

SUMMER VACATION ASSIGNMENTS (2026-27)

CLASS -XII

BUSINESS STUDIES

Theme: Live Business & Management Evidence Project

General Instructions:

- Attempt any 3 activities out of the 5 listed below.
- Present the written work in a neat project file (4-5 pages per activity).
- Strict Rule: Every activity must be supported by real-life physical evidence such as photographs, original bills, product wrappers, or news printouts pasted directly onto the sheets.
- Use real-life examples and authentic observations.

Activity 1: A Day in a Business (With Bills & Menus)

Task: Visit any local shop, café, or small business. Do not write from imagination. You must interact with the owner or manager.

- Mandatory Paste: Paste the Original Bill or receipt of any small item purchased from that business.
- Menu Card Proof: If visiting a café or restaurant, take a photograph of their physical Menu Card or create a hand-made copy of the rate list and paste it.

Answer the Following Questions:

1. Analyse the Menu Card / Rate list: Do the prices reflect that management used a scientific costing method, or does it look like arbitrary guesswork (Rule of Thumb)?
2. Explain how the store manager is balancing Effectiveness and Efficiency.
3. If you observed any conflict or lack of understanding between the owner and the staff, which principle of FW Taylor would you advise them to use?
4. Looking at the details printed on the pasted bill, identify the primary target goal of this business's ownership.

Activity 2: Case Study - The Mumbai Dabbawalas & Six Sigma

Task: Research the famous Mumbai Dabbawala delivery system in your textbook and online. They are globally renowned for having achieved a Six Sigma rating by Forbes, meaning they make fewer than 3.4 mistakes per million deliveries. They do this without advanced technology, depending purely on flawless teamwork and a highly coordinated color-coding system.

- **Mandatory Evidence:** Paste a printed picture of a Mumbai Dabbawala carrying tiffins, or a printed cutout explaining their unique color-coding system.

Answer the Following Questions:

1. Explain how the Dabbawalas prove that coordination is not a separate function, but the binding force that connects planning, organizing, and directing in their daily tiffin supply chain.
2. What does the achievement of a "Six Sigma" rating tell you about the Dabbawalas' Effectiveness and Efficiency? Are they achieving both simultaneously?
3. These delivery workers are largely semi-literate, yet they operate like clockwork. How do they reflect Taylor's principle of Harmony, Not Discord among themselves to avoid conflicts?
4. Research their operations. Mention at least two modern initiatives they have adopted to sustain themselves.

Activity 3: Customer Experience Diary (Standardization Audit)

Task: Observe your own customer experience with any 3 businesses (either offline retail shops or online platforms like Amazon).

- **Wrapper Evidence:** It is mandatory to paste the Empty Wrappers of the products bought (biscuit wrapper) or the Box Sticker / Invoice from an online delivery.

Answer the Following Questions:

1. Look at the product wrapper carefully. How do the printed details (like Expiry Date and MRP) help society or protect the customer?
2. Write about any 1 experience where you received bad service (like late delivery or damaged items).
3. To stop this delay or damage, how can the company use Taylor's principle of Science, Not Rule of Thumb instead of just guessing the delivery routes?
4. How can the company make the office managers and the field delivery boys work together as one team by using Cooperation, Not Individualism?

Activity 4: Advertisement Analysis (Visual Storyboard)

Task: Choose **any 2 trending advertisements** of prominent brands such as Maggi, Surf Excel, Fevicol, etc.

- **Mandatory:** Take 2 or 3 pictures of the key frames of the advertisements and paste them into the file, or neatly draw the storyboard.

Answer the Following Questions:

1. What was the exact message the marketing managers wanted to pass to consumers through the advertisement?
2. While planning this ad campaign, which specific target audience did the management keep in mind?
3. "Management is considered an Intangible Force." How can you see the tangible result of good management after watching this brilliant advertisement campaign?
4. Which function of management is mostly responsible for planning and analysing market data before creating an advertisement?

Activity 5: Product Comparison & Pricing (The Market Survey)

Task: Visit a local supermarket or grocery shop and find any 2 competing products in the same category (e.g., Surf Excel vs. Ariel, or Maggi vs. Yippee).

- **Mandatory Proof:** Paste the empty wrappers or take cutouts of both competing products side by side in the file.

Answer the Following Questions:

1. Compare the prices and weights of both products. Does the pricing look calculated through scientific evaluation or random guesswork (Rule of Thumb)?
2. How does the market leader apply the concept of continuous improvement and scientific planning to dominate the market shelf?
3. In your opinion, which product provides better customer value in terms of Effectiveness and Efficiency? Why?
4. Identify which level of management is responsible for deciding the final market price (MRP) of these products.

APPLIED MATHEMATICS

1. **Plot a graph using** spreadsheet for $f(x)=|x|$ for all value of x .
2. Plot a graph tracing a pair of dice and make meaningful inference

3. Project: "Slope & Area Rangoli" — Calculus meets Linear Algebra

- Concept covered:

1. Derivatives: Slope of tangent, increasing/decreasing, maxima/minima
2. Determinants: Area of triangle, collinearity of points, solving linear equations

Final product: A large A2 chart / board with a geometric rangoli design where every line and is defined mathematically.

4.

a) Application in Geometry

A farmer wants to check if his 3 boundary stones at A(1,2), B(4,6), and C(k,10) lie on a straight line. He doesn't have measuring tools.

Q: What value of k will make the stones collinear? Use determinants to decide. Explain why determinant = 0 means collinear.

Tests: Formulate real problem → apply determinant condition for collinearity

b. Analysis & Error Finding

Riya solved for area of triangle with vertices (0,0), (3,0), (0,4). She wrote: $\frac{1}{2} \begin{vmatrix} 0 & 0 & 1 \\ 3 & 0 & 1 \\ 0 & 4 & 1 \end{vmatrix} = -6$

Q: Is her final answer correct for area? If not, what mistake did she make and what is the correct area? Why can determinants give negative values here?

Tests: Evaluate, identify error, interpret sign of determinant

c. Case Study: Consistency of Equations

A startup sells 3 products. The revenue equations for Jan, Feb, Mar are:

$$x+2y+z=10000$$

$$2x-y+3z=15000$$

$$4x+3y+5z=35000$$

where x, y, z are prices of products.

Q: situation where “if two rows are proportional, information is repeated” makes sense.

Tests: Apply properties, justify, relate to real context. Higher Order Thinking

If A is a 3×3 matrix and $|A| = -2$, find: a) $|3A|$ b) $|\text{adj}(A)|$ c) $|A \cdot A^T|$

Q: A student says “ $|3A| = 3|A|$ ”. Is he correct? Use properties to explain why/why not.

Tests: Apply $|kA| = k^n|A|$, $|\text{adj}A| = |A|^{n-1}$, conceptual clarity

5 a). **Real-Life Application:** Rate of Change A Covid case tracker shows active cases in Delhi by $C(t) = 5000 + 1200t - 30t^2$, where t = days since April 1, 2026.

Q: a) Find the rate at which cases are changing on day 10.

b) On which day will cases stop increasing? What is the meaning of $C'(t) = 0$ here?

c) If $C''(t) < 0$ at that point, what does it tell the health department?

Tests: Convert situation \rightarrow derivative, interpret first & second derivative in context

b. **Analysis:** Increasing/Decreasing + Graph A company’s profit function is $P(x) = -x^3 + 12x^2 - 21x + 100$, where x = units produced in hundreds.

Q: The manager says “more production always means more profit”. Use derivatives to test his claim for $0 \leq x \leq 10$. Identify intervals where profit increases/decreases and find the production level for maximum profit.

Tests: Use $f'(x)$ for monotonicity, apply max/min to contradict misconception

3. Error Finding + Conceptual Clarity Aman did this: If $y = |x|$, then $y' = |x|x$ for all x . So at $x = 0$, $y' = 0/0 = 1$.

Q: Identify the error. Using the graph of $y = |x|$, explain why derivative at $x = 0$ does not exist. What is the geometric meaning?

Tests: Evaluate reasoning, link derivative to “sharp corner” & tangent

CHEMISTRY

1. ____ Prepare a structured chapter summary, including all important reactions, for the following chapters on A3 sheets:
 - (a) Haloalkanes and Haloarenes
 - (b) Alcohols, Phenols and Ethers
2. Complete the investigatory project file.
Format of the file should be:
 - (a) Cover page
 - (b) Certificate
 - (c) Acknowledgement
 - (d) Index
 - (e) Introduction
 - Aim/Objective of the project
 - Theory
 - Materials required
 - Procedure
 - Observation table, calculations or graph (if required)
 - Result
 - Precautions
 - (f) Conclusion (of the project)
 - (g) Bibliography
3. Complete the given Assignment in your assignment notebook.

Assignment

Haloalkanes and Haloarenes

Reasoning questions

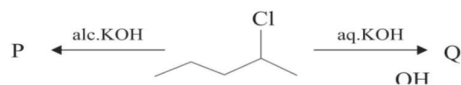
1. Although chlorine is an electron withdrawing group, yet it is *ortho- para-* directing in electrophilic aromatic substitution reaction. Give reason.
2. (i) Out of the following compounds, which one is more reactive towards reactive in S_N1 substitution reaction and why?
(a) C_6H_5Cl and $C_6H_5CH_2-Cl$
(b) $C_6H_5CH(CH_3)Br$ and $C_6H_5CH(C_6H_5)Br$
3. Give reason: The presence of $-NO_2$ group at ortho or para position increases the reactivity of haloarenes towards nucleophilic substitution reactions.
4. Aryl chlorides and bromides can be easily prepared by electrophilic substitution of arenes with chlorine and bromine respectively in the presence of Lewis acid catalysts. But why does preparation of aryl iodides require presence of an oxidising agent? Why is sulphuric acid not used during reaction of alcohols with KI ?
5. Out of o-and p-dibromobenzene which one has a higher melting point and why?
6. Chloroform is stored in dark coloured and sealed bottles. Why? Why is ethanol added to chloroform bottles?
7. (i) Why should Grignard reagent be prepared under anhydrous condition?
(ii) For the preparation of alkyl chloride from alcohols, thionyl chloride ($SOCl_2$) is preferred. Give reason.
(iii) Haloarenes are extremely less reactive towards nucleophilic substitution reactions. Explain.
8. Explain why :
(i) (\pm) -Butan-2-ol is optically inactive.
(ii) Iodoethane reacts faster than chloroethane in S_N2 .
9. Optical rotation of an enantiomer is $+12.5^\circ$. Write optical rotation of:
(i) Its mirror image
(ii) Racemic mixture (1:1)
10. Which gives white ppt with $AgNO_3$ and why?
(i) Cyclohexyl chloride vs Chlorobenzene
(ii) CH_3-CH_2-Cl vs $CH_2=CH-Cl$
(iii) Benzyl chloride vs Chlorobenzene
(iv) $CHCl_3$ vs CCl_4

Conversions

1. Toluene → Benzyl alcohol
2. Benzyl alcohol → Phenylethanenitrile
3. 2-Bromopropane → 1-Bromopropane
4. 2-Chloropropane → 2-Nitropropane
5. Ethanol to But-1-yne
6. Benzene to 4-Bromonitrobenzene
7. Aniline to Chlorobenzene
8. Isopropyl alcohol to Iodoform
9. Aniline to Phenylisocyanide
10. Alkyl bromide → Deuterated alkane

Compound Identification

1. An alkyl halide having molecular formula C_4H_9Cl is optically active. Write its structure.
2. An organic compound 'A' on treatment with KCN gave 'B' which on hydrolysis with dil. HCl gave acetic acid. Identify A.
3. A hydrocarbon C_5H_{10} does not react with chlorine in dark but gives a single monochloro compound C_5H_9Cl in bright sunlight. Identify the hydrocarbon.
4. A student is asked to prepare an aromatic-alkyl hydrocarbon in the lab. They use a mixture of an aryl halide and an alkyl halide, along with metallic sodium in dry ether. The reaction produces a compound used in fuels and perfumes.
 - (i) Name the reaction taking place in this case.
 - (ii) Write the balanced chemical equation for the reaction between bromobenzene and methyl bromide.
5. Identify the compounds in the following reactions:



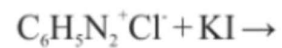
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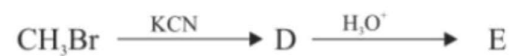
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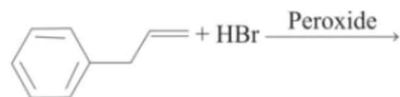
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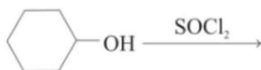
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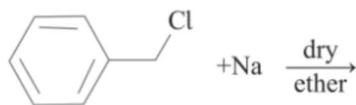
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viii



ix



Name reactions

1. Wurtz reaction
2. Fittig reaction
3. Wurtz Fittig reaction
4. Swarts reaction
5. Finklestein reaction

Alcohols, Phenols and Ethers

Reasoning questions

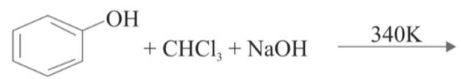
Give reason for the following:

1. Alcohol reacts with sodium metal whereas ether do not.
2. Lower alcohols are soluble in water while higher alcohols are not.
3. Boiling point of ethers is much lower than those of alcohols of comparable molecular masses.
4. Out of t-Butyl alcohol and n-Butanol, which will undergo acid-catalysed dehydration faster and why?
5. PCl_5 reacts with ethanol to form chloroethane. However, with phenol, it does not give chlorobenzene but gives triphenyl phosphate. Explain.
6. Preparation of ethers by acid dehydration of secondary or tertiary alcohols is not a suitable method. Give reason.
7. Explain the fact that in aryl alkyl ethers the alkoxy group activates the benzene ring towards electrophilic substitution.
8. While separating a mixture of o- and p-nitrophenols by steam distillation, name the isomer which is steam volatile. Give reason.
9. Dehydration of alcohols to form alkenes is always carried out with conc. H_2SO_4 and not with conc. HCl or HNO_3 . Explain.
10. Give reason:
 - (i) Phenol has a smaller dipole moment than methanol.
 - (ii) Phenol is more acidic than alcohol.
 - (iii) Phenol undergoes electrophilic substitution reactions faster than benzene.
 - (iv) Phenol does not undergo protonation easily
 - (v) Pure phenol is a colourless solid, but it is converted into pink after some time.
11. Explain why alkyl aryl ether directs incoming substituents to ortho and para positions.
12. The K_a for p- nitro hydroxybenzene is 6.9×10^{-8} whereas for o-nitro hydroxybenzene, it is 6.0×10^{-8}

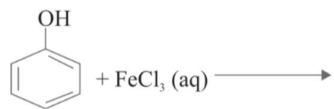
Compound identification

1. A compound A ($\text{C}_4\text{H}_{10}\text{O}$) is optically active, on mild oxidation it gives compound B but on vigorous oxidation it gives compound C. The compound 'C' along with 'D' are also formed from 'B' by reacting with iodine in the presence of alkali. Deduce the structures of 'A', 'B', 'C' and 'D'.
2. An ether 'A' ($\text{C}_5\text{H}_{12}\text{O}$) when heated with excess of hot concentrated HI produces two alkyl halides which on hydrolysis form compounds 'B' and 'C'. Oxidation of B gives an acid 'D', whereas oxidation of C gives a ketone 'E'. Deduce the structure of A, B, C, D and E.
3. Ethereal solution of an organic compound 'X' when heated with Mg gave 'Y' which on treatment with CH_3CHO followed by acid hydrolysis gave 2-propanol. Identify the compound 'X'. What is 'Y' known as?
4. Identify the compounds formed:

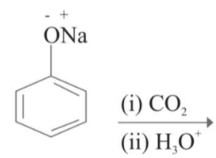
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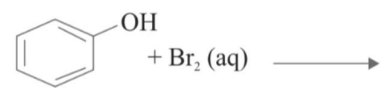
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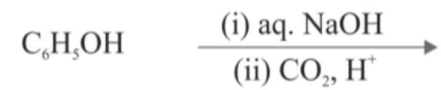
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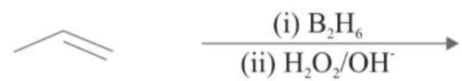
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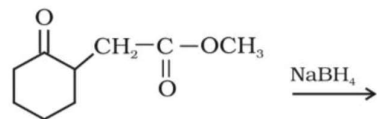
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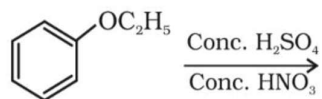
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IX



X



Name reactions

1. Lucas Test
2. Kolbe's Reaction (Kolbe-Schmitt Reaction)
3. Reimer-Tiemann Reaction
4. Williamson Ether Synthesis
5. Friedel craft's alkylation and acylation

INFORMATICS PRACTICES

1. Do the text book exercise of chapter 4 SQL FUNCTIONS in informatics practices register .
2. For the practical file make worksheets having at least five queries each from chapter 3 and 4 on following concepts
 - a) Create table,Alter table
 - b) Insert ,Delete and Update records
 - c) SQL Select Statement ,where clause and operators
 - d) SQL functions -date and time ,string , numeric
 - e) SQL functions -max,min,count, avg,sum
 - f) SQL Select -order by ,Group by (having)

3. Theme Based :- Create a user interface to collect data to perform data analysis on factors responsible for the climate changes in any four urban and rural states of India. Use a visual library of python to make graphical representations like bar graphs , scatter plot etc.

ARTIFICIAL INTELLIGENCE

- 1) **AI CAPSTONE PROJECT + PROJECT DOCUMENTATION** (As the per guidelines given you in class)
- 2) Consider the following information:

In 2016, a survey found that India has about 2.6 million STEM graduates. The percentage of women at the various IITs are as follows:

IIT Kanpur- 6.5%

IIT Guwahati- 6.3%

IIT Delhi- 10%

IIT Bombay- 10%

IIT Mandi- 14%

Few reasons for this abysmal number are:

- **Women face gender bias in performance evaluation/jobs**
- **Young marriage age**
- **Pressure of handling household chores as well as excelling at the job**

Create an effective data story with an effective visual and compelling narrative about plight of women in STEM in India

BIOLOGY

1. Select a topic for investigatory project report and make an outline of project report including the following headings:
 - Theory
 - Materials Required
 - Procedure
 - Observations/Observation Table

- Conclusion
- Result

2. Make a Broucher containing information about sexual reproduction in flowering plants, pictures of male and female reproductive parts and gametogenesis.
3. Do the given assignment in your Biology notebook:

ASSIGNMENT

1. Due to congenital defect, a woman does not have fimbriae in the fallopian tube. How will it affect her?
2. What is the difference between spermatogenesis and spermiation?
3. What is the role of LH in a human male and female?
4. Justify with reason:
 - a. Corpus luteum secretes large amounts of progesterone if egg is fertilized.
 - b. During pregnancy there is an increase in the levels of hormones like estrogen, progesterone, cortisol, prolactin, thyroxine, etc. in maternal blood.
 - c. Colostrum is absolutely essential for the newborn.
 - d. Placenta can be referred to as 'transporting organ'.
5. List out the sequence of events after fertilization until implantation of the human embryo.
6. How many primary follicle will be there at the time of puberty in the human ovary?

COMPUTER SCIENCE

1. Do the textbook exercises of chapter two functions and chapter three exception handling in the computer science register.
2. For the practical file do programs on the following:-
Program concepts for functions:-

Types of Arguments

Scope of Variable

Passing mutable/immutable types as parameters

Program concepts for exception handling

Program concepts for List as Stack

3. Theme Based :- Create a user interface to collect data to perform data analysis on factors responsible for the climate changes in any four urban and rural states of India. Use a visual library of python to make graphical representations like bar graphs , scatter plot etc.

ENGLISH

_____ENGLISH PROJECT- a compilation of the work during the process of working on their ALS Project.

CONTENT OF THE PROJECT FILE:

The project file will include the following and in this sequence only.

- Cover page, with the title of the project, school details and details of the student.
- Certificate of Completion under the guidance of the teacher.
- Objectives of the topic.
- Action Plan for the completion of assigned tasks (steps involved in doing the project)
In 800-1000 words essay/report
- Student REFLECTIONS (what new learning experience/outcome you have achieved after completing the project)
- Paste relevant pictures/ photographs that capture positive learning experience of the students (collages/pics from various online sources)
- List of Resources/Bibliography (Last page of the project file)

Roll Nos.	LIST OF TOPICS/THEMES
2, 6 & 10	<p>THE LAST LESSON- FREEDOM OF SPEECH AND EXPRESSION</p> <ul style="list-style-type: none"> ➤ Linguistic chauvinism ➤ Importance of Language ➤ Globalization of Language ➤ Franco-Prussian War ➤ Historical References of Events wherein linguistic identity was threatened/snatched <p style="text-align: center;">OR</p> <p>Watch the 'The Story of Plastic'. It is a searing expose. Make a project on "Plastic Menace'</p> <ul style="list-style-type: none"> ➤ Uncover the ugly truth behind plastic pollution ➤ Environmental damage created by plastic ➤ Human Rights abused that occur throughout the lifestyle of plastic ➤ False solution of plastic recycling. ➤ Initiative launched by Union Environment Minister to stop the plastic menace ➤ info graphic to show the increase of the use of plastic ➤ some state/ countries who are successful in reducing the use of plastic cutting from Newspaper/Journals to show the impact of Plastic views about plastic ban
4,8,11 & 26	<p>LOST SPRING-LIFE IN A SLUM</p> <ul style="list-style-type: none"> ➤ Research and case study of a slum. ➤ Life of the people in a slum ➤ Education ➤ Health and Infrastructure ➤ Government Initiatives ➤ Role of youth in the upliftment of the weaker sections of the society ➤ Comparative Study of Slums ➤ Slums of yesterday turned to cities of today. <p style="text-align: center;">OR</p> <p>MIGRATION</p> <ul style="list-style-type: none"> ➤ Changing Pattern of Migration ➤ Women migration in India is increasing at a faster pace than men Why?

	<ul style="list-style-type: none"> ➤ Plight of Migrants (even talk of the plight of the migrants during the pandemic) ➤ Info graphic description (No., reason, condition) ➤ Take incident from (lost spring) talk of the callousness of society and the political class towards the sufferings of the poor
1, 5, 15 & 18	<p>DEEP WATER- PHOBIA</p> <ul style="list-style-type: none"> ➤ Phobias and fears of people. ➤ Psychological and emotional impact. ➤ How to overcome. ➤ Impact on one's life and society ➤ Case Study <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ➤ Sacrifices and sufferings faced by the Indian unsung martyrs for gaining freedom. ➤ Freedom fighters are epitome of bravery and their lives personify lessons of supreme struggle and endurance (enormous impact on the children) ➤ Moral lesson learnt from freedom fighters ➤ Qualities they have (courage, independent thinking, humility, empathy, determination—) ➤ Their contribution to Indian freedom ➤ Mention at least 5 unsung martyrs and their role in gaining freedom
7, 17, 22 & 31	<p>RATTRAP-THE STUDY OF CRIME AND CRIMINALS</p> <ul style="list-style-type: none"> ➤ Circumstances that lead to crime. ➤ Case Study ➤ Corrective Measures ➤ Impact of Criminal Behaviour on Society ➤ How to bring them into mainstream. ➤ Attitude of society towards criminals. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ➤ Hero worshipping/ Fantasizing/Ego ideal. Are teenagers justified in their act of hero-worship'? ➤ Adolescence a period of change/ transitional period/period of unrealism/ time of search for identity ➤ What is hero worshipping for adolescent? ➤ Is hero worshipping/fantasising good or bad? ➤ Meaning of adolescent fantasising ➤ Hero worship is related with which stage of development ➤ Are teenagers justified with their hero worship? ➤ Purpose of ego ideal

	<ul style="list-style-type: none"> ➤ What attracts the child to hero worship? ➤ Hero worshipping in India is too big. Why? ➤ What are some potential dangers of hero worship?
12, 20, 25 & 33	<p>INDIGO</p> <ul style="list-style-type: none"> ➤ Condition of Farmers in Champaran-Then and Now ➤ Farm Bill Agitation ➤ Gandhi's Contribution ➤ Other Political Leaders who brought about a change in the lives of farmers. ➤ Farmer Protection Laws in India ➤ Condition of Farmers in India vis-a-vis world. ➤ Future Prospects-Growth-Suggestions. <p style="text-align: center;">OR</p> <p>PLIGHT OF OLD AGE PEOPLE [My Mother at sixty-six]</p> <ul style="list-style-type: none"> ➤ About the Poetess (with photos) ➤ Poetess' Personal Experience - Common Paradox of Human Relationships ➤ Portrayal of Sensational Separation Between a Mother and a Daughter ➤ Plight of Old Age People : Ugly Truth About Old Age (with photos) ➤ Reasons Behind the Need of Old Age Homes ➤ Respect for Elderly Parents ➤ Efforts for Stress-Free and Secured Life of Aged People ➤ Visit to an Old Age Home (photos of some aged people living in such homes) ➤ Positive and Negative Opinions of Aged People Living in Old Age Homes ➤ How to Strike a Balance Between Duties and Responsibilities of children and Society ➤ Data Regarding Miserable State of Old Age People ➤ Role of Youth to Improve the Plight of Aged People ➤ Conduct an interview with an old- aged person. Prepare a Questionnaire consisting 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures).
9, 14 & 27	<p>THE ENEMY- WAR AND PEACE</p> <ul style="list-style-type: none"> ➤ To maintain peace, do we need to go to war? ➤ Impact of War on Society ➤ Predicament of War ➤ Escapism and Depression due to war. ➤ Stance of the Political Lobby and Civilians ➤ Also write a report on the basis of War related News (Ukraine-Russia war/ Israel-Iran-USA War)

	<p>OR</p> <p>Callousness of human beings towards wildlife</p> <ul style="list-style-type: none"> ➤ What should be our attitude towards animals? ➤ Reasons why we need to save wildlife ➤ Attitude of human – destruction/fragmentation/modification caused by human led activities ➤ Danger of development ➤ Instance of game hunting ➤ Animals who have extinct and the ones on the verge of extinction (reason) ➤ Data collection /images ➤ Involvement of affluent people (ANY BOLLYWOOD CELEBRITY ETC) ➤ Earth’s fate and the devastation of the natural world were recently put under the microscope with the release of Sir David Attenborough’s Netflix documentary ‘A Life on Our Planet’. ➤ Steps taken /needs to be taken to preserve wildlife
16, 23 &24	<p>My Mother At Sixty-six</p> <ul style="list-style-type: none"> ➤ Explain the importance of parents in the family. ➤ On the context of the poem how do you love and care your mother? ➤ Collect data about condition of old age homes in our country, living condition there, ➤ Number of old age homes in your state. ➤ Prepare a questionnaire for an interview of any elderly person. (she/he may be of your family or in your neighbourhood) <p style="text-align: center;">OR</p> <p>CHILD LABOUR IN INDIA</p> <ul style="list-style-type: none"> ➤ Definition of Child Labour ➤ Child labour: Causes and Consequences ➤ Different industries where they are employed Diamond Industry <ul style="list-style-type: none"> →Bangle making Industry →Firework or crackers →Carpet weaving →Silk manufacturing ,etc. ➤ Hazardous working conditions and kind of injuries and diseases they suffer from ➤ Initiative against child labour by Indian government & various NGOs ➤ International Labour Organisation ➤ SOS for Children of villages in India ➤ The Child Labour Prohibition and Regulation Act ,1986 ➤ Statistics showing child labour in India ➤ Ways to eliminate child labour ➤ Conduct an interview with any social activist working to stop Child

	<ul style="list-style-type: none"> ➤ Labour in India. Prepare a Questionnaire consisting 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures)
21,30, 28 & 32	<p>ON THE FACE OF IT- DISABILITY</p> <ul style="list-style-type: none"> ➤ Coping with disability ➤ Society's attitude towards disability ➤ Struggles of a disabled person ➤ Laws for the disabled ➤ Government policies for the betterment of the disabled. ➤ Need of inclusion of the disabled in the mainstream society. ➤ "When life gives you lemons, make lemonade." On the basis of this idiom watch any motivational video of any handicapped person who really showed spark in the adverse situation. Write your opinion/ views on the same. <p style="text-align: center;">OR</p> <p>ACID ATTACK : AN ATTACK ON FACE AND FUTURE</p> <ul style="list-style-type: none"> ➤ Review about some real cases of acid attacks in India (Any two) and their brief stories along with photos (if possible both before and after the acid attack) ➤ Reasons behind acid attacks ➤ Types of acids, their use and their availability ➤ Effects on survivors in terms of their <ul style="list-style-type: none"> → mental and physical health → Psychological, and social issues and medical effects ➤ Prevention ➤ Role of NGOs ➤ Regulations of acid sale ➤ Data regarding acid attacks in India ➤ Role and support of various celebrities towards the problem ➤ Latest Indian movies.... brief mention ➤ Conduct a survey with an acid attack victim and prepare a report in about 800 words (maximum 7-8 pages with figures and pictures). ➤ Watch interview of any victim. And write a report on the same.
3, 13 ,19 & 29	<p>Watch 'CNN's award-winning 'Planet in Peril' series on the environment. Write review in 500 to 1000 words highlighting the problems dealt.</p> <ul style="list-style-type: none"> ➤ Like Climate change ➤ Vanishing habitats ➤ Disappearing species ➤ Human population growth

	<ul style="list-style-type: none"> ➤ Collect pictures and articles from the journals, newspaper and science magazines showing the changes ➤ Make a comparative report showing the changes from past 20 years. ➤ Mention Role of Eight year old girl Licypriya, known as Indian 'Greta' for her passion towards the fight against climate change. (Take any other example) ➤ Mention some more names and their achievements who were the pioneers in environmental replenishment. <p style="text-align: center;">OR</p> <p style="text-align: center;">INDIGO SHARECROPPING</p> <ul style="list-style-type: none"> ➤ What is Indigo Sharecropping? (Brief history) ➤ Natural Indigo Harvesting (pictures) ➤ Dyeing technology (pictures) ➤ Chemical properties of indigo ➤ Difference between Natural and Chemical indigo ➤ Advantages of natural indigo over chemical indigo and vice versa ➤ Efforts by Gandhi to put an end to Sharecropping in Champaran ➤ Gandhi as a leader ➤ Bibliography
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NOTE: I DRAFT OF PROJECT FILE {IN SOFT COPY} TO BE SUBMITTED BY 31ST JULY, 2026
FINAL DRAFT OF THE PROJECT FILE TO BE SUBMITTED BY 15TH AUGUST, 2026

PARAMETERS OF ASSESSMENT	
1) Quality of Content	2) Accuracy of Information
3) Adherence to the specified timeline.	4) Content in respect of spellings, grammar, punctuation
5) Clarity of thoughts and ideas	6) Creativity
7) Contribution by group members	8) Knowledge and experience gained

GEOGRAPHY

1. Prepare 10 Multiple Choice Questions from each of the following chapters in Practice notebook of Geography.
 - Human Geography: Nature & Scope
 - World Population: Distribution, Density and Growth .
 - Human Development
 - Primary Activities
2. Do 5 numericals of Mean & Median each (for all series) in Practice notebook of Geography.
3. Prepare practical record file with written assignment for all chapters.
4. Explain how human population are spread across the world, highlighting densely populated areas [like parts of Asia & Europe]and sparsely populated areas [like deserts & polar regions]. Use data , graphs & map. [Do in Geography register , word limit : 200 words]

MATHEMATICS

Do these activities :

1. To verify among all rectangles of same perimeter , square has maximum area.
2. To calculate the limits of the definite integral $\int_a^b \sqrt{1-x^2} dx$ as the sum and verify it by actual integration.
3. To understand the concept of local maxima and local minima and point of inflexion.

OR

3. Project: "Slope & Area Rangoli" — Calculus meets Linear Algebra

- Concept covered:

1. **Derivatives:** Slope of tangent, increasing/decreasing, maxima/minima
2. **Determinants:** Area of triangle, collinearity of points, solving linear equations

Final product: A large A2 chart / board with a geometric rangoli design where every line is defined mathematically.

4.

a) Application in Geometry

A farmer wants to check if his 3 boundary stones at A(1,2), B(4,6), and C(k,10) lie on a straight line. He doesn't have measuring tools.

Q: What value of k will make the stones collinear? Use determinants to decide. Explain why determinant = 0 means collinear.

Tests: Formulate real problem → apply determinant condition for collinearity

b) Analysis & Error Finding

Riya solved for area of triangle with vertices (0,0), (3,0), (0,4). She wrote: $\frac{1}{2} \begin{vmatrix} 0 & 0 & 1 \\ 3 & 0 & 1 \\ 0 & 4 & 1 \end{vmatrix} = -6$

Q: Is her final answer correct for area? If not, what mistake did she make and what is the correct area? Why can determinants give negative values here?

Tests: Evaluate, identify error, interpret sign of determinant

c) Case Study: Consistency of Equations

A startup sells 3 products. The revenue equations for Jan, Feb, Mar are:

$$X + 2y + z = 10000 \quad , \quad 2x - y + 3z = 15000 \quad , \quad 4x + 3y + 5z = 35000$$

where x, y, z are prices of products.

Q: situation where "if two rows are proportional, information is repeated" makes sense.

Tests: Apply properties, justify, relate to real context

5. Higher Order Thinking

If A is a 3×3 matrix and $|A| = -2$, find: a) $|3A|$ b) $|\text{adj}(A)|$ c) $|A \cdot A^T|$

Q: A student says “ $|3A| = 3|A|$ ”. Is he correct? Use properties to explain why/why not.

Tests: Apply $|kA| = k^n|A|$, $|\text{adj} A| = |A|^{n-1}$, conceptual clarity

a) **Real-Life Application:** Rate of Change A Covid case tracker shows active cases in Delhi by

$$C(t) = 5000 + 1200t - 30t^2, \text{ where } t = \text{days since April 1, 2026.}$$

Q: a) Find the rate at which cases are changing on day 10.

b) On which day will cases stop increasing? What is the meaning of $C'(t) = 0$ here?

c) If $C''(t) < 0$ at that point, what does it tell the health department?

Tests: Convert situation \rightarrow derivative, interpret first & second derivative in context

b) **Analysis:** Increasing/Decreasing + Graph A company's profit function is $P(x) = -x^3 + 12x^2 - 21x + 100$, where x = units produced in hundreds.

Q: The manager says “more production always means more profit”. Use derivatives to test his claim for $0 \leq x \leq 10$. Identify intervals where profit increases/decreases and find the production level for maximum profit.

Tests: Use $f'(x)$ for monotonicity, apply max/min to contradict misconception

c) **Error Finding + Conceptual Clarity**

Aman did this: If $y = |x|$, then $y' = |x|x$ for all x . So at $x = 0$, $y' = 0/0 = 1$.

Q: Identify the error. Using the graph of $y = |x|$, explain why derivative at $x=0$ does not exist. What is the geometric meaning?

Tests: Evaluate reasoning, link derivative to “sharp corner” & tangent

PHYSICS

1. Draw a detailed, large-scale ray diagram of **Simple Microscope, Compound Microscope and an Astronomical Telescope** when final image is formed at D and Infinity on A4 sizesheets. Use coloured background and gel pens for the diagram. Label the diagram properly.
2. Complete the given assignments uploaded on ERP as discussed in the class.
3. Draw the graphs of all the chapters covered in the class in your assignment notebook.

PHYSICAL EDUCATION

WRITE THE FOLLOWING PRACTICALS IN YOUR FILE SUBMIT IT BY 15 JULY 2026.

1. Any one game of your choice out of the list above. Labelled diagram of field and equipment rules, terminologies & skills (basketball, football, kabaddi, kho-kho, volleyball, handball, cricket and children with special needs)
2. Fitness tests administration. (SAI Khelo India Test)
3. Procedure for Asanas, benefits and contraindication for any 5 asanas for each lifestyle disease.
4. Sports Injuries .

*Make a chart any one game of your choice out of the list above. Labelled diagram of field and equipment rules, terminologies & skills (basketball, football, kabaddi, kho-kho, volleyball, handball, cricket and children with special needs)

POLITICAL SCIENCE

1. Make a neat and informative project file on the topic assigned in the class
. Use a4 size colorful sheets.
. Paste pictures ,newspaper cuttings, articles related to the topic.
. Use data & bar graphs for comparative analysis.
2. Write an article in 200 words on the **Contemporary War Situation** in the global era and paste images from the newspapers relevant to the topic. Discuss its major impact according to the Indian perspective. Use A4 size sheets.
3. Examine the social, economic & political impacts of conflicts between different super powers around the world. Write your answer in Pol.Science notebook. Word limit : 200 words.

4. Frame 10 multiple choice questions from the following chapters:
 - I] The End of Bipolarity { Contemporary World Politics}
 - II] Challenges of Nation Building { Politics in India since Independence }

PSYCHOLOGY

ASSIGNMENT 1: Create **doodle notes** to represent the key concepts from Chapter 1 (Variation in psychological attributes) and Chapter 2 (Self and Personality) in a fun and visual way.

Guidelines:

1. Use a mix of drawings, symbols, keywords, and short phrases (avoid long paragraphs).
2. Each concept should be explained through simple visuals with minimal text.
3. Include all the major concepts from the chapter.
4. Use colors to make your notes attractive and easy to understand.
5. Keep your work neat and well-organized.

ASSIGNMENT 2- CBSE PRACTICAL: Prepare a practical file with the following guidelines: -

- I. Practical file should be prepared by students.
- II. It should be a handwritten.
- III. Practical file should include 5 psychometric tests written in proper sequence.
- IV. Practical file should include the following psychometric tests:
- V. a) RSPM b) MPI c) SCAT d) AISS e) SCQ V.
- VI. Check ERP for the practical write up content.

ASSIGNMENT 3: Read chap 1 & 2 and prepare 10 reason assertion-based questions from each of the chapters.

ACCOUNTANCY

Prepare a file and make a detailed report taking into consideration the following points:

- a) Download balance sheet of any one company as per companies act 2013 (TATA, INFOSYS, RELIANCE, domestic or international industries etc.) and take colourful print and calculate accounting ratios.
- b) Create an imaginary documents on partnership deed and its details.(with partnership firm name)
- c) Create a Performa of share certificate and write its details.

2. Prepare chart (A3) on the following topics with colourful pictures and highlighting any one of the followings:

Analysis the Performance of India's Manufacturing Sector budget 2026 with newspaper clippings.

OR

Analysis India's electric car market and its growth with newspaper clippings.

OR

Analysis top 10 financial news in India Jan 2026 to March 2026 with newspaper clippings.

ECONOMICS

1. Prepare two case studies (based on real life scenario) on the topic allotted to you for Annual Practical Examination 2027.
2. Watch any one classic movie from the following and write your views related to the challenges faced by Indian economy shown in the movie. Write the review in separate sheets with relevant pictures. (Raid, Swades, Guru, Mother India, Lagaan, Roti, Kapda aur Makaan)
3. Learn all the flowcharts based on methods of measuring National Income. Solve 20 numerical questions based on the topic.

In case of any query contact on my mail ID: poonamsharma1008@rediffmail.com

HINDI

ग्रीष्मकालीन गृह कार्य

सामान्य निर्देश:-

1. परियोजना कार्य A4 साइज शीट पर कीजिए.
2. सुंदर लेख ध्यान दीजिए
3. प्रथम पृष्ठ पर सभी विद्यार्थी अपना परिचय दीजिए.

4. परियोजना कार्य को MY CLEAR बैग में रखिए.

1_ निम्नलिखित में से किसी एक विषय पर सचित्र परियोजना कार्य तैयार कीजिए__

- 1- कहानी लेखन क्या है? हिंदी के प्रमुख कहानीकारों की कहानियों पर परियोजना कार्य कीजिए।
- 2 - बनारस कविता के आधार पर बनारस के बारे में लिखिए एवं सचित्र सहित बनारस की विशेषता का उल्लेख कीजिये?
- 3- भारत में ऋतु का चक्र बताइए और उनके लक्षण लिखिए तथा ऋतु संबंधी छाया चित्र बनाते हुए ऋतु की विशेषताएं भी लिखें।
- 4-हिंदी नाटक शास्त्र क्या है हिंदी के प्रमुख नाटककारों के नाटकों के बारे में परियोजना कार्य कीजिए।

5-हिंदी कविता में प्रकृति चित्रण का वर्णन कीजिए। विभिन्न कवियों की कविताओं का तुलनात्मक अध्ययन करते हुए उनकी भाषा शैली व विशेषताओं का परिचय देते हुए परियोजना कार्य कीजिए।

6- कविता लेखन किसे कहते हैं छायावादी काल के प्रमुख कवियों की कविताओं पर परियोजना कार्य बनाओ।

करवाए गए कार्य की पुनरावृत्ति कीजिए।

