working Capital Have Their Own Points Of Importance. "If The Objectives Is To Measure The Size And Extent To Which Current Assets Are Being Used, 'Gross Concept' Is Useful; Whereas In Evaluating The Liquidity Position Of An Undertaking 'Net Concept' Becomes Pertinent And Preferable.

It Is Necessary To Understand The Meaning Of Current Assets And Current Liabilities For Learning The Meaning Of Working Capital, Which Is Explained Below.

Current Assets – It Is Rightly Observed That "Current Assets Have A Short Life Span. These Types Of Assets Are Engaged In Current Operation Of A Business And Normally Used For Short-Term Operations Of The Firm During An Accounting Period That Is Within Twelve Months. The Two Important Characteristics Of Such Assets Are:

(I) Short Life Span, And

(ii) Swift Transformation Into Other Form Of Assets.

Cash Balance May Be Held Idle For A Week Or Two, Account Receivable May Have A Life Span Of 30 To 60 Days, And Inventories May Be Held For 30 To 100 Days."

Fitzgerald Defined Current Assets As, "Cash And Other Assets Which Are Expected To Be Converted In To Cash In The Ordinary Course Of Business Within One Year Or Within Such Longer Period As Constitutes The Normal Operating Cycle Of A Business."

Current Liabilities – The Firm Creates A Current Liability Towards Creditors (Sellers) From Whom It Has Purchased Raw Materials On Credit. This Liability Is Also Known As Accounts Payable And Shown In The Balance Sheet Till The Payment Has Been Made To The Creditors.

IMPORTANCE/ADVANTAGE OF ADEQUATE WORKING CAPITAL:

- Availability Of Raw Materials Regularly:-

Adequacy Of Working Capital Makes It Possible For A Firm To Pay The Suppliers Of Raw Materials On Time. As A Result It Will Continue To Receive Regular Supplies Of Raw Materials And Thus There Will Be No Disruption In Production Process.

- Full Utilization Of Fixed Assets:-

Adequacy Of Working Capital Makes It Possible For A Firm To Utilize Its Fixed Assets Fully And Continuously. For Example, If There Is Inadequate Stock Of Raw Material, The Machines Will Not Be Utilized In Full And Their Productivity Will Be Reduced.

- Cash Discount:-

A Firm Having The Adequate Working Capital Can Avail The Cash Discount By Purchasing The Goods For Cash Or By Making The Payment Before The Due Date.

- Increase In Credit Rating:-

Paying Its Short-Term Obligations In Time Leads To A Strong Credit Rating Which Enables The Firm To Purchase Goods On Credit On Favorable Terms And To Maintain Its Line Of Credit With Banks Etc. It Facilities The Taking Of Loan In Case Of Need.

- Exploitation Of Favorable Market Conditions:

Whenever There Are Chances Of Increase In Prices Of Raw Materials, The Firm Can Purchase Sufficient Quantity If It Has Adequate Of Working Capital. Similarly, If A Firm Receives A Bulk Order For The Supply Of Goods It Can Take Advantage Of Such Opportunity If It Has Sufficient Working Capital

- Facility In Obtaining Bank Loans:-

Banks Do Not Hesitate To Advance Even The Unsecured Loan To A Firm Which Has The Sufficient Working Capital. This Is Because The Excess Of Current Assets Over Current Liabilities Itself Is A Good Security.

- Increase In Efficiency Of Management:-

Adequacy Of Working Capital Has A Favorable Psychological Effect On The Managers. This Is Because No Obstacle Arises In The Day-To-Day Business Operations. Creditors, Wages And All Other Expenses Are Paid On Time And Hence It Keeps The Morale Of Manager's High

- Ability To Face Crisis:-

Adequate Working Capital Enables A Concern To Face Business Crisis In Emergencies Such As Depression, Because During Such Periods, Generally, There Is Much Pressure On Working Capital.

- Solvency Of The Business:-

Adequate Working Capital Helps In Maintaining Solvency Of The Business By Providing Uninterrupted Flow Of Production

- Good Will :-

Sufficient Working Capital Enables A Business Concern To Make Prompt Payments And Hence Helps In Creating And Maintaining Good Will.

TYPES OF WORKING CAPITAL

Working Capital Can Be Classified Either On The Basis Of Its Concept Or On The Basis Of Periodicity Of Its Requirements.

A) On The Basis Of Balance Sheet Concept.

On The Basis Of Its Concept, It May Be Either Gross Working Capital Or Net Working Capital. Gross Working Capital Is Represented By The Total Current Assets. The Net Working Capital Is The Excess Of Current Assets Over Current Liabilities.

(I) Gross Working Capital = Total Current Assets

(II) Net Working Capital = CA - CL (Current Assets - Current Liabilities)

(B) On The Basis Of Requirements

According To Gerstenbergh, The Working Capital Can Be Classified Into Two Categories On The Basis Of Time And Requirement:

(I) Permanent Working Capital:-

It Refers To The Minimum Amount Of Investment Which Should Be There In The Fixed Or Minimum Current Assets Like Inventory, Accounts Receivable, Or Cash Balance Etc., In Order To Carry Out Business Smoothly. This Investment Is Of A Regular Or Permanent Type And As The Size Of The Firm Expands, The Requirement Of Permanent Working Capital Also Increases. Tandon Committee Has Referred To This Type Of Working Capital As "Hard Core Working Capital".

(II) Variable Working Capital:-

The Excess Of Working Capital Over Permanent Working Capital Is Known As Variable Working Capital. The Amount Of (144) Such Working Capital Keeps On Fluctuating From Time To Time On The Basis Of Business Activities. It May Again Be Sub-Divided Into Seasonal And Special Working Capital. Seasonal Working Capital Is Required To Meet The Seasonal Demands Of Busy Periods Occuring At Stated Intervals. On The Other Hand, Special Working Capital Is Required To Meet Extra-Ordinary Needs For Contingencies. Events Like Strike, Fire, Unexpected Competition, Rising Price Tendencies Or Initiating A Big Advertisement Campaign Require Such Capital. The Following Diagram Illustrates The Difference Between Permanent And Variable Working Capital.

NATURE OF WORKING CAPITAL

Working Capital Management Is Concerned With The Problems That Arise In Attempting To Manage The Current Assets, The Current Liabilities And The Inter Relationship That Exists Between Them. The Term Current Refers To Those Assets Which In The Ordinary Course Of Business Can Be , Or Will Be Converted Into Cash Within One Year Without Undergoing A Diminution In Value And Without Disrupting The Operation Of The Firm. The Major Current Assets Are Cash, Marketable Securities, Accounts Receivables And Inventory , Current Liabilities Are Those Liabilities, Which Are Intended At Their Inception, To Be Paid In The Ordinary Course Of Business , Within A Year Out Of The Current Or The Earning Of The Concern. The Basic Current Liabilities Are Accounts Payable, Bills Payable, Bank Overdrafts And Outstanding Expenses. The Goal Of Working Management Is To Management Is To Manage

The Firms Assets And Liabilities In Such A Way That A Satisfactory Level Of Working Capital In Maintain. This Is Because If The Firms Cannot Maintain A Satisfactory Level Of Working Capital , It Is Likely To Become Insolvent And May Even Be Forced Into Bankruptcy. The Current Assets Should Be Large Enough To Cover Its Current Liabilities In Order To Ensure A Reasonable Margin Of Safety. Each Of The Short Term Source Of Financing Must Be Continuously Managed To Ensure That They Are Obtained And Used In The Way. Interaction Between Current Liabilities Is, Therefore The Main Theme Of The Of Management Of Working Capital.

OPERATING CYCLE CONCEPT

Every Business Undertaking Requires Funds For Two Purpose-Investments In Fixed Assets And Investment In Current Assets. Funds Required Investing In Inventories; Debtors And Other Current Assets Keep On Changing Shape And Volume. For Example, A Company Has Some Cash In The Beginning. This Cash May Be Paid To The Suppliers Of Raw-Materials, To Meet Labour Costs And Other Overheads. These Three Combined Would Generate Work-In-Progress Which Will Be Converted Into Finished Goods On The Completion Of The Production Process. On Sale, These Finished Goods Get Converted Into Debtors And When Debtors Pay, This Cash Will Again Be Used For Financing Raw Materials, Work-In-Progress, Finished Goods And Debtors Etc. So The Cycle Is Completed On The Conversion Of These Currents Assets Into Cash. This Time Period Is Simply Known As The Working Capital Cycle Of The Firm. In Other Words, Working Capital Cycle Indicates The Length Of Time Between A Firm's Paying For Materials Entering Into Stock And Receiving The Cash From The Sale Of Finished Goods. In A Manufacturing Firm, The Duration Of Time Required To Complete The Sequence Of Events Is Called Operating Cycle. In Case Of A Manufacturing Company, The Operating Cycle Is The Length Of Time Necessary To Complete The Following Cycle Of Events :-

- a) Conversion Of Cash Into Raw Materials.
- b) Conversion Of Raw Materials Into Work-In-Progress;
- c) Conversion Of Work-In-Progress Into Finished Goods
- d) Conversion Of Finished Goods In Accounts Receivable, And
- e) Conversion Of Accounts Receivable Into Cash. This Cycle Is Repeated Again And Again.



DETERMINANTS OF WORKING CAPITAL :-

Numbers Of Rules Are Formulated To Determine The Working Capital Requirement Of The Firm. A Large Number Of Factors Influence The Working Capital Needs Of The Firm. All These Factors Have Different Importance, Also The Importance Of The Factor Change For A Firm Over Time. Therefore Analysis Of The Relevant Factor Should Be Made In Order To Determine The Total Investment In Working Capital Requirements Of The Firm.

1. Nature And Size Of Business
2. Seasonality Of Operation
3. Production Policy
4. Marketing Conditions
5. Business Cycle Fluctuation
6. Credit Policy
7. Conditions Policy
8. Working Capital Policy
9. Current Assets In Relation To Sales

1.Nature Of Business:-

The Working Capital Requirement Of A Firm Is Closely Related To The Nature Of Its Business. A Service Firm Like An Electricity. A Service Firm Like An Electricity Undertaking Of A Transport Corporation, Which Has Short Operating Cycle And Sell On Cash Basis, Has Modest Working Capital Requirement. On The Other Hand Manufacturing Concern Like Machine Tools Units Which Has Long Operating Cycle And Which Sells Largely On Credit Had Varied Substantial Working Capital Management.

2.Seasonality Of Operation:-

Firms Which Have Market Seasonally In Their Operation Usually Have Highly Function Working Capital Requirement. For A Sugar Industry The Raw Material That Is, Sugar Cane Is Available In Particular Season Only. So Sugar Industry Mainly Depends Upon Seasonality Of Operations.

3.Production Policy:-

A Firm Marked By Pronounced Seasonal Fluctuations In Its Sales Many Pursue A Production Policy Which Many Reduce The Shape Variation Is Working Capital Requirement.

4.Marketing Conditions:-

In View Of Competitive Conditions Prevailing In The Firm May Have To Offer Liberal Credit Terms, To Customs Resulting In Higher Debtors, Even Large Inventories Many Be Maintain To Serve An Order As When Received.

5.Business Cycle Fluctuations :-

Different Phases Of Business Cycle I.E Boom, Recession, Recovery, Etc. Also Effect Working Capital Requirement. In Case Of Boom Conditions Inflationary Pressure Appear And Business Activities Expand. As A Result Overall Need For Cash, Inventories, Etc. Increase Resulting More And More Funds Blocked In These Current Assets. In Case Of Recession Period. However, There Is Usually Dullness In Business Activities And There Will Be Opposite Effect On The Level Of Working Capital.

6.Credit Policy :-

The Credit Policy Means The Totality Of Terms And Conditions On Which Goods Are Sold And Purchased. A Firm Has Interact With 2 Types Of Credit Policies At A Time One The Credit Policy Of The Supplier Of Raw Material, Goods, Etc. And Two The Credit Policy Relating To Credit Which It Extends To Its Customer. In Both The Cases, However The Firm While Deciding Its Credit Policy Has To Take Care Of Credit Policy Of The Market For Example A Firm Might Be

Purchasing Goods And Services On Credit But Selling Goods Only For Cash, The Working Capital Requirement Of This Firm Will Be Lower Than That Of A Firm Which Is Purchasing Cash, But Has To Sell On Credit Basis.

7. Conditions Of Supply:-

If The Supply Is Prompt And Adequate The Firm Can Manage With Small Inventory, If The Supply Is Unpredicted And Service Then The Firm Has To Ensure Continuity Of Production.

8. Working Capital Policy:-

Two Important Issues In Formulation The Working Capital Policy Are :

1. What Should Be The Ratio Of Current Assets To Sales.
2. What Should Be The Ratio Of Short Term Financing To Long-Term Financing.

9. Current Assets In Relation To Sales:-

It Usually Does The Invested In Current Assets Cannot Be Specified Unequally. In Sales Of Uncertainty The Outlook On Current Assets Would Consist Of Base Component Meant To Meet Normal Requirement And Safety Component Meant To Coping With Unusual Demands And Requirements. The Safety Assets Policy Of The Firm.

CHANGES IN WORKING CAPITAL :-

The Working Capital Of A Concern Is Subject To Changes Due To Several Reasons. As We Know That The Gross Working Capital Is Equal To Current Assets. But Net Working Capital We Mean The Excess Of Current Assets Over Current Liabilities. The Net Working Capital Is Therefore, Affected By The Following Transactions.

1. Which Increase The Current But Not The Current Liabilities.
2. Which Decrease The Current Assets And Current Liabilities Both Increase In The Same Direction By A Transaction It Does Not Bring Any Changes In The Net Working Capital Of The Concern. Only The Total Of Current Assets And Current Liabilities Increase And Decrease.

REASONS FOR CHANGES IN WORKING CAPITAL: -

1. Changes In The Level Of Sales And \Or Operating Expenses
2. Policy Changes
3. Changes In The Technology.

SIGNIFICANCE OF WORKING CAPITAL :-

SIGNIFICANCE

Gross Working Capital Concept Focuses Attention On The Two Aspect Of Current Asset Management. They Are:

1). Optimum Investment In Current Assets:

Investment In Current Asset Must Be Just Adequate To The Needs Of The Firm. On The Other Hand Excessive Investment In Current Asset Should Be Avoided.

2). Financing Of Current Asset:

Need For Working Capital Arise Due To The Increasing Level Of Business Activity. Therefore, There Is A Need To Provide It Quickly. If There Is Surplus Fund Arise That Should Be Invested In Short Term Securities.

Net Working Capital Concept

As Per This Concept The Excess Of Current Asst Over Current Liabilities Represents Net Working Capital. Similar View Is Expressed By Guthmann, Gerstenberg, Goel Etc.

Net Working Capital Represents The Amount Of Current Asset Which Remain After All The Current Liabilities Were Paid. It May Be Either Positive Or Negative. It Will Be Positive If Current Asset Exceed Current Liabilities And Vice Versa.

To Quote Roy Chowdry, "Net Working Capital Indicates The Liquidity Of The Liquidity Of Business Whilst Gross Working Capital Denotes The Quantum Of Working Capital With Which Business Has To Operate.

SIGNIFICANCE

Net Working Capital Concept Focuses On Two Aspects. They Are:

1). Maintaining Liquidity Position:

Excess Current Assets Help In Meeting Its Financial Obligation Within The Operating Cycle Of The Firm. Negative And Excess Working Capitals Both Are Bad To The Firm.

2). To Decide Upon The Extent Of Long Term Capital In Financing Current Asset:

Net Working Capital Means The Portion Of Current Asst That Should Be Financed By Long Term Funds. This Concept Helps To Decide The Extent Of Long Term Fund Required In Finance Current Assets.

COMPUTATION OF WORKING CAPITAL CYCLE PERIOD

Working Capital Cycle (Wcc) Is The Time It Takes To Convert Net Current Assets And Current Liabilities (E.G. Purchased Stock) Into Cash. A Long Cycle Means Tying Up Capital For A Longer Time Without Earning A Return. Short Cycles Allow Your Business To Free Up Cash Faster And To Be More Agile.

IMPORTANCE OF THE WORKING CAPITAL CYCLE

If Every Transaction Your Business Is Involved In Occurred On The Same Day, It Would Be Very Simple To Understand Your Financial Position. However, In Reality, There's Almost Always A Delay Between Paying For Assets, Selling Inventory Or Delivering A Service, And Receiving Payment For Your Goods Or Work. This Can Affect Cash Flow, So It's Important To Manage The Working Capital Cycle To Improve The Short-Term Liquidity And Efficiency Of Your Business.

FORMULA: -

To Calculate Working Capital Cycle, Add The Number Of Inventory Days To Your Receivable Days, Then Subtract The Number Of Payable Days.

The Working Capital Cycle Formula Is:

$$\text{Inventory Days} + \text{Receivable Days} - \text{Payable Days} = \text{Working Capital Cycle In Days}$$

The Working Capital Cycle Formula May Vary Depending On Different Types Of Business. For Example, A Manufacturing Business Will Have More Phases Than A Retailer.

What Is A Positive Working Capital Cycle?

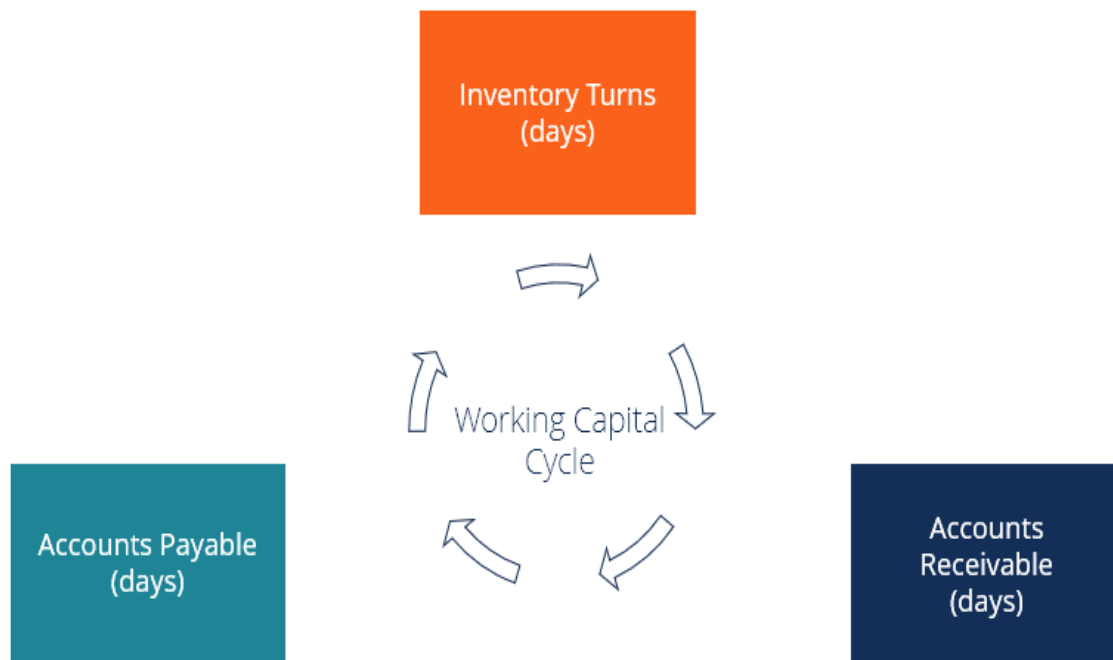
When A Company Is Waiting To Receive Payment To Create Available Cash, It Has A Positive Working Capital Cycle. This Is Normal And The Situation Most Businesses Are In Because They Must Balance Paying Suppliers With Producing Their Product Or Service, And Being Paid.

What Is A Negative Working Capital Cycle?

As We Saw In The Retailer Example Above, It Is Possible To Have A Negative Cycle If You're Able To Collect Money Faster Than The Time You Require To Pay Your Bills.

Why A Shorter Working Capital Cycle Can Be Good For Your Business?

A Shorter Working Capital Cycle Is Useful Because It Lets You Free Up Cash For Use Elsewhere That Would Otherwise Be Stuck In The Cycle. In Contrast, If Your Cycle Is Too Long, The Capital Remains Locked In The Operational Cycle Without Giving Any Returns. It's Important To Remember That While Cash Is Locked In The Cycle, The Business Needs To Have Enough Capital To Sustain Its Operations, Otherwise It Could Fall Into Debt And Face Cashflow Problems.



ANALYSE AND INTERPRETATION OF DATA

RATIO ANALYSIS

Ratio Analysis Is A Quantitative Method Of Gaining Insight Into A Company's Liquidity, Operational Efficiency, And Profitability By Studying Its Financial Statements Such As The Balance Sheet And Income Statement. Ratio Analysis Is A Cornerstone Of Fundamental Equity Analysis.

Types Of Ratio Analysis

The Various Kinds Of Financial Ratios Available May Be Broadly Grouped Into The Following Six Silos, Based On The Sets Of Data They Provide:

1. LIQUIDITY RATIOS

Liquidity Ratios Measure A Company's Ability To Pay Off Its Short-Term Debts As They Become Due, Using The Company's Current Or Quick Assets. Liquidity Ratios Include The Current Ratio, Quick Ratio, And Working Capital Ratio.

2. SOLVENCY RATIOS

Also Called Financial Leverage Ratios, Solvency Ratios Compare A Company's Debt Levels With Its Assets, Equity, And Earnings, To Evaluate The Likelihood Of A Company Staying Afloat Over The Long Haul, By Paying Off Its Long-Term Debt As Well As The Interest On Its Debt. Examples Of Solvency Ratios Include: Debt-Equity Ratios, Debt-Assets Ratios, And Interest Coverage Ratios.

3. PROFITABILITY RATIOS

These Ratios Convey How Well A Company Can Generate Profits From Its Operations. Profit Margin, Return On Assets, Return On Equity, Return On Capital Employed, And Gross Margin Ratios Are All Examples Of Profitability Ratios.

4. EFFICIENCY RATIOS

Also Called Activity Ratios, Efficiency Ratios Evaluate How Efficiently A Company Uses Its Assets And Liabilities To Generate Sales And Maximize Profits. Key Efficiency Ratios Include: Turnover Ratio, Inventory Turnover, And Days' Sales In Inventory.

5. COVERAGE RATIOS

Coverage Ratios Measure A Company's Ability To Make The Interest Payments And Other Obligations Associated With Its Debts. Examples Include The Times Interest Earned Ratio And The Debt-Service Coverage Ratio.

6. MARKET PROSPECT RATIOS

These Are The Most Commonly Used Ratios In Fundamental Analysis. They Include Dividend Yield, P/E Ratio, Earnings Per Share (Eps), And Dividend Payout Ratio. Investors Use These Metrics To Predict Earnings And Future Performance.

To Perform Ratio Analysis Over Time, A Company Selects A Single Financial Ratio, Then Calculates That Ratio On A Fixed Cadence (I.E. Calculating Its Quick Ratio Every Month). Be Mindful Of Seasonality And How Temporarily Fluctuations In Account Balances May Impact Month-Over-Month Ratio Calculations. Then, A Company Analyzes How The Ratio Has Changed Over Time (Whether It Is Improving, The Rate At Which It Is Changing, And Whether The Company Wanted The Ratio To Change Over Time).

a. Liquidity Ratios

Liquidity Ratios Are Calculated To Measure The Short-Term Solvency Of The Business, I.E. The Firm's Ability To Meet Its Current Obligations. These Are Analysed By Looking At The Amounts Of Current Assets And Current Liabilities In The Balance Sheet.

1) Current Ratio

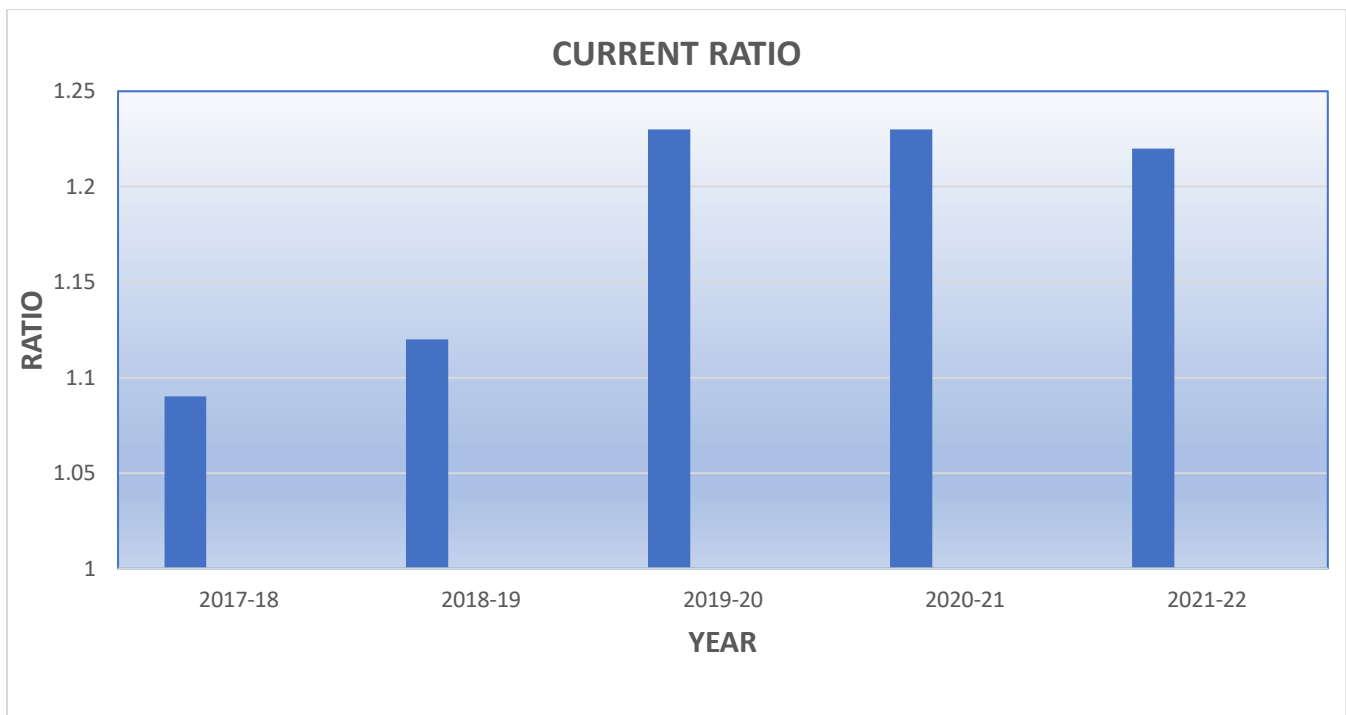
A Current Ratio Is That Liquidity Ratio With Which We Can Identify A Company's Ability To Pay Its Short Term Obligations Or Those That Are To Be Due Within One Year.

Current Ratio = Current Assets \ Current Liabilities

Conventionally, A Current Ratio Of 2:1 Is Considered Satisfactory. This Ratio Can Be Considered As Safe And Conservative Because Even If The Current Assets Get Reduced To Half, Then Also The Company Will Be Able To Clear Off Its Short Term Debts And Liabilities. A Very High Current Ratio Indicates That A Company Is Unable To Utilize Its Assets Efficiently. A Persistent Trend Of Poor Current Ratio (Of Less Than 1) Is A Warning Signal Of Impending Sickness.

Year	Current Assets (Amt)	Current Liabilities(Amt)	Current Ratio (In Times)
2017-18	10668.068	9759.669	1.09
2018-19	11026.936	9875.649	1.12
2019-20	13041.904	10609.414	1.23
2020-21	14085.748	11462.187	1.23
2021-22	15058.757	12370.614	1.22

Table 1 (Amounts In Million Rupees)



Interpretation:

It Can Be Seen From The Above Graph That The Company's Liquidity Position Is Not Ideal As Per The Standard Ratio 2:1 But Still It Is Greater Than 1 Which Indicates The Company's Ability To Pay Off Its Current Obligations. A Higher Ratio Means The Company Can Easily Fund Its Day-To-Day Operations. The More Working Capital A Company Has, The Less It's Likely To Have To Take On Debt To Fund The Growth Of Its Business. In The Years 2017-18 And 2018-19, The Company Has Rs. 1.23 Of Assets To Clear Its Debt Of Rupee 1. The Year 2017-16 Had The Most Unsatisfactory Current Ratio As Compared To The Current Ratios Of Other Years .The Ratio 1.09 Shows There Are Almost Equal Current Assets And Liabilities.

2. Quick Ratio

The Ratio Provides A Measure Of The Capacity Of The Business To Meet Its Short-Term Obligations. It Is Calculated To Serve As A Supplementary Check On Liquidity Position Of The Business And Is Therefore, Also Known As 'Acid-Test Ratio'. While Calculating Quick Assets We Exclude The Inventories. The Quick Assets Are Defined As Those Assets Which Are Quickly Convertible Into Cash.

Quick Ratio = $\frac{\text{Quick Assets}}{\text{Current Assets}}$

Normally, It Is Advocated To Be Safe To Have A Ratio Of 1:1 As Unnecessarily Low Ratio Will Be Very Risky And A High Ratio Suggests Unnecessarily Deployment Of Resources In Otherwise Less Profitable Short-Term Investments

Year	Current Assets(A)	Inventory(B)	Quick Assets (A-B)	Current Liabilities(Amt.)	Quick Ratio (In Ratios)
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2017-18	10668.068	2062.218	8605.85	9759.669	0.88
2018-19	11026.936	2595.112	8431.824	9875.649	0.85
2019-20	13041.904	3126.530	9915.374	10609.414	0.93
2020-21	14085.748	3670.251	10415.497	11462.187	0.91
2021-22	15058.757	4196.971	10861.786	12370.614	0.88

Table 2 Amounts In Million Rupees

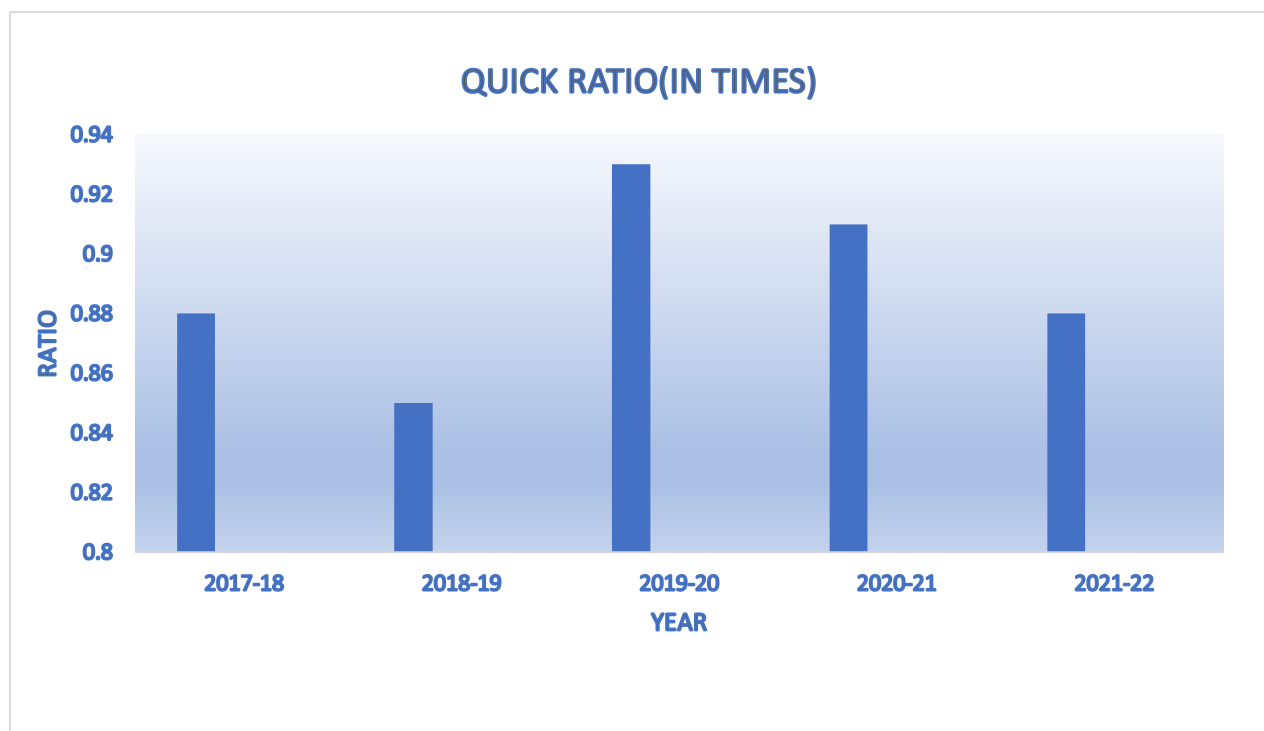


Figure 4

Interpretation

In All The Years, Kbl Has Ratio Less Than 1. A Company Which Has A Quick Ratio Of Less Than 1 May Not Be Able To Fully Pay Off Its Current Liabilities In The Short Term. Higher The Ratio Result, The Better A Company's Liquidity And Financial Health And The Lower The Ratio, The More Likely The Company Will Struggle With Paying Debts.

❖ A Comparison Of Current Assets And Current Liabilities

Positive Working Capital Is The Excess Of Current Assets Over Current Liabilities. In Other Words, When The Net Working Capital Is A Positive Figure, It Is Said That The Firm Has A Positive Working Capital. Working Capital Can Be Negative If A Company's Current Assets Are Less Than Its Current Liabilities.

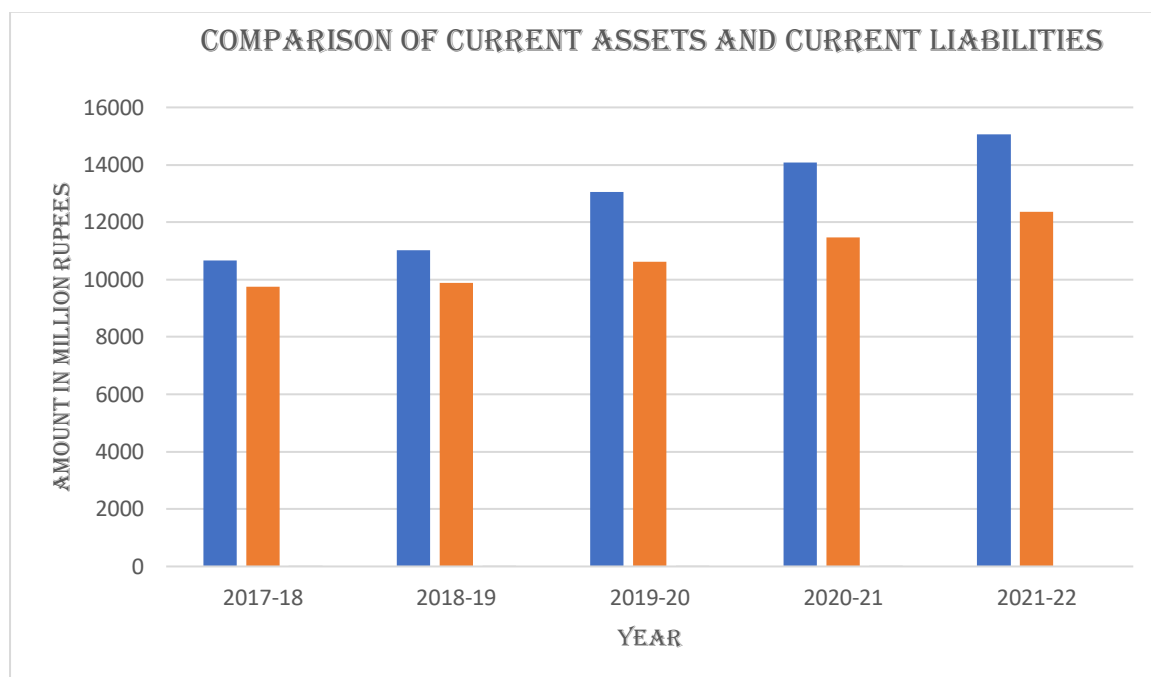


Figure 5 (Amount In Million Rupees)

Interpretation:

The Company Has More Current Assets Than Current Liabilities, Which Means It Has Positive Working Capital. Having Enough Working Capital Ensures That A Company Can Fully Cover Its Short-Term Liabilities As They Come Due In The Next Twelve Months. This Is A Sign Of A Company's Financial Strength

1. Inventory

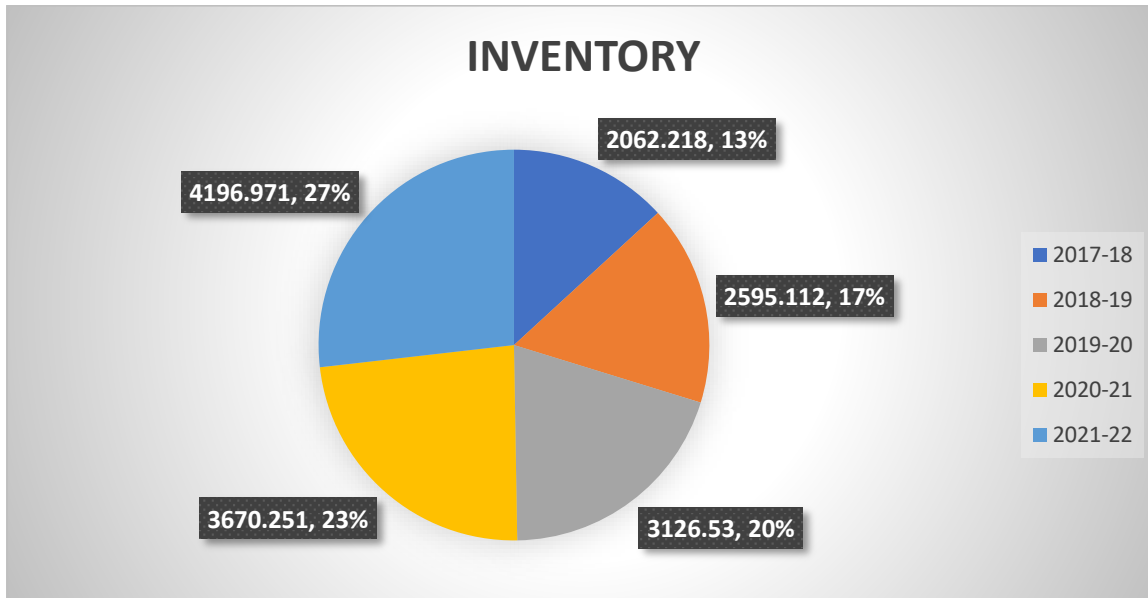


Figure 6 (Amounts In Million Rupees)

Interpretation:

- Advantages Of Higher Side (Profitability):

Ensures Adequate Stockholding And Increases Profitability . The Highest Inventory Was In 2019-20 At 4196.971.

- Advantages Of Lower Side (Liquidity):

Lower Inventory Requires Less Capital But Holding Low Stocks Can Affect Goodwill Adversely If The Demands Of Customers Is Not Met. Lowest Inventory Holding Was In 2017-16 At 2062.218.

- Trade Off Between Profitability And Liquidity:

Using Techniques Like Economic Ordering Quantity (Eoq), Just In Time(Jit) Can Help To Carry Optimum Level Of Inventory.

2. Receivables

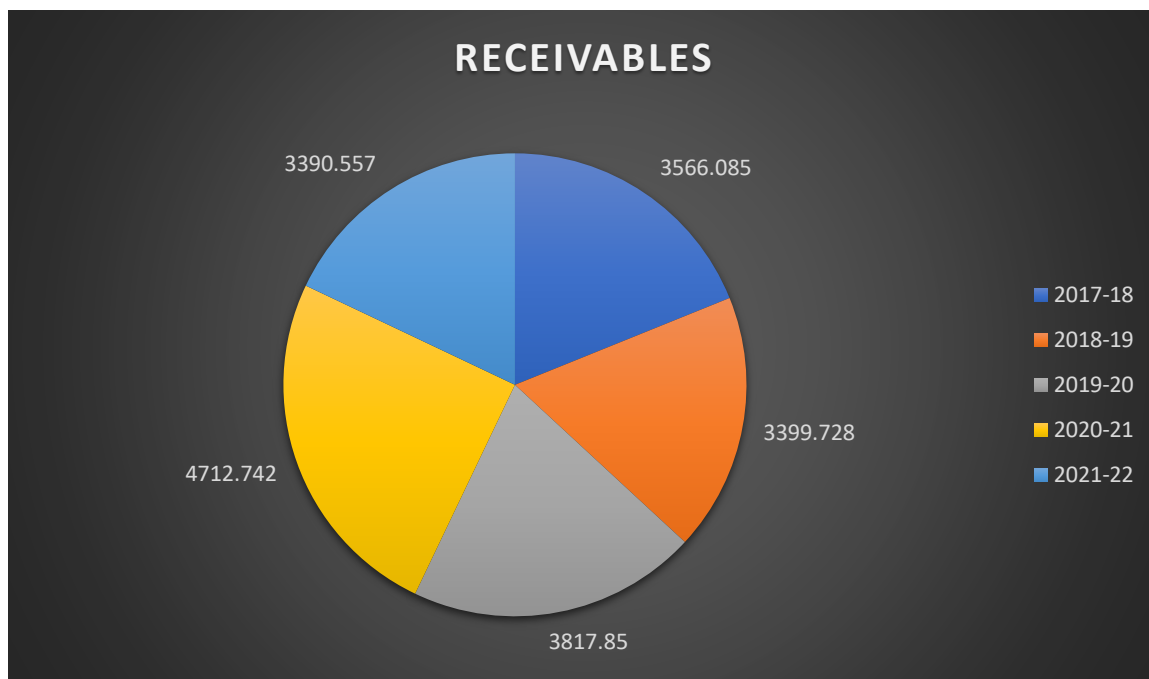


Figure 7(Amounts In Million Rupees)

Interpretation:

- Advantages Of Higher Side (Profitability):

A Higher Credit Period Attracts Customers And Increases Revenue .The Highest Amount Of Receivables Were In 2018-19 At 4712.742.

- Advantages Of Lower Side (Liquidity):

Cash Sales Boosts Liquidity But Does Not Increase Sales And Revenue .The Lowest Receivables Were In 2019-20 At 3390.557.

- Trade Off Between Profitability And Liquidity:

Evaluate Credit Policy And Use Of Debt Management Services Like Factoring Can Help To Achieve Optimum Amount Of Receivables.

3. Payables

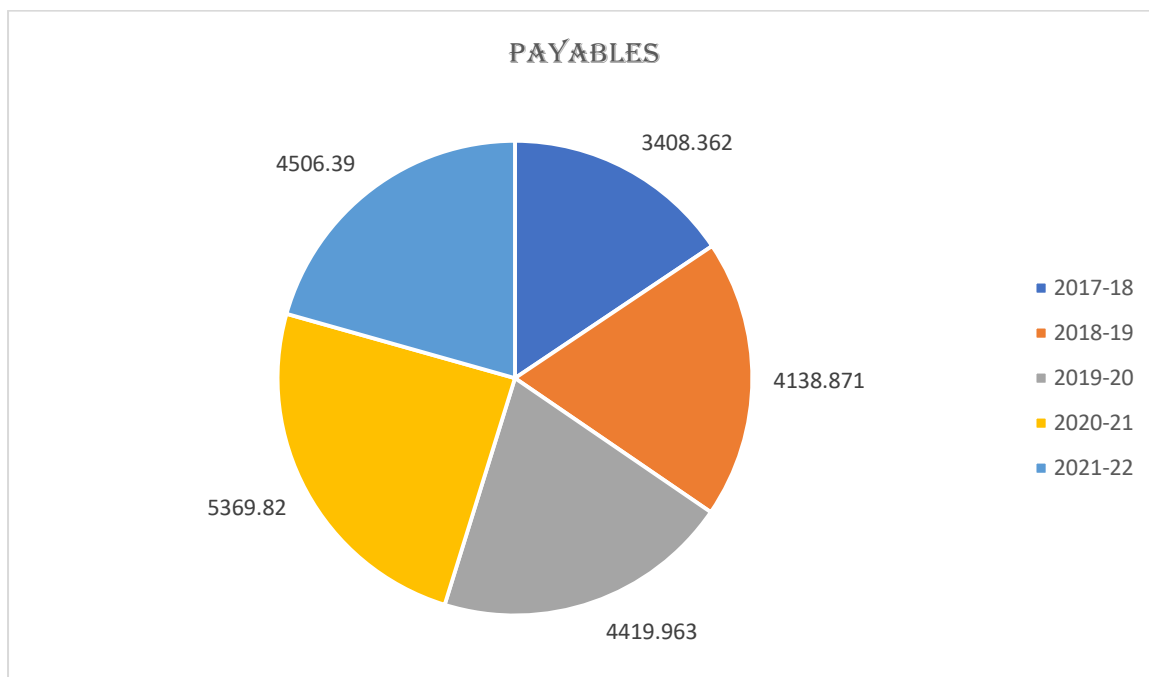


Figure 8 (Amounts In Million Rupees)

Interpretation:

- Advantages Of Higher Side(Profitability):

Capital Can Be Used In Some Other Investment Avenues. Highest Payables Were In 2018-19 At 5369.82.

- Advantages Of Lower Side (Liquidity):

Payables Are Honoured In Time, Improves Goodwill And Is Helpful In Getting Future Discounts .Lowest Payables Were In 2017-16 At 3402.362.

- Trade Off Between Profitability And Liquidity:

Evaluating The Credit Policy And Related Cost.

4. Cash And Cash Equivalents

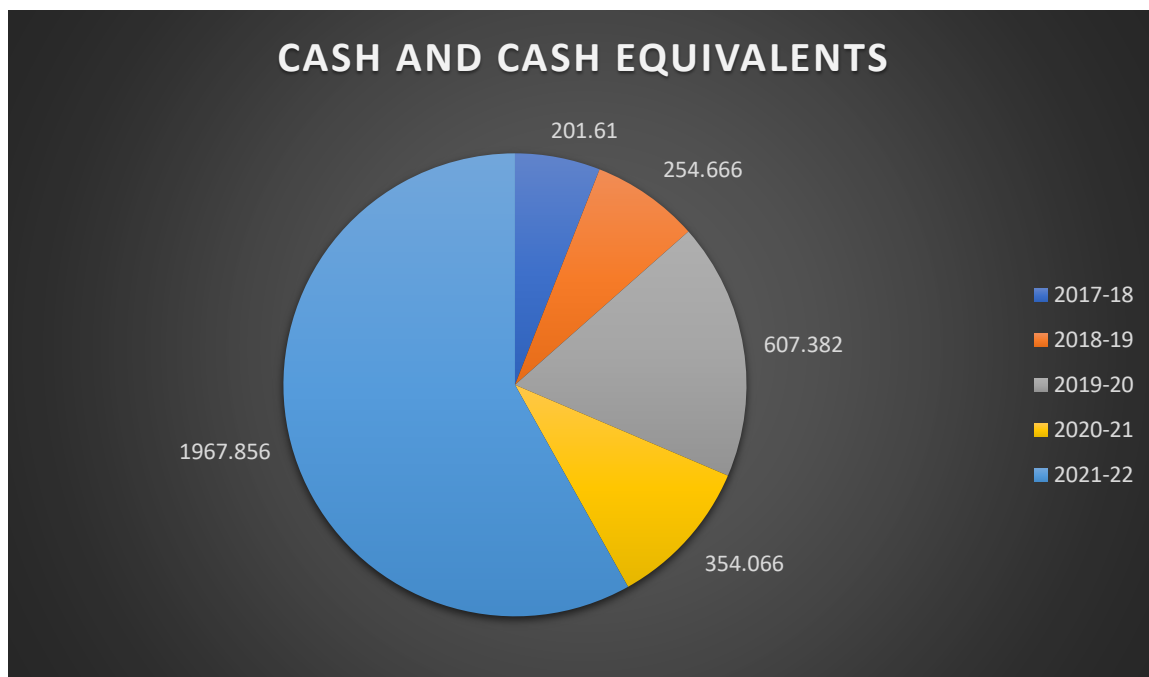


Figure 9 (Amounts In Million Rupees)

Interpretation:

- Advantages Of Higher Side(Profitability)

Payables Are Honoured In Time, Improves The Goodwill And Helps In Getting Future Discounts .Highest Cash Balance Was In 2019-20 At 1967.856.

- Advantages Of Lower Side (Liquidity):

Cash Can Be Invested In Other Investment Avenues Which Can Help To Generate Profits .The Lowest Cash Balance Was In 2017-16 At 254.666.

- Trade Off Between Profitability And Liquidity:

Cash Budgets And Other Cash Management Techniques Can Be Used To Boost And Maintain Adequate Cash Flow.

B. Efficiency Ratios

Efficiency Ratios Are Metrics That Are Used In Analyzing A Company's Ability To Effectively Employ Its Resources, Such As Capital And Assets, To Produce Income. The Following Ratios Are Presented In This Study:

1. Working Capital Turnover Ratio
2. Inventory Turnover Ratio
3. Trade Receivables Turnover Ratio
4. Trade Payables Turnover Ratio

1.Working Capital Turnover Ratio

It Is Defined As The Difference Between The Current Assets And Current Liabilities And Working Capital Turnover Ratio Establishes A Relationship Between The Working Capital And Net Sales Generated By The Business.

$$\text{Working Capital Turnover Ratio} = \text{Net Sales} \div \text{Net Working Capital}$$

Year	Net Sales (Amt.)	Net Working Capital (Amt.)	Ratio (In Times)
2017-18	17212.231	908.369	18.94
2018-19	18230.387	1151.287	15.83
2019-20	19345.627	2432.490	7.95
2020-21	19345.627	2323.561	8.47
2021-22	20970.322	2323.561	7.80

Table 3 (Amounts In Million Rupees)

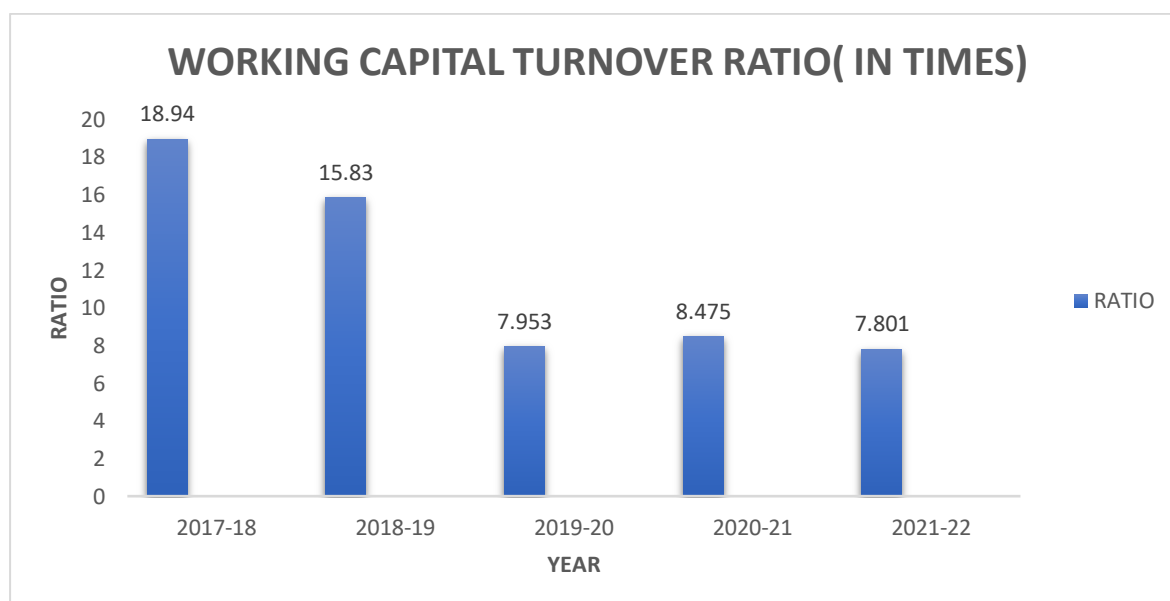


Figure :10

Interpretation:

It Can Be Seen From The Graph That The Ratio Is Continuously Fluctuating. The Year 2017-16 Had The Highest Working Capital Turnover Ratio Amongst The Other Years. A High Turnover Ratio Shows That Management Is Being Very Efficient In Using A Company's Short-Term Assets And Liabilities For Supporting Sales. Over The Years, The Ratio Has Come To 7.801 In 2019-20 Which Signifies A Shortage Of Working Capital In The Company Which Is Not Favourable. A Low Ratio Indicates That A Business Is Investing In Too Many Accounts Receivable And Inventory Assets To Support Its Sales, Which Could Eventually Lead To An Excessive Amount Of Bad Debts And Obsolete Inventory.

2. Inventory Turnover Ratio

It Determines The Number Of Times Inventory Is Converted Into Revenue From Operations During The Accounting Period Under Consideration. It Expresses The Relationship Between The Cost Of Revenue From Operations And Average Inventory.

Year	Net Sales (Amt.)	Opening Inventory (Amt.)	Closing Inventory (Amt.)	Average Inventory (Amt.)	Ratio (In Times)	Inventory Holding Period (Days)
2017-18	17212.231	1876.566	2062.218	1969.391	8.739	41.76
2018-19	18230.387	2062.218	2595.112	1969.391	7.828	46.62
2019-20	19345.627	2595.112	3126.530	2860.821	6.762	53.97
2020-21	22234.860	3126.530	3670.251	3398.39	6.542	55.79
2021-22	20970.322	3670.251	4196.971	3933.611	5.331	68.47

Table 3 (Amounts In Million Rupees)

Average Inventory = $\frac{\text{Opening Inventory} + \text{Closing Inventory}}{2}$

Inventory Turnover Ratio = $\frac{\text{Net Sales}}{\text{Average Inventory}}$

Inventory Holding Period = $\frac{\text{Days In A Year } 365}{\text{Ratio}}$

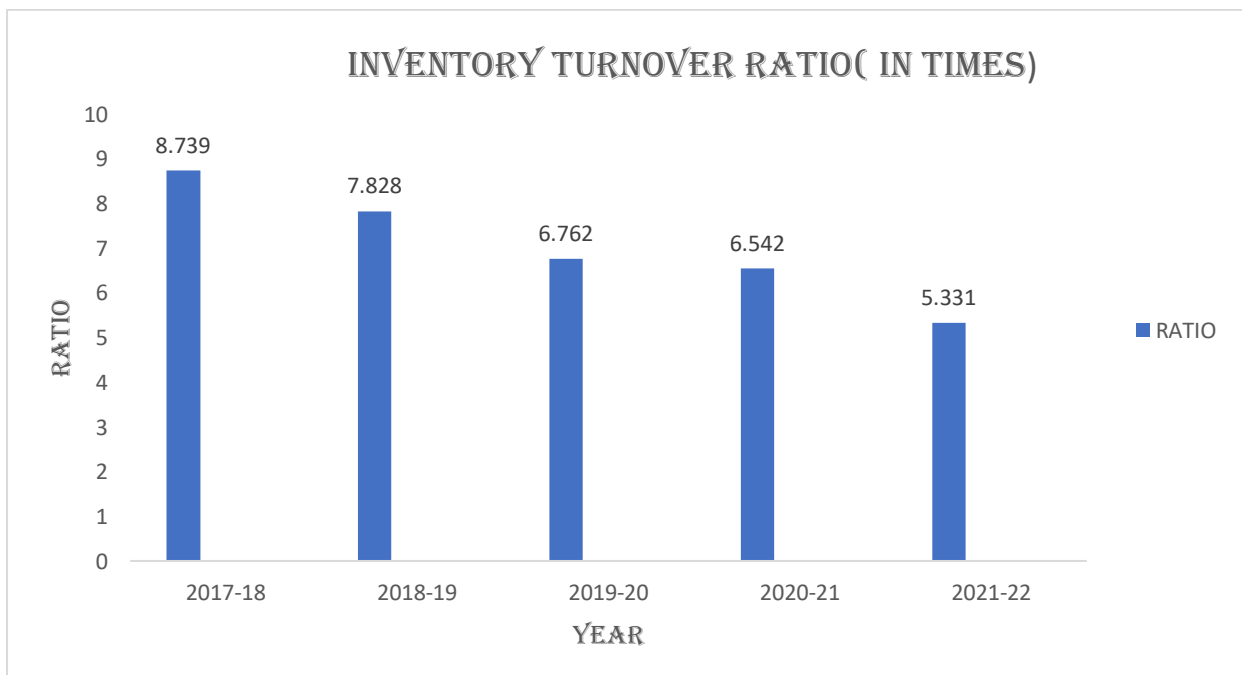


Figure 11

Interpretation:

In The Year 2017-16 The Company Had Inventory Ratio Of 8.739 Which Was The Highest Compared To The Other Years. This Signifies Strong Sales And That The Company Is Able To Sell Its Stocks. In 2019-20, The Ratio Is The Lowest Which Is 5.331. Over The Years, The Ratio Is Declining. This Can Be A Sign Of Poor Selling Or Inventory Policy Which Can Lead To Working Capital Blockage, Piling Up Of Inventory And Quality Deterioration Of Inventory

Inventory Holding Period

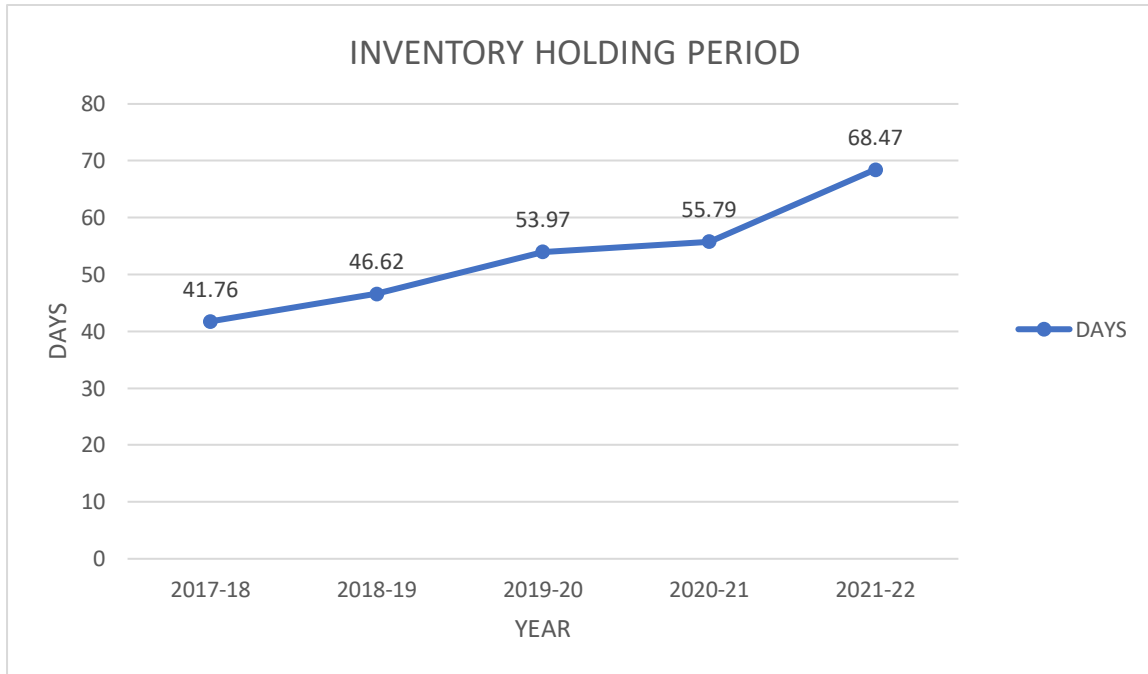


Figure 12

Interpretation :

In The Year 2017-16, The Company Took Approximately 41.76 Days To Clear Its Inventory. A Shorter Period Means That The Inventory Is Moving At A Fast Pace. It Shows Efficient Inventory Management. The Days Taken To Clear The Inventory Has Gradually Increased Over The Years. In 2019-20, The Company Took 68.47 Days To Clear Its Inventory Which Means That The Company Holds The Inventory For A Long Period Of Time And Signifies Poor Management Of Inventory.

3. Trade Receivables Turnover Ratio

The Receivables Turnover Ratio Is An Accounting Measure Used To Quantify A Company's Effectiveness In Collecting Its Accounts Receivable, Or The Money Owed By Customers Or Clients. This Ratio Indicates The Number Of Times The Receivables Are Turned Over And Converted Into Cash In An Accounting Period.

Receivables Turnover Ratio = $\text{Net Sales} \div \text{Average Accounts Receivable}$

Year	Opening Trade Receivables	Closing Trade Receivables	Average Receivables	Net Sales	Ratio In Times	Average Collection Days
2017-18	3946.738	3566.085	3756.411	17212.231	4.582	79.66
2018-19	3566.085	3399.728	3482.906	18230.387	5.234	69.73
2019-20	3399.728	3817.850	3608.789	19345.627	5.360	68.00
2020-21	3817.850	4712.743	4265.296	22234.860	5.212	70.00
2021-22	4712.743	3390.557	4051.650	20970.322	5.175	70.53

Table 5 (Amounts In Million Rupees)

Average Collection Day = Days In A Year 365 \ Ratio

Average Receivables = Opening Receivables + Closing Receivables \ 2

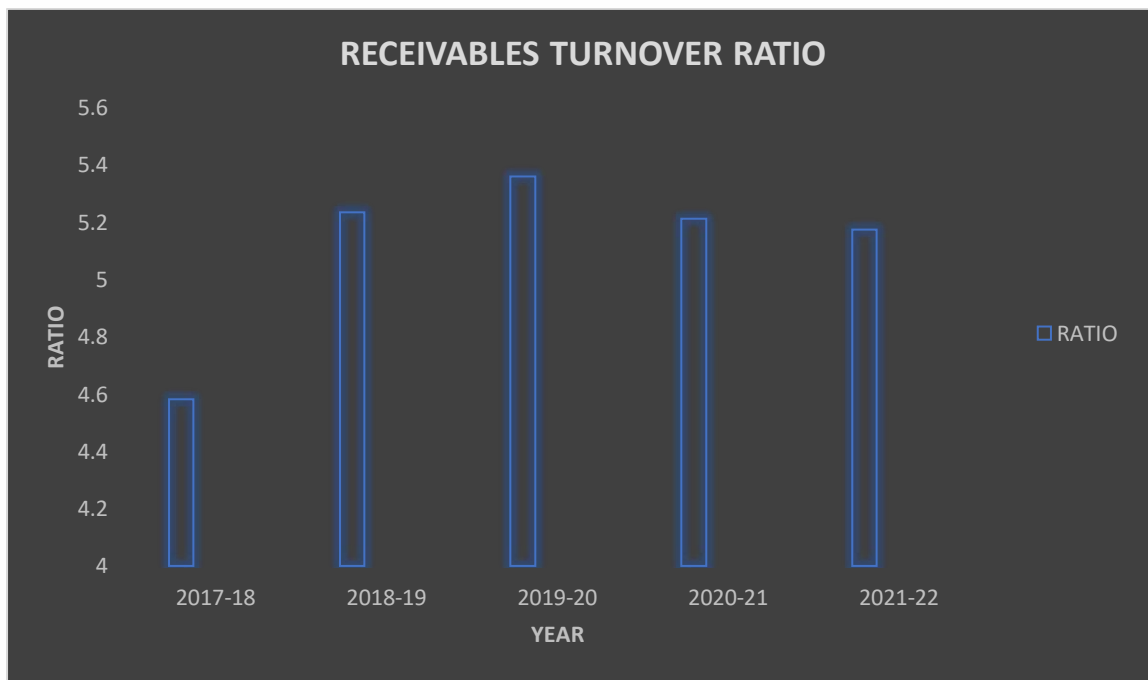


Figure 13

Interpretation:

In The Year 2017-16, The Company Collected Its Average Receivables Approximately 4.582 Times In A Year. A Low Ratio Indicates The Company's Collection Process Is Poor. However, This Ratio Has Increased Steadily And In The Year 2017-18 It Was At 5.36 Which Is The Highest Among The Other Years. A High Ratio Is Desirable As It Indicates That The Company's Collection Of Receivables Is Frequent And Efficient.

❖ Net Operating Cycle

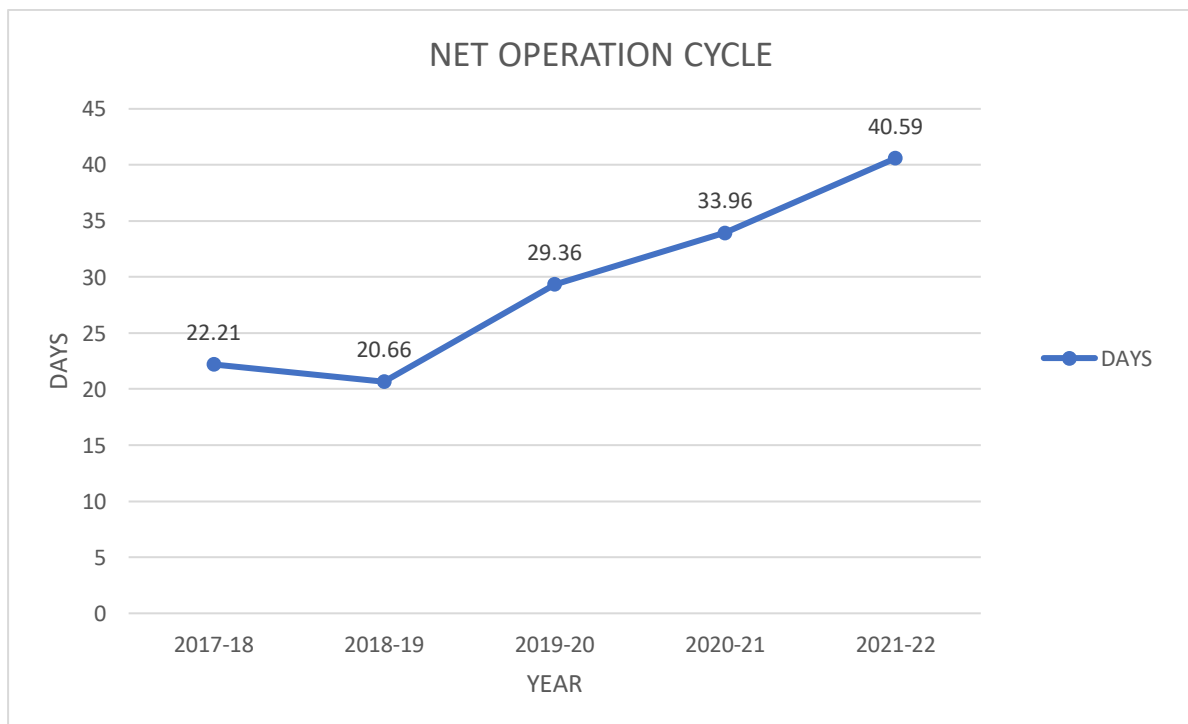
The Net Operating Cycle Or The Cash Conversion Cycle (Ccc) Is A Metric That Expresses The Length Of Time (In Days) That It Takes For A Company To Convert Its Investments In Inventory And Other Resources Into Cash Flows From Sales.

The Net Operating Cycle Can Be Calculated As Follows:

Net Operating Cycle = (Inventory Holding Days + Receivables Collection Days) – Payables Payment Days

Year	Inventory Holding Days (A)	Receivables Collection Days (B)	Payables Payment Days (C)	Gross Operating Cycle (A+B)	Net Operating Cycle (A+B)-C
2017-18	41.76	79.66	99.21	121.42	22.21
2018-19	46.62	69.73	95.59	116.35	20.66
2019-20	53.97	68.00	92.61	121.97	29.36
2020-21	55.79	70.00	91.83	125.79	33.96
2021-22	68.47	70.53	98.41	139	40.59

Table 6 Amount In Million Rupees



Interpretation:

In The Year 2019-20, The Company Takes 40.59 Days To Receive Cash And To Pay The Creditors .This Means That The Cash Is Tied Up For 40.59 Days. In 2018-17, The Company Could Generate Cash In Only 20.66 Days. Having A Shorter Net Operating Cycle Signifies An Effective Management Of Working Capital. Having Longer Operating Cycles Means That The Company Takes A Longer Time For Generating Cash Which Can Pose Liquidity Problems. The Longer The Cash Is Tied Up, The More Money Will Be Needed To Be Borrowed To Run The Day-To-Day Operation .In The Case Of Replisoft Technologies Ltd.Pvt. The Net Operating Cycle Has Lengthened Over The Years Which Indicates That The Cash Is Tied Up In The Operations And Is Not Conducive To A Healthy Working Capital Level. For All Years Replisoft Technologies Pvt. Ltd. Has A Positive Working Cycle. Sometimes, Businesses Can Have A Negative Working Capital Cycle Where They Collect Money Faster Than They Pay Off Bills.

CHANGES IN WORKING CAPITAL

The Excess Of Current Assets Over Current Liabilities Is Referred To As The Company's Working Capital. The Difference Between The Working Capital For Two Given Reporting Periods Is Called The Change In Working Capital.

Benefit

Changes In Working Capital Is Included In Cash Flow From Operations Because Companies Typically Increase And Decrease Their Current Assets And Current Liabilities To Fund Their Ongoing Operations. When A Company Increases Its Current Assets, It's A Cash Outflow: The Company Had To Shell Out Money To Buy The Extra Assets. Likewise, When A Company Increases Its Current Liabilities, It's A Cash Inflow: The Added Liabilities, Such As Short-Term Debt, Provide Money. Changes In Working Capital Simply Shows The Net Affect On Cash Flows Of This Adding And Subtracting From Current Assets And Current Liabilities. When Changes In Working Capital Is Negative, The Company Is Investing Heavily In Its Current Assets, Or Else Drastically Reducing Its Current Liabilities. When Changes In Working Capital Is Positive, The Company Is Either Selling Off Current Assets Or Else Raising Its Current Liabilities.

Origin

This Information Is Found In The Statement Of Cash Flow Of The Company's Financial Statement.

FORMULA

Changes In Net Working Capital = Working Capital (Current Year) – Working Capital (Previous Year)

Or

Change In A Net Working Capital = Change In Current Assets – Change In Current Liabilities.

Statements Of Replisoft Technologies Pvt. Ltd. For The Year 2017-18

Particulars	2017-18	Percentage
Current Assets, Losses And Advances		
Inventory	623.39	42.51
Sundry Debtors	52829	36.02
Cash & Bank Balance	105.58	7.19
Other Current Assets	5837	3.38
Loans And Advances	150.77	10.30
Gross Working Capital(A)	1466.40	100.00
Current Liabilities & Provision		
Current Liabilities	411.21	87.06
Provision	61.90	12.94
Total Current Liabilities And Provision (B)	472.03	100.00
Net Working Capital (A-B)	994.10	

Statements Of Replisoft Technologies Pvt. Ltd. For The Year 2018-19

Particulars	2018-19	Percentage
Current Assets, Losses And Advances		
Inventory	706.99	46.14
Sundry Debtors	543.83	35.44
Cash & Bank Balance	154.90	10.12
Other Current Assets	54.77	3.54
Loans And Advances	71.63	4.67
Gross Working Capital(A)	1532.14	100.00
Current Liabilities & Provision		
Current Liabilities	423.43	82.68
Provision	88.65	17.32
Total Current Liabilities And Provision (B)	512.08	100.00
Net Working Capital (A-B)	1020.06	

Statements Of Replisoft Technology Pvt. Ltd. For The Year 2019-20

Particulars	2019-20	Percentage
Current Assets, Losses And Advances		
Inventory	991.05	49.68
Sundry Debtors	630.62	31.61
Cash & Bank Balance	217.39	10.89
Other Current Assets	90.43	4.53
Loans And Advances	65.32	3.27
Gross Working Capital(A)	1994.81	100.00
Current Liabilities & Provision		
Current Liabilities	534.43	77.52
Provision	154.94	22.47
Total Current Liabilities And Provision (B)	689.37	100.00
Net Working Capital (A-B)	1305.44	

Statements Of Replisoft Technologies Pvt. Ltd. For The Year 2020-21

Particulars	2020-21	Percentage
Current Assets, Losses And Advances		
Inventory	1411.41	59.06
Sundry Debtors	521.80	21.83
Cash & Bank Balance	105.58	12.05
Other Current Assets	104.65	4.37
Loans And Advances	63.62	2.66
Gross Working Capital(A)	2389.59	100.00
Current Liabilities & Provision		
Current Liabilities	661.73	75.34
Provision	216.50	24.65
Total Current Liabilities And Provision (B)	878.23	100.00
Net Working Capital (A-B)	1511.36	

Statements Of Replisoft Pvt.Ltd. For The Year 2021-22

Particulars	2021-22	Percentage
Current Assets, Losses And Advances		
Inventory	1164.56	58.40
Sundry Debtors	482.37	24.18
Cash & Bank Balance	162.31	8.14
Other Current Assets	91.93	4.60
Loans And Advances	93.23	4.68
Gross Working Capital (A)	1994.4	100.00
Current Liabilities & Provision		
Current Liabilities	567.43	83.73

Statement Of Changes In Working Capital Of Replisoft Technologies Pvt . Ltd. For The Year 2017-18

Particulars	Balance		Changes In Working Capital	
	2017	2018	Increase	Decrease
Current Assets				
Inventories	658.25	623.39	—	34.85
Sundry Debtors	709.36	528.29	—	181.06
Cash & Bank Balance	147.95	105.87	—	42.08
Other Current Assets	26.30	58.37	32.06	—
Loans And Advances	226.37	150.77	—	75.59
Total(A)	1768.25	1466.71		
Current Liabilities				
Current Liabilities	515.25	411.21	104.04	—
Provision	12.00	61.09	—	49.09
Total(B)	572.25	472.31	—	—
Working Capital				
(A-B)	1241.00	994.40	—	—
Increasing In Working Capital	—	246.60	246.60	—
Total	1241.00	1241.00	382.70	382.70

Statement Of Changes In Working Capital Of Replisoft Technologies Pvt . Ltd. For The Year 2018-19

Particulars	Balance		Changes In Working Capital	
	2018	2019	Increase	Decrease
Current Assets				
Inventories	623.39	706.99	83.60	—
Sundry Debtors	528.29	543.83	15.53	—
Cash & Bank Balance	105.87	154.90	49.03	—
Other Current Assets	58.37	54.77	—	3.59
Loans And Advances	150.77	71.63	—	79.14
Total(A)	1466.71	1532.14		
Current Liabilities				
Current Liabilities	411.21	423.23	—	12.21
Provision	61.09	88.65	—	27.55
Total(B)	472.31	512.08	—	—
Working Capital				
(A-B)	994.40	1020.05	—	—
Increasing In Working Capital	25.65	—	—	25.65
Total	1020.05	102.05	148.16	148.16

Statement Of Changes In Working Capital Of Replisoft Technologies Pvt. Ltd. For The Year 2019-20

Particulars	Balance		Changes In Working Capital	
	2019	2020	Increase	Decrease
Current Assets				
Inventories	706.99	901.05	284.06	—
Sundry Debtors	543.83	630.62	86.79	—
Cash & Bank Balance	154.90	217.39	62.48	—
Other Current Assets	54.77	90.43	35.66	—
Loans And Advances	71.63	65.32	—	6.31
Total(A)	1532.14	1994.82		
Current Liabilities				
Current Liabilities	423.43	575.62	—	152.19
Provision	88.65	154.94	—	66.29
Total(B)	512.08	730.57		
Working Capital				
(A-B)	1020.05	1264.25	—	—
Increasing In Working Capital	244.19	—	—	244.19
Total	1264.25	1264.25	468.99	468.99

Statement Of Changes In Working Capital Of Replisoft Technologies Pvt. Ltd. For The Year 2020-21

Particulars	Balance		Changes In Working Capital	
	2020	2021	Increase	Decrease
Current Assets				
Inventories	991.05	1411.41	420.36	—
Sundry Debtors	630.62	521.80	—	108.82
Cash & Bank Balance	217.39	288.11	70.72	—
Other Current Assets	90.43	104.65	14.22	—
Loans And Advances	65.32	65.32	—	1.7
Total(A)	1994.57	2389.23		
Current Liabilities				
Current Liabilities				
Provision	575.62	661.73	—	86.11
	154.94	216.50	—	61.56
Total(B)	730.57	878.23	—	—

Statement Of Changes In Working Capital Of Replisoft Technologies Pvt. Ltd For The Year 2021-22

Particulars	Balance		Changes In Working Capital	
	2021	2022	Increase	Decrease
Current Assets				
Inventories	1411.41	1164.54	—	246.85
Sundry Debtors	521.80	482.38	—	39.42
Cash & Bank Balance	288.12	162.32	—	125.80
Other Current Assets	104.65	91.94	—	12.71
Loans And Advances	63.62	93.23	29.61	—
Total(A)	2389.61	1994.44		
Current Liabilities				
Current Liabilities				
Provision	661.73	567.44	94.29	—
	216.51	110.30	106.21	—
Total(B)	878.24	677.74	—	—

CONCLUSION

Working Capital Management Is Important Aspect Of Financial Management. The Study Of Working Capital Management Of Replisoft Technologies Pvt. Ltd. Has Revealed That The Current Ratio Was As Per The Standard Industrial Practice But The Liquidity Position Of The Company Showed An Increasing Trend. The Study Has Been Conducted On Working Capital Ratio Analysis, Working Capital Leverage, Working Capital Components Which Helped The Company To Manage Its Working Capital Efficiency And Affectively.

1. Working Capital Of The Company Was Increasing And Showing Positive. Working Capital Per Year. It Shows Good Liquidity Positions.
2. Positive Working Capital Indicates That Company Has The Ability Of Payments Of Short Terms Liabilities.
3. Working Capital Increased Because Of Increment In The Current Assets Is More Than Increase In The Current Liabilities.
4. Company's Current Assets Were Always More Than Requirement It Affect On Profitability Of The Company.
5. Current Assets Are More Than Current Liabilities Indicate That Company Used Long Term Funds For Short Term Requirement, Where Long Term Funds Are Most Costly Then Short Term Funds.
6. Current Assets Components Shows Sundry Debtors Were The Major Part In Current Aseets It Shows That The Inefficient Receivables Collection Management.
7. In The Year 2017-18 Working Capital Increased Because Decreased The Expenses As Manufacturing Expenses And Decrease The Price Of Raw Material As Increased In The Inflation Rate.

SUGGESTION: -

Suggestion Can Be Use By The Firm For The Betterment Increased Of The Firm After Study And Analysis Of Project Report On Study And Analysis Of Working Capital. I Would Like To Recommend.

1. Comapany Should Raise Funds Through Short Term Sources For Short Term Requirement Of Funds, Which Comparatively Economical As Compare To Long Term Funds.
2. Company Should Take Control On Debtor's Collection Period Which Is Major Part Of Current Assets.
3. Company Has To Take Control On Cash Balance Because Cash Is Non Earning Assets And Increasing Cost Of Funds.

BIBLIOGRAPHY

The Various Books And Replisoft Technologies And Other Sources That Have Been Used To Complete This Project Are Illustrated As Under: -

1. Bibliography References For
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 - II. Annual Report Of Replisoft 2017-2022
 - III. Financial Bulleting Of Replisoft Technologies
 - IV. Financial Report Of Replisoft Technologies
2. From Websites Of [Www. Replisoft Technologies Pvt. Ltd.](http://www.ReplisoftTechnologiesPvt.Ltd)

BCA



KAZI NAZRUL UNIVERSITY

A Project submitted in partial fulfillment of The
requirement for the Degree of Bachelor of
Computer Applications

BILLING SYSTEM

Course Code:-BCAC605

Year of Examination:- 2023

Submitted by

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ROHIT YADAV (KNU2010300129)

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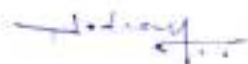
ACKNOWLEDGEMENT

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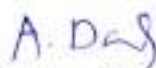
CERTIFICATE FROM PROJECT GUIDE

This is to certify that this project entitled "BILLING SYSTEM" submitted in partial fulfillment of the degree of BCA, Kazi Nazrul University, done by Mr. NADEEM AHMED SK, Roll No. 01 is an authentic work carried out by him/her at Bidhan Chandra College under my guidance. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief and project report is developed according to the "BCA PROJECT & PROJECT REPORT STANDARD 2023, KAZI NAZRUL UNIVERSITY"

Roll no:- 1032006125010008



Signature of the student



Signature of the Guide



CERTIFICATE FROM PROJECT GUIDE

This is to certify that this project entitled " BILLING SYSTEM " submitted in partial fulfillment of the degree of BCA, Kazi Nazrul University, done by Mr. ROHIT YADAV , Roll-No. 04 is an authentic work carried out by him/her at Bidhan Chandra College under my guidance. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief and project report is developed according to the "BCA PROJECT & PROJECT REPORT STANDARD 2023, KAZI NAZRUL UNIVERSITY"

Roll no :- 103200612501004

Rohit Yadav

Signature of the student

A. Das

Signature of the Guide



CERTIFICATE FROM PROJECT GUIDE

This is to certify that this project entitled " BILLING SYSTEM " submitted in partial fulfillment of the degree of BCA, Kazi Nazrul University, done by Mr. PRATIK , Roll No. is an authentic work carried out by him/her at Bidhan Chandra College under my guidance. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief and project report is developed according to the "BCA PROJECT & PROJECT REPORT STANDARD 2023, KAZI NAZRUL UNIVERSITY"

Roll no:- 1032006125010009

Pratik Prasad

Signature of the student

A. Das

Signature of the Guide



CERTIFICATE

The foregoing project report entitled " BILLING SYSTEM " is hereby approved as a creditable project and has been presented in a satisfactory manner to warrant its acceptance as prerequisite to the degree for which it was submitted.

It is understood that by this approval, the undersigned do not necessarily endorse any conclusion drawn or opinion expressed therein, but approve the project for the purpose for which it is submitted.



Head of the Institution
Principal
Bidhan Chandra College
Asansol

SELF CERTIFICATE

This is to certify that the dissertation/project report entitled

" BILLING SYSTEM " is done by me is an authentic work carried out for the partial fulfillment of the requirements for the award of the degree of BCA under the guidance of

Mr. Rajdip Chatterjee . I also certify that that I am aware of the "BCA

PROJECT & PROJECT REPORT STANDARD 2023, KAZI NAZRUL UNIVERSITY" issued by Kazi Nazrul University and this project report is based on that standard. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

Pratik Prasad

Signature of the student

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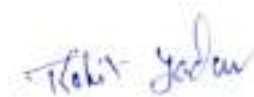
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College Name :

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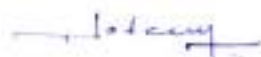
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PROJECT SYNOPSIS

The Grocery shops is enlarging rapidly and their owners are keen to improve every section of their business. Though much attention is paid to digitalizing the billing management, but not many shop owners realize the importance of applying digital billing software in their system. The customer's experience at your shop includes the billing and payment experiences too. Billing software provides some exclusive features that ease up the payment services. It upgrades the billing process and uplift the customer's experience. It enables customers to pay bills more easily. The software can generate detailed bills that eliminate the need to calculate bills separately when the guests wish to know total tax amount in different products. Apart from billing, the software enables you to organize a number of processes. It makes your system more effective and helps you provide faster and easy services to the customers. So many times, customers leave unhappy due to improper billing. When the crowd is vast in the store, it might take you some time to generate manual bills that may leave your customers unsatisfied. This is where the automated billing system can be used. It generates digital bills automatically and allows customers to make quick payments.

- Firstly, Customer's name and phone number is taken to generate bill.
- Bill no. will be generated automatically.
- Product quantity is mentioned to calculate the total amount.
- Total button will sum up the bill and display it in the respective product section along with total tax.
- Generate bill button will generate the bill along with company name.

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1.INTRODUCTION

Billing System Using Python can be very useful within a business environment. Instead of doing manual work for making up a bill at store, which gets tiring and time consuming, you can generate a bill including tax and service charges in just few clicks. When making up a bill manually at a Restaurant may contain some human errors like adding wrong items into the bill or summing up their total also may end up wrong, it also sometimes results into a Bad Impression towards the Store from a Customer. Ideally, user should be able to generate bill without any mistakes and quickly, enabling them to fasten or improve their process. To overcome this problem, we have come up with this project, that is, Billing System Using Python.

The Billing System Using Python is very useful to small business or grocery stores. This helps the owner to fasten the process which is bug free and easy to use. It also has a calculator to ease the use of the user. This project firstly has the list and then adds up the selected items by customer and sums up the total of all items adds tax and service charges and displays total. To perform any other operation like division, multiplication. etc.

Moving on, this billing system project in Python focuses mainly on dealing with customer's payment details with their respective groceries. Also, the system allows the selection of items for calculation and entering the quantities. In an overview of this app, the system user has to select a particular item, enter a certain quantity and generate the total cost. In addition, the system generates the total bill amount with tax. Besides, the system also generates a bill receipt with a reference number. Additionally, the system also contains a mini calculator where the user can perform simple mathematics for calculation too. So with it, this simple project can perform all the important tasks for calculations of the total bill amount of the customer.

Last but not least, a clean and simple GUI is presented with simple colour combinations for a greater user experience while using this billing system project in Python. For its UI elements, a standard GUI library: Tkinter is on board. Presenting a new billing system in Python project which includes a user panel that contains all the essential features to follow up, and a knowledgeable resource for learning purposes.

2. PROJECT DETAILS

Billing System Project is a simple console application designed to demonstrate the practical use of python and its features as well as to generate an application which can be used in any grocery store, shops, cafes etc. for billing to the customer. There is always a need of a system that will perform easy billing calculation in a grocery store. This system will reduce the manual operation required to maintain all the bills. And also generates bill receipt with unique bill number.

2.1 System Requirements:

Here we are including the software's and hardware's used for developing the project and implementing the project.

A. Software Requirements

1. Python 3.9 or VS Code
2. Notepad
3. Any OS

B. Hardware Requirements

1. 2 GB RAM or above
2. Intel i3 Processor or above
3. 32 Bit System or above

2.2 Proposed System:

Since many grocery shops make bills for their customers manually with a pen paper. This sometimes results into an error of total or wrong items added or some items missing in bill or extra items added. This may end up by building up a bad impression of customer towards the Store. So, to overcome this problem we've come up with this helpful project named Billing System Using Python. We all love going to cafes or restaurants but when it takes time for them to make a bill or if they Make wrong bill then it's time consuming. So, to avoid all such chaos our project will help in All possible terms.

2.3 Definitions and Theories:

The Bill Management System helps the Store manager to manage the store more effectively and efficiently by computerizing product ordering, billing and inventory control. There is always a need of a system that will perform easy billing calculation in a grocery store. This system will reduce the manual operation required to maintain all the bills. And also generates bill receipt with unique bill number.

Python :

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

Python was developed by Guido van Rossum in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.

Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, SmallTalk, and Unix shell and other scripting languages.

Python is copyrighted. Like Perl, Python source code is now available under the GNU General Public License (GPL).

Python is now maintained by a core development team at the institute, although Guido van Rossum still holds a vital role in directing its progress.

PYTHON'S FEATURES

- 1 Easy-to-learn – Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.
- 1 Easy-to-read – Python code is more clearly defined and visible to the eyes.
- 1 Easy-to-maintain – Python's source code is fairly easy-to-maintain. A
- 1 broad standard library – Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh. Interactive
- 1 Mode – Python has support for an interactive mode which allows interactive testing and debugging of snippets of code. Portable – Python
- 1 can run on a wide variety of hardware platforms and has the same interface on all platforms.
- 1 Extendable – You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- 1 Databases – Python provides interfaces to all major commercial databases.
- 1 GUI Programming – Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- 1 Scalable – Python provides a better structure and support for large programs than shell scripting.

4.Data Flow Diagram:

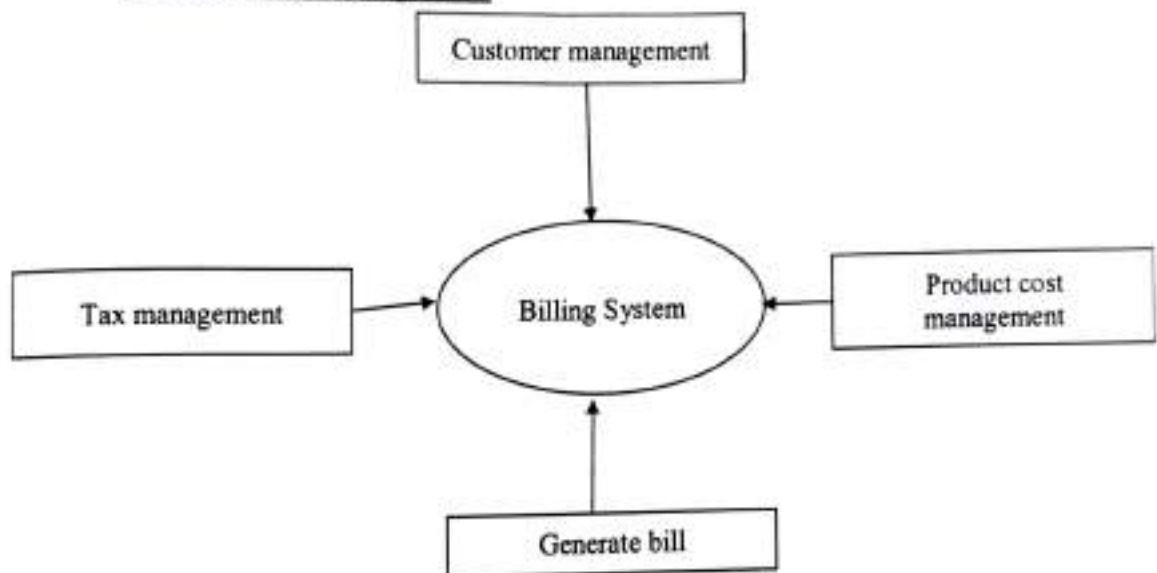


Fig 1 Level Zero DFD of Billing System

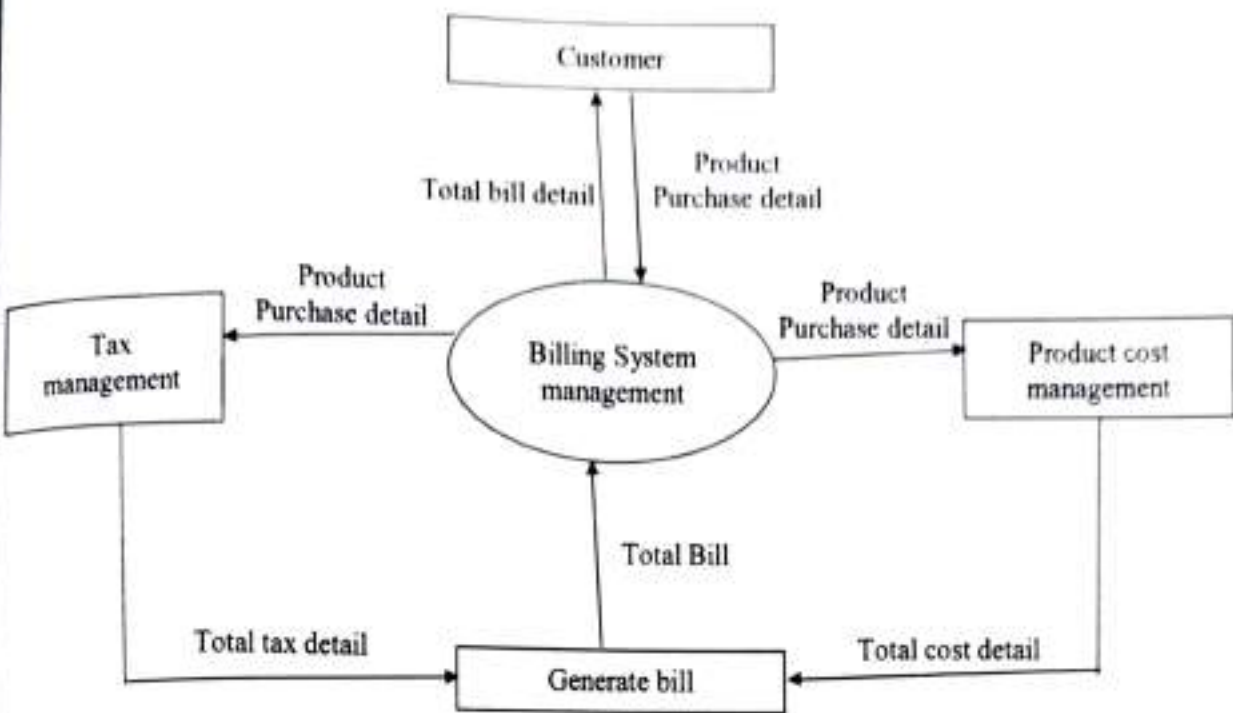


Fig 2 Level One DFD of Billing System

ENTITY - RELATIONSHIP DIAGRAM MODEL (ERD):

Based upon the proposed modules and sub modules the tables with their attributes and designed and the relationship between them is sketched with the help of an ERD. E-R diagram can express the overall logical structure of the database graphically. ERD maintains all the cardinality of the entity.

Let us now learn how the ER Model is represented by means of an ER diagram. Any object, for example, entities, attributes of an entity, relationship sets, and attributes of relationship sets, can be represented with the help of an ER diagram.

Entity :

Entities are represented by means of rectangles. Rectangles are named with the entity set they represent.

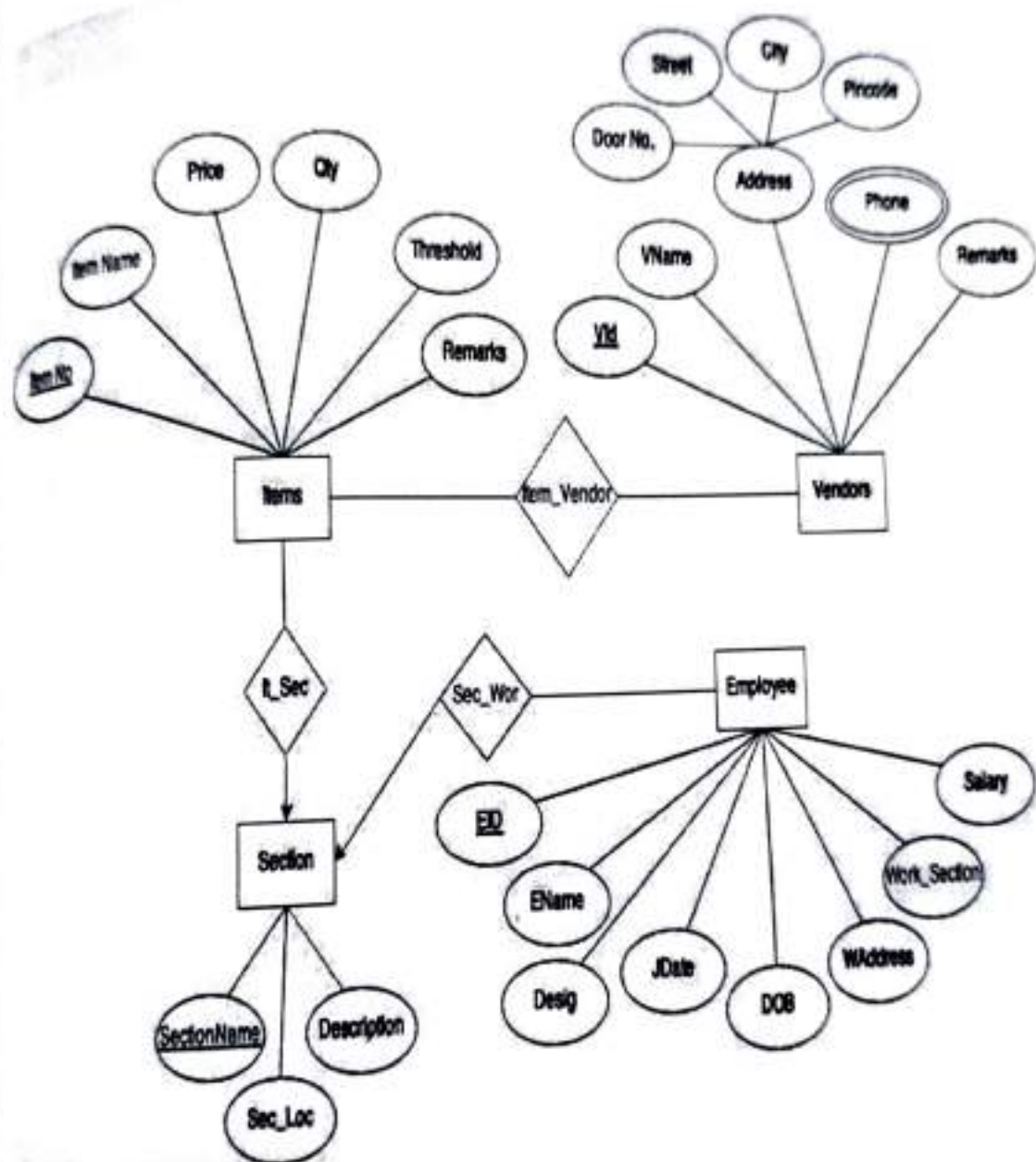
Attributes :

Attributes are the properties of entities. Attributes are represented by means of ellipses. Every ellipse represents one attribute and is directly connected to its entity (rectangle).

Relationships :

Relationships are represented by diamond-shaped box. Name of the relationship is written inside the diamond-box. All the entities (rectangles) participating in a relationship, are connected to it by a line.

ER Diagram:



Waterfall Model:

The Waterfall Model was the first Process Model to be introduced. It is also referred to as a **linear-sequential life cycle model**. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

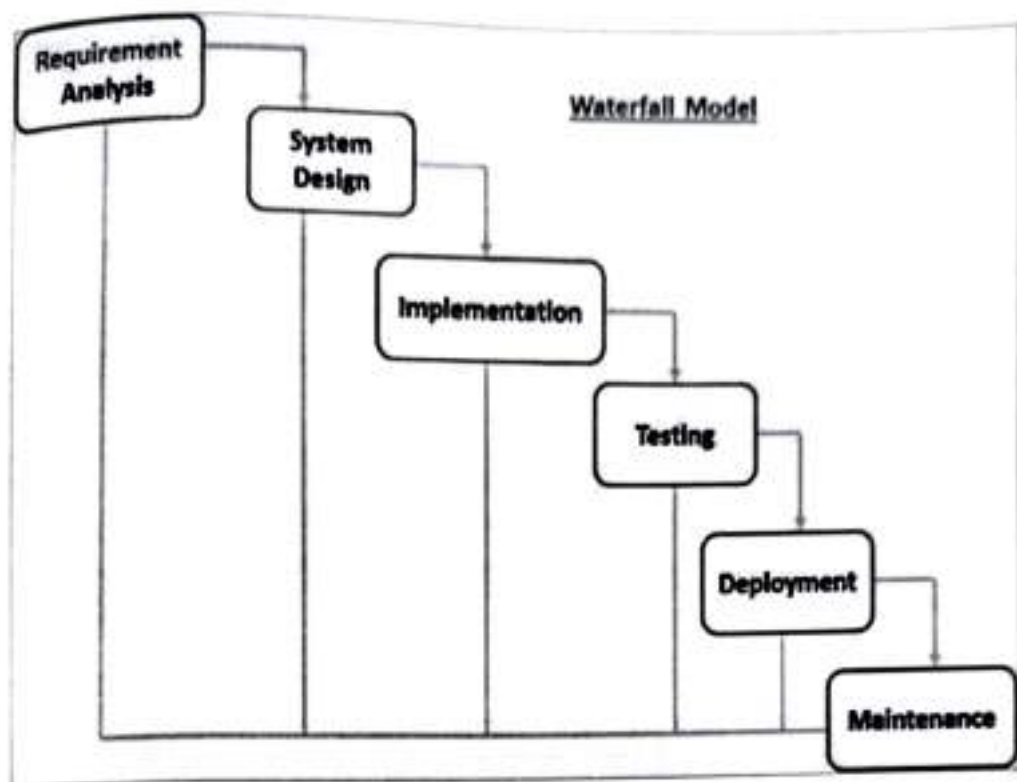
The Waterfall model is the earliest SDLC approach that was used for software development.

The waterfall Model illustrates the software development process in a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap.

Waterfall Model - Design :

Waterfall approach was first SDLC Model to be used widely in Software Engineering to ensure success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate phases. In this Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially.

The following illustration is a representation of the different phases of the Waterfall Model.



The sequential phases in Waterfall model are –

Requirement Gathering and analysis –

All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.

System Design – The requirement specifications from first phase are studied in this phase and the system design is prepared. This system design helps in specifying hardware and system requirements and helps in defining the overall system architecture.

Implementation – With inputs from the system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality, which is referred to as Unit Testing.

Integration and Testing – All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

Deployment of system – Once the functional and non-functional testing is done; the product is deployed in the customer environment or released into the market.

Maintenance – There are some issues which come up in the client environment. To fix those issues, patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards (like a waterfall) through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name "Waterfall Model". In this model, phases do not overlap.

Waterfall Model - Application :

Every software developed is different and requires a suitable SDLC approach to be followed based on the internal and external factors. Some situations where the use of Waterfall model is most appropriate are :-

- ❑ Requirements are very well documented, clear and fixed.
- ❑ Product definition is stable.
- ❑ Technology is understood and is not dynamic.
- ❑ There are no ambiguous requirements.
- ❑ Ample resources with required expertise are available to support the product.
- ❑ The project is short.

Waterfall Model - Advantages

The advantages of waterfall development are that it allows for departmentalization and control.

A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one.

Development moves from concept, through design, implementation, testing, installation, troubleshooting, and ends up at operation and maintenance.

Each phase of development proceeds in strict order.

Waterfall Model - Disadvantages

The disadvantage of waterfall development is that it does not allow much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-documented or thought upon in the concept stage.

6.Outcomes of the project

As we already said, businesses use billing systems to generate automated bill to their customers or partners and receive payments. Consequently, the billing system helps companies to improve performance and reduce errors by automating document preparation and other routine tasks. One of the most important benefits of billing software is that it makes your payment and calculation processing easier. Other than that, it allows you to collect details of regular customer and help you with the tax process. The software will generate bill along with the tax included in particular items.

7. Working Flow of the Project

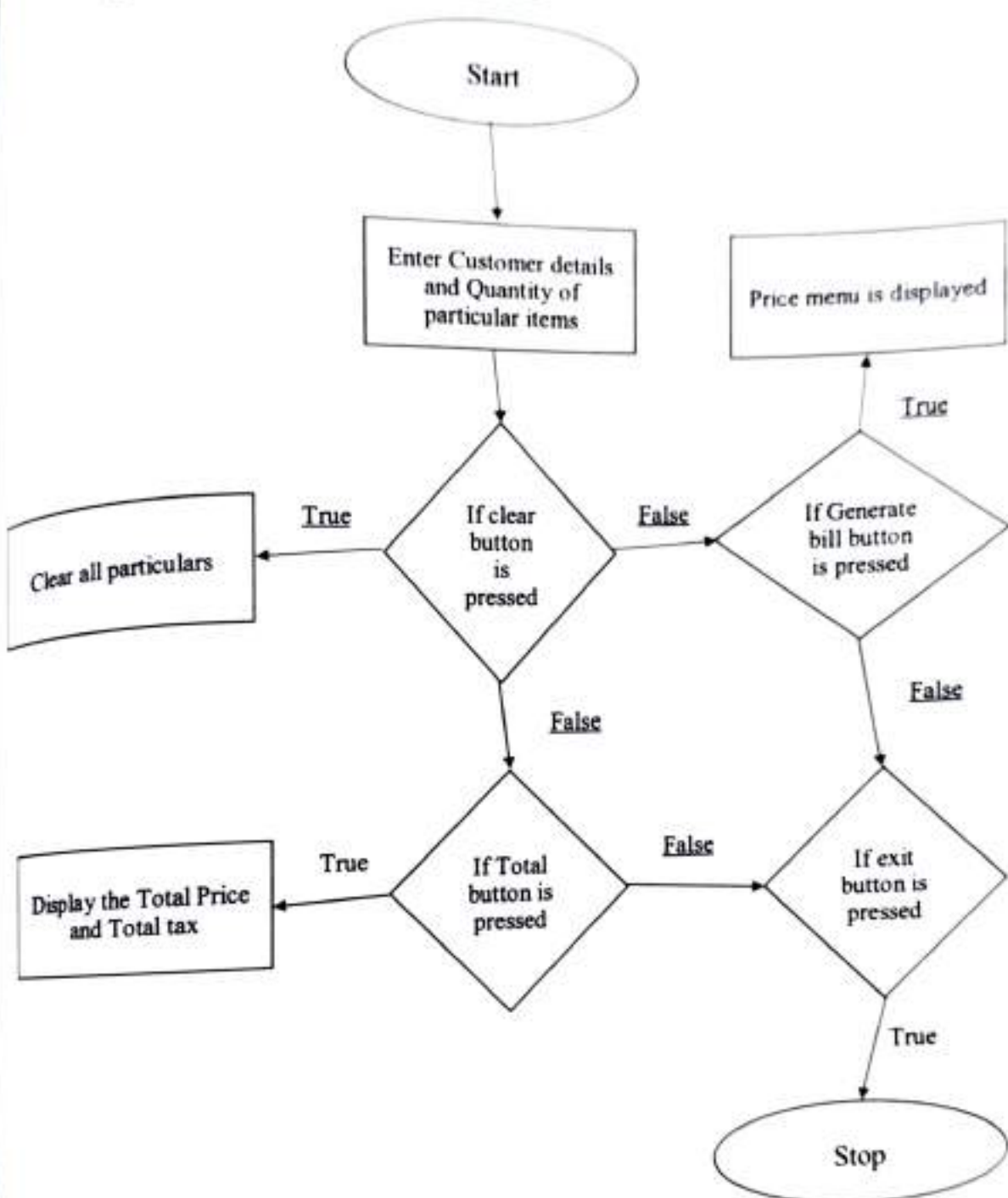


Fig 3 Flow Diagram

Features of a Billing SYSTEM Software

Every business uses different billing software for refining their accounting solutions. Your software should manage and contain the following features:

1. **Instant New Invoices-** A good software automatically analysis your credit/debit tables in a professional manner. It should easily cite and combine various schemes, timesheets, and consumer reports.
2. **Individual Customer Tracking-** Creates a single database that will easily segregate a clients purchases, relevant files along with a clean filter search option for effortless accessibility.
3. **Quick Receiving & Information Transferring-** A central server facility that will help you send all the latest updates and information to customers. All previous records shall be readily made available inside its database.
4. **Colour-Coded Templates-** A readily defined colour-coded templates help in quickly identifying the type of invoice or circular it is. It will help in personalising accounts along with the benefit of saving time.
5. **Credit Card Assessment-** A modern billing sequence should produce easy invoices via quickly processing credit cards. It makes the billing process recurring and amplifies consumer supervision. Newer software enables auto-billing for credit cards, so the patron doesn't miss their older debts.
6. **Generate Tax Reports-** A smart software solution should eliminate the needs for any manual or different apps. It should easily summarise and present you with an accurate tax report depending on years of business.

Why do businesses need Billing SYSTEM Software?

- It eliminates the manual data entry and calculation process.
- Helps in devising the accuracy of all accounting records.
- Diminishes human errors and keeps transactions explicit.
- Helps in creating monetary calendars and reminders.
- Manages staff hours, attendance, and salary records.
- Also available free of cost for smaller businesses.
- Helps to segregate different invoices.
- Will enhance your business with sophisticated and effortless features.
- Avoids minimal issues like hidden prices and cover every element.
- Helps in future business analysis and decision making.
- Saves a lot of time and money.
- It also encourages faster payments.

Advantages of Billing SYSTEM Software

- You can curate accurate and professional looking invoices with multiple templates.
- Reduces material costing that comes with manual billing and filing.

- Automatic update features keep business deals, changes, and offers in the loop within customers.
- Retail billing software helps small businesses to penetrate offline and online much conveniently.
- Effective communication is established without constant personal calls for a reminder of payments.
- The instant invoice helps the customers understand a clear breakup of charges and deductions involved in that particular transaction.
- Within the touch of your fingers, your software and records can be checked and maintained via mobile devices; even while you are away.
- Combined with external software that will help in smoother tracking of the business.
- Quicker scanning via barcodes or offer codes helps in avoiding the use of calculators, hence, increasing unnecessary queues in the shop.
- Helps in GST Tax calculation.

Disadvantages of Billing SYSTEM Software

- It is not cost-effective for small scale business owners.
- Invoices can go into spam folders due to flagging by email servers; that leads to delay of payments.
- Reaching offline customers who do not access the internet makes the process difficult.
- Automatic invoices and management system reduces human mediation, which reduces personal touch for the business.

```

from tkinter import *
import random

class Bill App:
    def __init__(self, root):
        self.root = root
        self.root.geometry("1300x700+0+0")
        self.root.maxsize (width 1280, height = 700)
        self.root.minsize (width 1280, height 700) self.root.title("Billing Software")

        **Variables
        self.cus_name = StringVar() self.c_phone StringVar()

        #For Generating Random Bill Numbers
        x = random.randint(1000,9999) self.c_bill_no = StringVar()

        #Setting Value to variable
        self.c_bill_no.set(str(x))

        self.bath soap= IntVar()
        self.face_cream IntVar() self.face_wash = IntVar()
        self.hair spray = IntVar()
        self.body lotion = IntVar()
        self.rice IntVar()
        self.daal= IntVar()
        self.food oil = IntVar()
        self.wheat IntVar()
        self.sugar IntVar()
        self.maza IntVar()
        self.coke IntVar())
        self.frooti = IntVar() self.nimko IntVar()
        self.biscuits = IntVar()
        self.total cosmetics StringVar()
        self.total grocery StringVar() self.total other StringVar()
        self.tax_cos = StringVar()
        self.tax_groc StringVar()

```

```

self.tax_other = StringVar()
bg_color="#074463" fg_color "white"
lbl_color = 'white'
#Title of App
title Label(self.root, text "Billing Software", bd = 12, relief GROOVE, fg
fg_color, bg bg_color, font ("times new roman", 38, "bold"), pady = 3).pack(fill = X)
*****Customers Frame---#
F1 = LabelFrame(text = "Customer Details", font = ("time new roman", 12, "bold"), fg
"gold", bg bg_color, relief GROOVE, bd = 10) F1.place(x 0,y= 80, relwidth = 1)
#=====Customer Name=====
cname_1b1
Label (F1, text="Customer
Name", bg
bg_color, fg
fg_color, font=("times new roman", 15, "bold")).grid(row= 8, column = 8,padx = 10, pady
5)
cname_en Entry(F1, bd = 8,relief = GROOVE, textvariable = self.cus_name) cname_en.grid(row=8,
column = 1,ipady = 4, ipadx = 38, pady = 5)
Customer Phone*=====
cphon_1b1 Label(F1, text = "Phone No", bg bg_color, fg fg_color,
font new roman", 15, "bold")).grid(row 8, column = 2, padx = 20) cphon_en Entry (F1,bd 8,relief
GROOVE, textvariable self.c_phone) cphon_en.grid(row 8, column= 3,ipady = 4, ipadx = 30, pady = 5)
*****Customer Bill No
cbill_lbl Label (F1, text "Bill No.", bg bg_color, fg fg_color, font
("times new roman", 15, "bold"))
cbill_lbl.grid(row= 8, column = 4, padx = 20)
cbill_en Entry (F1, bd 8,relief = GROOVE, textvariable self.c_bill_no) cbill_en.grid(row= 0, column
5,ipadx = 30, ipady = 4, pady = 5)

```



```

*****Bill Search Button *****=H
self.btn.Button(F1, text="Enter", bd=7, relief=GROOVE, font=("times new 12", "bold"), bg=bg_color, fg=fg_color)
self.btn.grid(row=0, column=6, ipady=5, padx=60, ipadx=10, pady=5)

www.Cosmetics Frame.**
f2.LabelFrame(self.root, text="Cosmetics", bd=10, relief=GROOVE, bg=bg_color, fg="gold", font=("times new roman", 13, "bold"))
f2.place(x=5, y=180, width=325, height=380)

roman",

=====Frame Content
bath_lbl.Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=bg_color, text="Bath Soap")
bath_lbl.grid(row=8, column=0, padx=18, pady=20) bath_en.Entry(F2, bd=8, relief=GROOVE, textvariable=self.bath_soap)
bath_en.grid(row=0, column=1, ipady=5, ipadx=5)

*****Face Cream
face_lbl.Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=bg_color, text="Face Cream")
face_lbl.grid(row=1, column=0, padx=10, pady=20)
face_en.Entry(F2, bd=8, relief=GROOVE, textvariable=self.face_cream) face_en.grid(row=1, column=1, ipady=5, ipadx=5)

*****Face Wash
wash_lbl.Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=bg_color, text="Face Wash")
wash_lbl.grid(row=2, column=0, padx=10, pady=20) wash_en.Entry(F2, bd=8, relief=GROOVE, textvariable=self.face_wash) wash_en.grid(row=2, column=1, ipady=5, ipadx=5)

*****Hair Spray
hair_lbl.Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=bg_color, text="Hair Spray")
hair_lbl.grid(row=3, column=0, padx=10, pady=20) hair_en.Entry(F2, bd=8, relief=GROOVE, textvariable=self.hair_spray)
hair_en.grid(row=3, column=1, ipady=5, ipadx=5)

```

.....Body Lotion

```
lot_lbl = Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=
```

```
bg_color, text="Body Lotion")
```

```
lot_lbl.grid(row=4, column=0, padx=10, pady=20)
```

```
lot_en = Entry(F2, bd=8, relief=GROOVE, textvariable=self.body_lotion)
```

```
lot_en.grid(row=4, column=1, ipady=5, ipadx=5)
```

```
Grocery Frames F2 = LabelFrame(self.root, text="Grocery", bd=10, relief=GROOVE, bg=
```

```
bg_color, fg="gold", font=("times new roman", 13, "bold"))
```

```
F2.place(x=338, y=180, width=325, height=380)
```

.....Frame Content

```
rice_1b1 = Label(F2, font=("times new roman", 15, "bold"), fg=
```

```
lbl_color, bg=
```

```
bg_color, text="Rice")
```

```
rice_lbl.grid(row=8, column=8, padx=10, pady=28) rice_en = Entry(F2, bd=8, relief=GROOVE,
```

```
textvariable=self.rice) rice_en.grid(row=0, column=1, ipady=5, ipadx=5)
```

```
oil_lbl = Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=
```

```
bg_color, text="Food 011")
```

```
oil_lbl.grid(row=1, column=0, padx=10, pady=20) oil_en = Entry(F2, bd=8, relief=GROOVE,
```

```
textvariable=self.food_oil) oil_en.grid(row=1, column=1, ipady=5, ipadx=5)
```

```
daal_1b1 = Label(F2, font=("times new roman", 15, "bold"), fg=lbl_color, bg=bg_color, text="Daal") =
```

```
daal_lbl.grid(row=2, column=0, padx=18, pady=20) daal_en = Entry(F2, bd=8, relief=GROOVE,
```

```
textvariable=self.daal) daal_en.grid(row=2, column=1, ipady=5, ipadx=5)
```

```

=====
wheat_lbl Label (F2, font = ("times new roman", 15, "bold"), fg = lbl_color, bg
bg_color, text = "Wheat")
wheat_lbl.grid(row= 3, column= 0, padx 10, pady = 20)
wheat_en Entry (F2, bd = 8, relief = GROOVE, textvariable self.wheat)
wheat_en.grid(row=
3, column
= 1, pady
5, padx = 5)
sugar_lbl Label (F2, font = ("times new roman", 15, "bold"), fg = lbl_color, bg
bg_color, text = "Sugar")
sugar_lbl.grid(row 4, column = 0, padx 10, pady = 20)
N
sugar_en Entry (F2, bd 8, relief= GROOVE, textvariable sugar_en.grid(row= 4, column= 1, pady =
5, padx = 5)
---Other Stuff=***
F2 = LabelFrame(self.root, text "Others, bd 10, relief
bg_color, fg = "gold", font ("times new roman", 13, "bold")) F2.place(x 655, y 180, width 325, height
380)
=====Frame Content
maza_lbl Label (F2, font ("times new roman", 15, "bold"), fg = lbl_color, bg
bg_color, text = "Maaza")
maza_lbl.grid(row= 0, column= 0, padx= 18, pady = 20)
maza_en Entry (F2, bd = 8, relief = GROOVE, textvariable = self.maza) maza_en.grid(row= 8, column=
1, pady = 5, padx = 5)
cock_1b1 Label(F2, Font ("times new roman", 15, "bold"), fg 1b1_color, bg
bg_color, text = "Coke")
cock_1b1.grid(row=
1, column
= 0, padx
= 10, pady = 20)
cock_en - Entry (F2, bd 8, relief GROOVE, textvariable = self.coke)

```



```
cock_en.grid(row  
1, column  
= 1, ipady 5, ipadx = 5)  
self.sugar)  
GROOVE, bg  
bg_color, text = "Frooti")  
frooti_lbl Label(F2, font ("times new roman", 15, "bold"), fg lbl_color, bg  
frooti_lbl.grid(row 2, column = 0, padx= 10, pady = 20) Frooti en Entry (F2, bd = 8, relief GROOVE,  
textvariable = self.frooti  
)
```

```

root_en.grid(row= 2, column= 1, ipady= 5, ipadx= 5)
cold_lb1 = Label (F2, font = ("times new roman",15,"bold"), fg = lbl_color,bg
bg_color,text = "Nimkos")
cold_lb1.grid(row= 3,column= 0,padx = 10, pady = 20)
cold_en = Entry(F2, bd = 8, relief = GROOVE, textvariable = self.nimko) cold_en.grid(row= 3, column =
1,ipady = 5, ipadx = 5)
bis_lb1 = Label (F2, font =("times new roman", 15, "bold"), fg = lb1_color, bg
bg_color, text "Biscuits")
bis_lb1.grid(row= 4, column 8, padx= 18,pady = 20)
bis_en = Entry(F2,bd = 8, relief = GROOVE, textvariable = self.biscuits)
bis_en.grid(row= 4,column = 1,ipady = 5,ipadx = 5)
F3 Label (self.root, bd = 10, relief = GROOVE)
F3.place(x960,y 188,width 325,height = 380)
=Label (F3,text = "Bill Area", font = ("Lucida", 13, "bold"),bd=
bill_title
7, relief = GROOVE) bill_title.pack(fill = X)
scroll_y Scrollbar(F3, orient = VERTICAL)
self.txt = Text (F3,yscrollcommand = scroll_y.set)
scroll_y.pack(side RIGHT, fill = Y)
scroll_y.config(command = self.txt.yview)
self.txt.pack(fill = BOTH, expand = 1)
F4 LabelFrame(self.root,text = '8111 Menu, bd 18,relief = GROOVE, bg= bg_color, fg = "gold", font =
("times new roman", 13, "bold"))
F4.place(x = 0, y = 560, relwidth= 1, height = 145)

```

```
cosm_1b1 = Label (F4, font ("times new roman", 15, "bold"), fg = 1b1_color, bg  
    , text "Total Cosmetics")  
cosm_1b1.grid(row= 0, column=0, padx = 18, pady = 0)
```

```
cosm_en = Entry (F4, bd = 8, relief = GROOVE, textvariable = self.total_cosmetics)  
cosm_en.grid(row = 8, column = 1, ipady = 2, ipadx = 5)
```

```
gro_1b1 = Label (F4, font = ("times new roman", 15, "bold"), fg = 1b1_color, bg=  
    bg_color, text = "Total Grocery")  
gro_1b1.grid(row= 1, column= 0, padx = 18, pady = 5)
```

```
gro_en = Entry (F4, bd = 8, relief = GROOVE, textvariable = self.total_grocery)  
gro_en.grid(row = 1, column= 1, ipady = 2, ipadx = 5)
```

```
oth_1b1 = Label (F4, font = ("times new roman", 15, "bold"), fg = 1b1_color, bg  
    , text "Others Total")  
oth_1b1.grid(row= 2, column=0, padx= 10, pady = 5)  
oth_en = Entry (F4, bd = 8, relief = GROOVE, textvariable = self.total_other)  
oth_en.grid(row = 2, column= 1, ipady = 2, ipadx = 5)
```

```
cosmt_1b1 = Label (F4, font = ("times new roman", 15, "bold"), fg = 1b1_color, bg=  
    bg_color, text = "Cosmetics Tax")  
cosmt_1b1.grid(row= 0, column=2, padx=30, pady = 8)
```

```
cosmt_en = Entry (F4, bd = 8, relief = GROOVE, textvariable = self.tax_cos)  
cosmt_en.grid(row = 8, column = 3, ipady = 2, ipadx = 5)
```

```
grot_1b1 = Label (F4, font ("times new roman", 15, "bold"), fg = 1b1_color, bg=  
    bg_color, text = "Grocery Tax")  
grot_1b1.grid(row= 1, column = 2, padx = 38, pady = 5)  
grot_en = Entry (F4, bd = 8, relief = GROOVE, textvariable = self.tax_groc)  
grot_en.grid(row= 1, column= 3, ipady = 2, ipadx = 5)
```

```
otht_1b1 = Label (F4, font = ("times new roman", 15, "bold"), fg = 1b1_color, bg  
    , text "Others Tax")  
otht_1b1.grid(row= 2, column=2, padx = 10, pady = 5)
```

```
total_btn = Entry(F4, bd = 8, relief = GROOVE, textvariable =  
total_var, grid(row= 2, column = 3, ipady = 2, ipadx = 5))
```

```
total_var = StringVar()  
total_btn
```

```
total_btn.config(bg = bg_color, fg = fg_color, font = ("lucida", 12, "bold"), bd = 7, relief = GROOVE, command = self.total)  
total_btn.grid(row= 1, column = 4, ipadx = 20, padx = 30)
```

```
generate_bill_btn = Button(F4, text = "Generate Bill", bg = bg_color, fg = fg_color, font = ("lucida", 12, "bold"), bd = 7, relief = GROOVE, command = self.bill_area)  
generate_bill_btn.grid(row= 1, column = 5, ipadx = 20)
```

```
clear_btn = Button(F4, text = "Clear", bg = bg_color, fg = fg_color, font = ("lucida", 12, "bold"), bd = 7, relief = GROOVE, command = self.clear)  
clear_btn.grid(row= 1, column = 6, ipadx = 20, padx = 30)
```

```
exit_btn = Button(F4, text = "Exit", bg = bg_color, fg = fg_color, font = ("lucida", 12, "bold"), bd = 7, relief = GROOVE, command = self.exit)  
exit_btn.grid(row= 1, column = 7, ipadx = 28)
```

#Function to get total prices

```
def total(self):
```

```
    #=====Total Cosmetics Prices
```

```
    self.total_cosmetics_prices = (self.bath_soap.get() * 40) +
```

```
    (self.face_cream.get() * 148) +
```

```
    (self.face_wash.get() * 240) +
```

```
    (self.hair_spray.get() * 340) +
```


(self.body_lotion.get() ● 260)

self.total_cosmetics.set("Rs. "+str(self.total_cosmetics_prices)) self.tax_cos.set("Rs.
"+str(round(self.total_cosmetics_prices*0.05))) #=====Total Grocery Prices

self.total_grocery_prices = (

(self.wheat.get()*100)+

(self.food_oil.get() * 180)+

```

(self.daal.get() 80)+
(self.rice.get() *80)+
(self.sugar.get() ● 179)
self.total_grocery.set("Rs. "+str(self.total_grocery_prices)) self.tax_groc.set("Rs. "+str(round(self.total_grocery_prices*0.05)))
=====Total Other Prices
self.total_other_prices = (self.maza.get() * 20)+
(self.frooti.get() 50)+
(self.coke.get() * 60)+
(self.nimko.get() ● 20)+ (self.biscuits.get() ● 20)
self.total_other.set("Rs. "+str(self.total_other_prices)) self.tax_other.set("Rs. "+str(round(self.total_other_prices 8.85)))

#Function For Text Area
def welcome soft(self):
self.txt.delete('1.0',END)
self.txt.insert(END," Welcome To Iconic Retail\n")
self.txt.insert(END, "\nBill No.: (str(self.c_bill_no.get()))" self.txt.insert(END, "\nCustomer Name: (str(self.cus_name.get()))")
self.txt.insert(END, "\nPhone No. : (str(self.c_phone.get()))")
self.txt.insert(END, "\n
self.txt.insert(END,Product
Qty
Price")
self.txt.insert(END, "\n=====
#Function to clear the bill area def clear(self): self.txt.delete('1.0',END)
#Add Product name, qty and price to bill area
def bill_area(self):
self.welcome soft() if self.bath soap.get() != 0:
(self.bath soap.get())
self.txt.insert(END, "\nBath
(self.bath_soap.get() 40)")
Soap

```

```

if self.face_cream.get() = 0:
self.txt.insert(END, "\nFace
Cream
(self.face_cream.get()) if self.face_wash.get() != 0:
(self.face_cream.get() * 140)")
self.txt.insert(END, "\nFace
Wash
(self.face_wash.get())
[self.face_wash.get() 240]")
if self.hair_spray.get() = 8:
self.txt.insert(END, "\nHair (self.hair_spray.get() * 340)")
Spray
(self.hair_spray.get()) if self.body_lotion.get() = 8:
self.txt.insert(END, "\nBody
Lotion
(self.body_lotion.get())
[self.body_lotion.get() 260]")
if self.wheat.get() != 0:
self.txt.insert(END, F"\nWheat
(self.wheat.get())
self.wheat.get()* 100)") if self.food_oil.get() != 0:
self.txt.insert(END, "\
nFood (self.food_oil.get() 180)")
(self.food_oil.get()) if self.daal.get() = 8:
self.txt.insert(END, "\nDaal
(self.daal.get())
elf.daal.get() 80)")
if self.rice.get() = 0: self.txt.insert(END, "\nRice
(self.rice.get())
elf.rice.get() 80)") if self.sugar.get() != 0:
self.txt.insert(END, "\nSugar

```

```

(self.sugar.get())
self.sugar.get() ● 170")
if self.maza.get() != 8: self.txt.insert(END, "\nMaaza
(self.maza.get())
self.maza.get() 20)")
if self.frooti.get() != 0:
self.txt.insert(END, "\nFrooti
(self.frooti.get())
self.frooti.get() 50)")
if self.coke.get() = 8: self.txt.insert(END, "\nCoke
(self.coke.get())
elf.coke.get() ● 50)")
if self.nimko.get() != 0:
self.txt.insert(END, f"\nNimko
(self.nimko.get())
self.nimko.get() 20)")
if self.biscuits.get() != 0: self.txt.insert(END, "\nBiscuits
(self.biscuits.get())
(self.biscuits.get() 28)")
self.txt.insert(END, "\n
self.txt.insert(END, "\n
Total
(self.total_cosmetics_prices+self.total_grocery_prices+self.total_other_prices+self
total_cosmetics_prices
0.05 self.total_grocery_prices
0.85+self.total_other_prices 0.05)")

```


#Function to exit def exit(self): self.root.destroy()

#Function To Clear All Fields

root= Tk()

object= Bill App(root)

root.mainloop()

Outputs:

Step 1: Enter customer details, click Enter. Then enter the quantity of the products. Click Total to display bill menu.

Billing Software

Customer Details

Customer Name Phone No Bill No.

Cosmetics	Grocery	Others
Bath Soap <input type="text" value="10"/>	Rice <input type="text" value="25"/>	Masala <input type="text" value="30"/>
Face Cream <input type="text" value="15"/>	Food Oil <input type="text" value="10"/>	Cake <input type="text" value="18"/>
Face Wash <input type="text" value="20"/>	Daal <input type="text" value="25"/>	Frooti <input type="text" value="30"/>
Hair Spray <input type="text" value="12"/>	Wheat <input type="text" value="25"/>	Ninkos <input type="text" value="25"/>
Body Lotion <input type="text" value="30"/>	Sugar <input type="text" value="50"/>	Biscuits <input type="text" value="50"/>

Bill Area

Bill Menu

Total Cosmetics	<input type="text" value="Rs. 18540"/>	Cosmetics Tax	<input type="text" value="Rs. 150"/>
Total Grocery	<input type="text" value="Rs. 18800"/>	Grocery Tax	<input type="text" value="Rs. 146"/>
Others Total	<input type="text" value="Rs. 480"/>	Others Tax	<input type="text" value="Rs. 234"/>

Fig 4

Step 2: Click Generate bill to generate the bill with bill no. and Customer detail.

Billing Software

Customer Details

Customer Name Phone No Bill No.

Cosmetics		Grocery		Others	
Bath Soap	<input type="text" value="10"/>	Rice	<input type="text" value="25"/>	Masala	<input type="text" value="30"/>
Face Cream	<input type="text" value="10"/>	Food Oil	<input type="text" value="10"/>	Coke	<input type="text" value="10"/>
Face Wash	<input type="text" value="20"/>	Daal	<input type="text" value="25"/>	Frooti	<input type="text" value="30"/>
Hair Spray	<input type="text" value="10"/>	Wheat	<input type="text" value="25"/>	Nimkos	<input type="text" value="25"/>
Body Lotion	<input type="text" value="30"/>	Sugar	<input type="text" value="50"/>	Biscuits	<input type="text" value="50"/>

Bill Area

Welcome To Ikonix Retail

Bill No. : 1904
Customer Name : Rashmi
Phone No. : 7000112

Product	Qty	Price
Bath Soap	10	400
Face Cream	10	2240
Face Wash	20	1800
Hair Spray	10	2400
Body Lotion	30	7800
Wheat	25	1500
Food Oil	10	1800
Daal	25	1000
Rice	25	1000
Sugar	50	1800
Masala	30	400
Frooti	30	1500

Bill Menu

Total Cosmetics	<input type="text" value="Rs. 15640"/>	Cosmetics Tax	<input type="text" value="Rs. 912"/>
Total Grocery	<input type="text" value="Rs. 15800"/>	Grocery Tax	<input type="text" value="Rs. 940"/>
Others Total	<input type="text" value="Rs. 4580"/>	Others Tax	<input type="text" value="Rs. 234"/>

Total

Fig 5

Step 3: Scroll down.

Using Software

Billing Software

Customer Details

Customer Name: Phone No: Bill No:

Cosmetics

Bath Soap: Face Cream: Face Wash: Hair Spray: Body Lotion:

Grocery

Rice: Food Oil: Dal: Wheat: Sugar:

Others

Masala: Coke: Frooti: Ninkos: Biscuits:

Bill Area

Product	Qty	Price
Bath Soap	10	900
Face Cream	10	3200
Face Wash	20	6000
Hair Spray	10	3400
Body Lotion	50	7800
Wheat	25	2800
Food Oil	10	2400
Dal	25	2000
Rice	25	2000
Sugar	50	6500
Masala	30	600
Frooti	30	1500
Coke	10	1000
Ninkos	25	900
Biscuits	50	1000

Total: 42120

Bill Menu

Total Cosmetics: Cosmetics Tax:

Total Grocery: Grocery Tax:

Others Total: Others Tax:

CONCLUSION AND FUTURE SCOPE

Conclusion

The urge for the digital bill management systems is increasing day by day. Billing System Using Python is a perfect solution for this. Through this the ease of access and flexibility of the day to day works in the store is made simpler. The features such as bill number, CGST and SGST make this software user friendly. Both the management side and worker site can manage the data easily using such a system. It is very good and reliable system which can be incorporated to the chain of stores so can easily maintained and addressed.

Future Scope

In future, this application can be updated with some more items. Many other latest features will be added. Project will surely be enhanced with respect to looks and appearance and also as per user requirements. Many more functionalities will be added. Some enhancement can also be done with calculator. For now, this application generates the bill but with respect to future application it will be enhanced that it will also print a bill. It can also be used on a large scale. Many more modification can do with menu or prices or tax as well. It will be easy to use and bug free to all future or upcoming users. This can also be enhanced in future as per customer requirements. Many more features can be added. This will surely help users instead of making a bill manually.

REFERENCE

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ECONOMICS



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ASANSOL

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Environmental Studies





GLOBAL ENVIRONMENTAL ISSUES



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- SURAJ ROKA
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INTRODUCTION

An introduction to Global Environmental Issues represents a comprehensive & stimulating introduction to the key environmental issues presently threatening our global environment. Major global environmental issues are brought into focus. Exploration of the evolution of the earth's natural systems (hydrosphere, biosphere, geosphere) provided an essential understanding of the scientific concepts, processes and historical background on environmental issues.

Contemporary socioeconomic, cultural and political considerations are explored and important conceptual approaches such as brain hypothesis and Chaos Theory are introduced. Human impact and management of the natural environment, and concerns for maintaining biodiversity are emphasized throughout.

The rapid growth population and economic development is leading urbanization and industrialization, expansion and massive intensification of agriculture the destruction of forest.

Major environmental issues are forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rock etc) environmental degradation, public health, loss of diversity loss of resilience in ecosystem, livelihood security of the poor.

It is estimated that the country's population will increase to about 1.26 billion by the year 2026. The Projected population indicates that India will be the first mass populous country in the world and China will be ranking second in the year 2050. India having 18% of the world's population on 2.4% of world's total area has greatly increased the pressure on its natural resources. Water short ages, soil exhaustion and erosion, deforestation, air and water pollution, afflicts many areas. The condition of the environment is a world wide issue.

Air and water pollution do not recognize borders; poor soil condition in one nation may reduce another country's food safety. and at the same time, different problems.

One key distinction is between the environmental threats faced by developed nations, such as the United States and western European countries, and developing nations such as India and Mexico. Most agree that these nations may be dissimilar crises, but debate remains over whether the solution to their problems are unique as well.

The environmental problems faced by developed nations are largely the result of their economic strengths and higher standards of living. Overconsumption is cited by many, the environmental crises faced are result of poverty

GLOBAL CHANGE SCENARIOS

A brief summary of the status of global climate change predictions provides a context for subsequent discussions. We rely primarily on the work of the Intergovernmental Panel on Climate Change (IPCC), and on MacCracken et al (1996), who combine discussions of model based predictions and paleoclimate records. This is a rapidly developing field. Although the detailed predictions derived from general circulation models are uncertain and subject to revision, there can be little doubt in a qualitative sense that the increased and still-increasing concentration of radiatively active gases in the atmosphere will result in significant climate change of some sort. The net increase will amount to about 1.0 by 2030 and 3.0 by 2090. Land surfaces will warm faster than the global mean, especially in winter.

Present confidence in regional climate change predictions is low. In the oceanic tropics, the area of the most interest to this review, the predictive ability of the general circulation model is highly questionable; both between model agreement and calibration against present conditions are poor. Some models predict tropical sea-surface temperature increase of 1-3°C, but there is a widespread debate about possible feedback mechanism that might either stabilize values in the vicinity of 3.0-3.1°C or produce positive feedback over the warmest part of ocean.



DEFORESTATION

THE PROBLEM IS THE LOSS OF TREES AND THE DESTRUCTION OF HABITATS. IT IS CAUSED BY THE NEED FOR LAND FOR AGRICULTURE AND LOGGING.



CONTAMINATION

THE PROBLEM IS THE RELEASE OF TOXIC SUBSTANCES INTO THE ENVIRONMENT, WHICH CAN HARM HUMANS AND ECOSYSTEMS.



WASTE

THE PROBLEM IS THE AMOUNT OF WASTE GENERATED BY SOCIETY, WHICH IS NOT PROPERLY MANAGED, LEADING TO POLLUTION.



AIR POLLUTION

THE PROBLEM IS THE RELEASE OF POLLUTANTS INTO THE AIR, WHICH CAN CAUSE RESPIRATORY AND OTHER HEALTH PROBLEMS.



WATER POLLUTION

THE PROBLEM IS THE CONTAMINATION OF WATER BODIES BY WASTE AND TOXIC SUBSTANCES, WHICH CAN HARM AQUATIC LIFE AND HUMANS.



GREENHOUSE GAS EMISSIONS

THE PROBLEM IS THE RELEASE OF GASES THAT TRAP HEAT IN THE EARTH'S ATMOSPHERE, LEADING TO CLIMATE CHANGE.

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GLOBAL ENVIRONMENTAL MAJOR ISSUES

One of the primary causes of environmental degradation in a country could be attributed to rapid growth of population, which adversely affects the natural resources and environment. The upsurging population and the environmental deterioration face the challenge of sustainable development. The existence or the absence of favourable natural resources can facilitate or retard the process of socioeconomic development.

The three basic demographic factors of births (natality), deaths (mortality) and human migration and immigration produce changes in population, size, composition, distribution and these changes raise a number of important questions of serious environmental calamities.

These include heavy pressure on land, land degradation, forests, habitat destruction and loss of biodiversity. Changing consumption pattern has led to rising demand for energy. The final outcomes of this are air pollution, global warming, climate change, water scarcity and water pollution. Environmental issues in India include various natural hazards, particularly cyclones & annual monsoon floods, population growth, increasing individual consumption, industrialization, infrastructural development, poor agricultural practices, and resources mal-distribution have led to substantial human transformation of India's natural environment.

It is also estimated that between 4.7 and 12 billion tons of topsoil are lost annually from soil erosion. From 1947 to 2002, average annual per capita water availability declined by almost 70% of 1882 cubic meters and over-exploitation of groundwater is problematic in the states of Haryana, Punjab and Uttar Pradesh, Forest area cover 18.34% of India's geographic area (637000 km²). Nearly half of the country's forest cover is found in the States of Madhya Pradesh (20.7%) and the seven states of the northeast harvesting for fuel wood and the expansion of agricultural land.

As estimated 60% of cultivated land suffers from soil erosion, water logging & salinity.

These trends, combined with including industrial and motor vehicle pollution output, have led to atmospheric temperature increases, shifting precipitation patterns, and declining intervals of drought recurrence in many areas. The Indian Agriculture Research of Parwati has estimated that a 3°C rise in temperature will rise in a 15 to 20% loss of annual wheat population. These are sustainable problems for a nation with such a large population depending upon a productivity of primary resources and whose economic scales heavily on industrial growth.



GLOBAL ENVIRONMENTAL PROBLEMS

At the dawn of the third millennium, a powerful and complex web of information is contributing to unprecedented global trends in environmental degradation. These forces include rapid globalization and urbanization, pervasive poverty, unsustainable consumption patterns and population growth. Often serving the compound effects and intensity of the environmental challenges, require concerted responses on the part of the international community. Global climate changes, the depletion of the ozone layer, desertification, deforestation, the loss of the planet's biological diversity and the transboundary movements of hazardous wastes and chemicals are all environmental problems that touch every nation and adversely affect the lives and health of their populations.

As with other environment-related challenges, children are disproportionately vulnerable to and suffer most from the effects of these global trends. Moreover, all of these global environmental trends have long term effects on people and societies and are either difficult or impossible to reverse over the period of one generation.

Unless, effective globalization are taken early, we will end up plundering our children's heritage and future in an unprecedented way.

These are substantial problems for a nation with such a large population depending on the productivity of primary resources and whose economic growth relies heavily on industrial growth. Civil conflicts involving natural resources - most notably forests and arable land - have occurred in eastern and northern states.

The poor environmental condition of communist nation is often cited by these observers as evidence of the inability of government regulations to conserve the environment. They believe that companies are more likely to be motivated by the quest for profit than a desire to preserve the environment.

PROGRESS IN GLOBAL ENVIRONMENTAL CHANGE

Since 1990 global population has grown from roughly 5.3 to 6.8 billion and sustained global economic growth accompanied by total and per capita increase in consumption in many parts of the world, not least in Brazil, Russia, India and China. However our world remains driven by differences in access to resources and per capita consumption both between and within countries, capitals.

A review of the most highly cited papers journal shows significant contributions across five broad themes: the drivers and impacts of systemic and cumulative change, across cutting concepts such as vulnerability and resilience approaches to management, control and policy, and different perspectives on climate change.

The scientific community has cleared documented and quantified global environmental change with increasing precision and improved models to understand the future consequences of our actions, although large uncertainties remain. The community has also developed tools to quantify our footprints and the effects of our lifestyle beyond our immediate surroundings (Rees, 1992; Hoekstra and Hung, 2005)

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and we have for greatest potential to understand our interconnectedness across scales, in both biophysical and socioeconomic terms, which as Rifkin (2009) suggest may cultivate increased empathy. But it is perhaps at the interface between individual and collective perceptions and actions that research has progressed the least but where there is the greatest potential to address the challenges we understand so well.

Interdisciplinary research on global environmental change must engage further with psychological and behavioural sciences and ethics to understand motivation and behavioral changes in its socio-economic and political context and the forms of institutions and governance that can foster new technologies and ideas of progress.

ENVIRONMENTAL ISSUES AT GLOBAL LEVEL

- * Depletion of natural resources
- * Water pollution
- * Air pollution
- * Ground water pollution
- * Toxic chemicals and soil pollution
- * Ozone layer depletion
- * Global warming
- * Loss of bio-diversity
- * Extinction of wildlife and loss of natural habitat
- * Nuclear wastes and radiation issues.

GLOBAL ENVIRONMENTAL ISSUES LIST

If asked what are the global environmental issues that the planet faces today, most people out there wouldn't be able to go beyond global warming and energy crisis. These people are not aware of the fact that there are several other issues of global concern, each of which is equally hazardous. These people more importantly, all these issues are related with each other by some or the other way, and hence, tackling them one by one has just become difficult.



CLIMATE CHANGE

Climate change has become more than obvious over the past decades, with nine years of the decade making it to the list of hottest years the planet has ever witnessed. The rise in temperature has also ensured that the equations on the planet have gone for a toss.

Some of the most obvious signs of this include irregularity in weather, frequent storms, melting glaciers, rising level of sea etc. Taking by the prevailing conditions, it is not difficult to anticipate that the planet is heading for a dramatic climate change, some where in near future.

The seemingly rise of mean temperature is already showing adverse effects. One of the consequences have been more a rise in the global sea level.

The world's emission of green house gases, notably Carbon dioxide will double or triple pre-industrial levels expected to increase by 1.4 to 5.8 degrees Celsius from 1990 to 2100. The repercussion of climate change will disproportionately affect those who are least able to adapt - the poor and vulnerable section of society, including children.

It is widely recognised that climate change by alternating local weather patterns and by disturbing life supporting natural system and range of health effect is diverse.

CONSERVATION OF SPECIES

Yet another global environmental issue, species conservation basically deals with conservation of flora and fauna, in order to curb the extinction of species.

Extinction of a single species of plant or animal results in a dramatic imbalance in the ecosystem, as a number of other species dependent on it directly are also affected. Over the last century or so, several plants and animals species have become extinct thus resulting in a major loss for the biodiversity of the planet. Unfortunately, despite the effort put into conservation by organization and activists, their work can easily be undermined by those who have other interests. This occurs, for example, from habitat destruction, illegal poaching, to influencing or manipulating laws designed to protect species.



ENERGY CRISIS

The fact that we are largely dependent on fossil fuels like for our fuels and energy requirements has made us significantly vulnerable to reverse energy crisis. Though, quite a few renewable energy sources have been identified, none of them have been promising enough when it comes to replacement of fossil fuels as the major source of energy for mankind. Attempts to tap the full potential of these sources are in progress, and our future big and large depends on these attempts, as fossil fuels are on the average of exhaustion.

Energy prices are have been rising since 2021 because of the rapid economic recovery, weather conditions in various parts of the world, maintenance work that had been delayed by the pandemic, and earlier decision by oil and gas companies and exploring countries to reduce investments. Oil prices also initially soared as international trade routes were reconfigured by the United States, many European countries said they would no longer buy Russian oil.

EXPLORATION OF NATURAL RESOURCES

Our greed for more has left us empty handed in terms of natural resources in several parts of the world. Several human activities, including the likes of mining, agriculture, fishing, etc has resulted in drastic degradation of our natural resources. While mining, and agriculture have triggered large-scale deforestation, over fishing has only resulted in the reduction of population of marine creatures including the inhabiting of the planet. If the trend continues, we are bound to exhaust those natural resources on which we are dependent and thus dig our own graves. During the 20th century, energy consumption rapidly increased. Totally, about 80% of the world energy consumption is sustained by the extraction of fossil fuels, which consists of oil, coal, and natural gas.

LAND USE

Global environmental problems pertaining to the land are not just restricted to hazardous waste disposal or large-scale deforestation, but also to improper use of land. Natural environment is being obstructed but also to improper to make way for urban sprawl which is indirectly resulting in loss of habitat for several species.

Fragmentation of land owing to construction is also a major factor when it comes to improper land use. All these factors together result in several problems, including soil erosion, degradation of land and desertification. A central challenge for sustainability is how to preserve forest ecosystem and the service that they provide us while enhancing food production. A few countries have managed to land use transition over the recent decades that simultaneously increased their forest cover and agricultural production.



NUCLEAR ISSUES

Nuclear power does have high potential, but the problems associated with it are no less. Radioactive waste from nuclear power plants is one of the major problems we are likely to face, especially if safety regulations are not followed properly.

Chernobyl tragedy has set an example of how nuclear waste can lead to disaster for mankind, and no one would like to see another Chernobyl happening. It doesn't end here as the threat of some nation diverting its nuclear power to produce nuclear arsenal is always looming over the mankind. And it won't take an Einstein to imagine the amount of damage these nuclear weapons would cause.

Countries may have a number of motives for deploying nuclear power plants, including a lack of indigenous energy resources, a desire for energy independence, and a goal to limit greenhouse gas emissions by using a carbon-free source of electricity.

OVER POPULATION

Yet another major global environmental issue is over-population. As the population of world continues to soar at an alarming rate, the pressure on the resources of the planet is increasing. These problems associated with overpopulation range from food and water crisis to lack of space for natural burial. Overpopulation also results in various others demographic hazards.

Incessant population growth will not just result in depletion of natural resources, but will also put more pressure on the economy.

After all sustaining a huge population requires quite a mammoth effort for a nation, as far as finance is concerned. Overcrowding leads to further demand for limited resources and this, in turn, can lead to more conflict and warfare.

As human seeks out more resources, they take over land that was once the habitat of other species leading to huge biodiversity loss.

POLLUTION

This is perhaps the most obvious, yet most ignored global environmental issue in the list of environmental problems. The term 'pollution' in itself have several other aspects, prominent ones among which include air pollution, water pollution, and land pollution. On one hand air pollution can be attributed to the large amount of carbon dioxide pumped into the atmosphere by industries and vehicles, water pollution and land pollution is caused as a result of waste disposal from factories, oil carrying vessels etc. Basically, mankind is to be blamed for this issue as our activities tend to hamper the environment at an alarming rate. In this trend continues, we will be very soon left without any fresh air to breathe, and clean water to drink.



WASTE MANAGEMENT

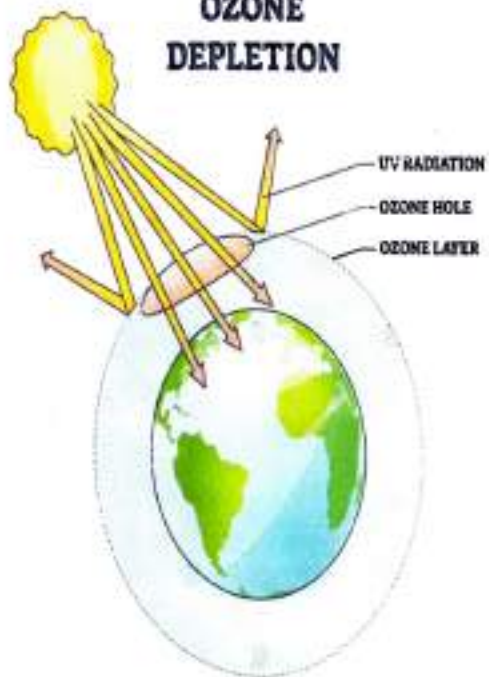
As population increases, human activities increase, which eventually increases the amount of waste produced.

This waste doesn't just include those harmful gases let out in the atmosphere or toxic waste released in water bodies, but also include nuclear waste, e-waste, medical waste and even the waste from our homes. With limited area available on the planet, and most of it being inhabited by us, we are left with no space to dispose this waste.

The rate at which this waste is produced is far more than the rate at which it is being treated, and this just results in piling up of waste, which eventually pollutes the environment.

However, the environmental issues the planet faces today are not just restricted. Several issues, including problems due to construction of dams, genetic pollution nanotechnology etc. are surfacing every other day.

OZONE DEPLETION



OZONE LAYER DEPLETION

Ozone in the atmosphere's upper layer, the stratosphere, protects humans, animals and plants from the damaging effects of the UV-radiation from the sun without it, all life on earth would come to an end. However, the use of chlorofluorocarbons (CFCs) and other Ozone-Depleting Substance (ODS) are slowly eating away at the stratospheric ozone layer, creating a major potential health hazard. While the concentrations of ODS in the lower atmosphere peaked in about 1994 and is now slowly declining due to worldwide efforts to phase out the use of CFC is and other damaging substances, significant health threats relating to ozone depletion persist.

Skin Cancer is the most worrisome impact of ozone depletion. Exposure to sun's harmful Ultraviolet Light (UV) may damage children's skin.

The international response to this issue is embodied in the Convention of Protection of the Ozone layer, which was concluded in Vienna in 1985.

Production of the most damageable ozone-depletion substances was eliminated, except phase out by 2010 in developing countries.

LOSS OF BIODIVERSITY

One hundred and fifty years ago, the Native American leader, Chief Seattle, is reported to have said we humans are but a threat in the web of life. He added whatever we do to the web, "we do to ourselves". The web is unraveling at an increasing rate.

Both plants and animals species have disappearing at 50 to 700 times the natural rate, due to such factors as the large scale clearing and burning of forests, over-harvesting of plants and animals, indiscriminate use of pesticides, draining and filling of wetlands, destructive fishing practices, air pollution and the conversion of wild lands to agricultural and urban uses.

Recent studies suggest that this high rate of extinction will accelerate even faster, taking an increasing number of living plants and animals away from us forever. This species loss and ecosystem disruption is causing a complex range of circumstances with consequences to human health.

GLOBAL WARMING

Global warming is the unusually rapid increase in Earth's average surface temperature over the past century primarily due to the greenhouse gases released by people burning fossil fuels. Archaeological sites and some buildings have survived at least two periods of global warming and intervening cold periods. With international scientific evidence mounting and the reliability of future climate predictions increasing, Heritage commissioned research to gather evidence on climate change as a possible cause of environmental instability of cultural heritage and to inform present and future planning.

According to the report of WTO International Organization 2007 the following things are taken place in the world and affecting the natural disaster. The biggest ice caps in the arctic region, the word hunt Ice shelf broke into fragments as a result of global warming.

ROLE OF WWF

WWF India is one of the largest conservation organization engaged in wildlife and nature conservation in the country. A part of WWF International the organization has made its presence felt through a sustained effort and not only towards nature and wildlife conservation, but sensitizing people by creating awareness through capacity building and environmental legal activism. A challenging and constructive, science-based organization WWF International addresses issues like the survival of species and habitats, climate change and environmental education.

CONCLUSION

Global climate change is causing these areas to experience an increasingly sparse and erratic rainfall pattern and a huge prolonged dry season, affecting the livelihoods of thousands of villagers, some areas are also facing water shortages. People are becoming aware of the sake of global warming, so they cultivate more trees, planting mangrove forests by the sides of the coastal areas and reduce the usage of plastics. They have sowed more than 12 million seeds & half a million of plants. Planting trees becomes carbon emissions and pollution.

There are organizations that will help you offset your carbon footprint. Deforestation comes in a close second in causes for global warming.

The various phenomena that can be said to contribute to the crisis include stratospheric ozone depletion, global warming, acid aerosol formation, desertification and deforestation.

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Political Science



BIDHAN CHANDRA COLLEGE

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BACKGROUND OF WEBERIAN BUREAUCRACY

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INTRODUCTION :-

Max Weber's bureaucratic model is usually placed in the category of classical administrative thought, and the Weberian "Ideal-type" continues to be the dominant paradigm in the Public Administration. The pedigree of the term 'bureaucracy' is not so clear. As Max Weber points out, "It was first used in the French form *bureaucratie* by a French minister of Commerce in the eighteenth century to refer to the government in operation. Spread to Germany during the nineteenth century as *Bürokratie*, and has since found its way into English and many other languages."

CLASSICAL WRITINGS ON BUREAUCRACY :-

The most scholarly writing on the subject of bureaucracy is by Max Weber (1864-1920). By contrast, the concept of bureaucracy does not occupy a central position in Marx's thought, but he has his views on bureaucracy and its relations to the power structure of society.

According to Marx, bureaucracy like the state itself, is the instrument by which the dominant class exercises its domination over the other social groups or classes.

Teacher's Signature

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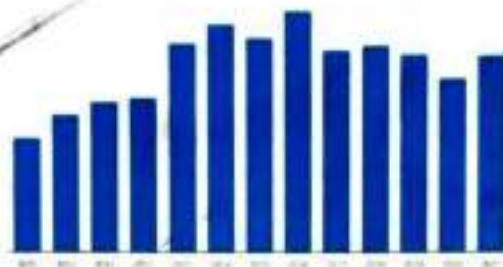


PAPER CC-14

PROJECT

UNDER THE SUPERVISION OF DR. AMRITA BANERJEE

Total number of rape cases reported in India from 2000 to 2021



TOPIC :

A STUDY ON THE STATUS OF RAPE CASES IN INDIA

SUBMITTED BY :

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SEMESTER- VI

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Course Code : BAHPLSC602

DEPARTMENT OF POLITICAL SCIENCE

BIDHAN CHANDRA COLLEGE ASANSOL

(Under Kazi Nazrul University)

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Introduction

Rape, generally known as *balatkar* is a terrifying word in itself. In India, it is one of the most common criminal activities. So, petrifying, humiliating, traumatic and terrifying the word rape is that it destroys the entire psychology and affects the deepest emotions of the person being raped. The word rape has been derived from Latin word 'rapio' which means to take away. Therefore the literal meaning of rape could be forcibly snatching something from someone which is clearly an offence. To force means to include in an activity without the consent of another. India used to believe in the concept of *Matri Dero Bhara* which means to worship women or mother. But keeping in view the number of rape cases which arise every day in India the concept of *Matri Dero Bhara* seems to disappear nowadays. Rape is a crime not only against the victims as an individual but against society as a whole. So utterly shameful is the offence that it even is a crime against the basic human rights. No single definition can define the word rape because of its exhaustive nature. Only the person who suffers it, knows it.

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