



ST. THOMAS SCHOOL
INDIRAPURAM

SUMMER
HOLIDAY

HOMework

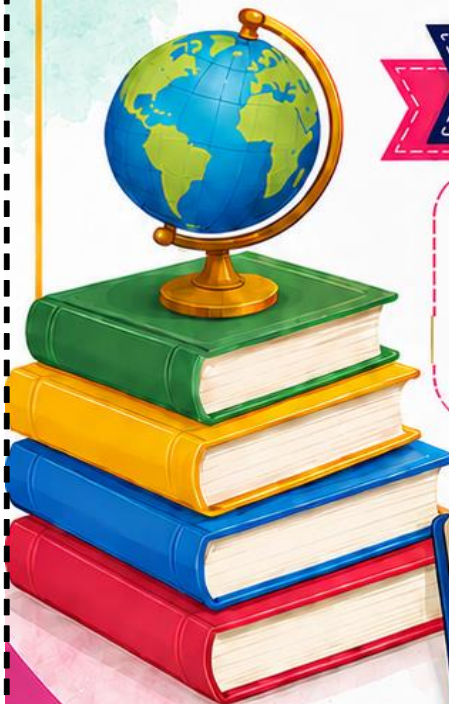
CLASS XII

“ Learn with *curiosity*,
enjoy with *happiness*,
and shine with *confidence*
this summer. ”

- ✓ Read
- ✓ Explore
- ✓ Learn
- ✓ Grow



Make the
most of your
vacation!



ENGLISH CORE 301

DIGITAL PROJECT

Topic: The Rattrap & On the Face of It

Theme: **Right time, right advice, right mentor leads to reformation.**

(1 SLIDE)

Project Slides:

1. Self- Introduction (1 SLIDE)
2. Introduction to the Theme (1 SLIDE)
3. Case Study of any Person from Real Life (MINIMUM 10 SLIDES)
4. Connection with Lessons (2 SLIDES)
5. Reflection (5 SLIDES)
6. Bibliography (1 SLIDE)

(TOTAL NOUMBER OF SLIDES=20)

HOW TO PREPARE

- **It is a PAIR activity. Select your partner judiciously and inform the respective subject teacher beforehand.**
- Read both chapters carefully.
- Understand the theme of guidance and transformation.
- Divide work equally between partners.
- Choose one real-life example/personality.
- Add short summaries and key points.
- Use simple language and proper headings.
- Include pictures, quotes, very short videos and a neat layout.
- End with reflection and bibliography.

MAIN CONTENT:

- Self-Introduction:
 - Your personal details with Roll number
- Introduction to the theme:
 - Explain how good advice and mentorship can change a person's life.
- CASE STUDY:
 - Introduction of the person
 - Past life / Early Struggles
 - Challenges Encountered
 - The Turning Point
 - Role of the Mentor
 - The Ultimate Reformation

- Achievements after Reformation
- CONNECTION WITH LESSONS:
 - Interlink both the characters from your textbook.
 - Edla reforms the peddler through kindness.
 - Mr. Lamb helps Derry gain confidence.
 - How do both show the importance of positive guidance?
- REFLECTION:

Each slide should showcase:

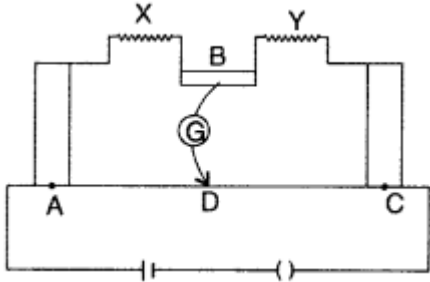
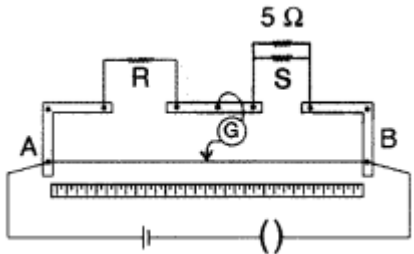
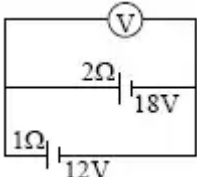
 - My Work
 - My Research
 - My Motivation
 - My Involvement
 - My Learning
- BIBLIOGRAPHY:
 - NCERT Official Website
 - English textbook and school notes.

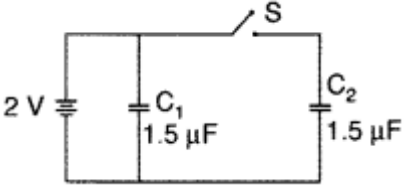
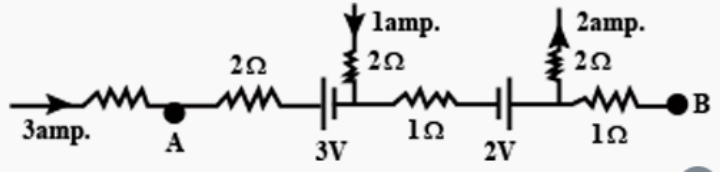
PHYSICS

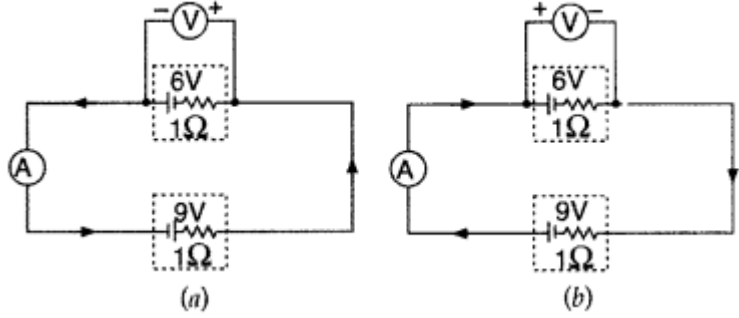
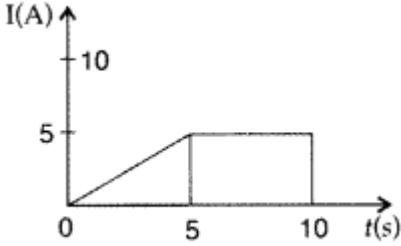
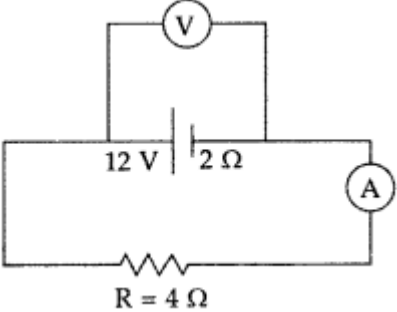
1) WORKSHEET to be done in PHYSICS COPY.

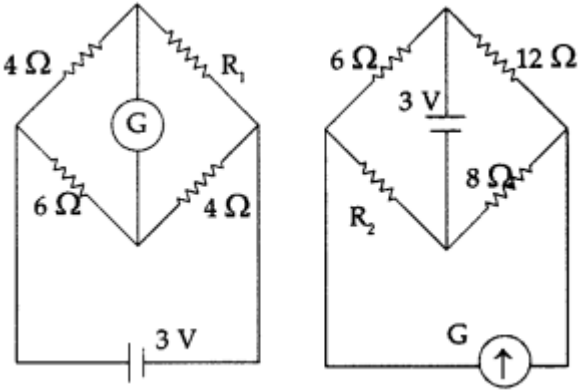
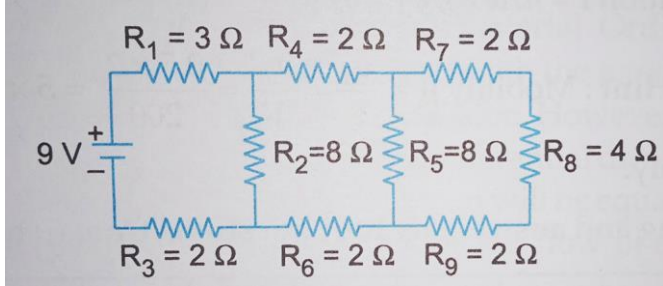
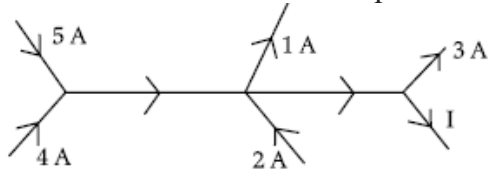
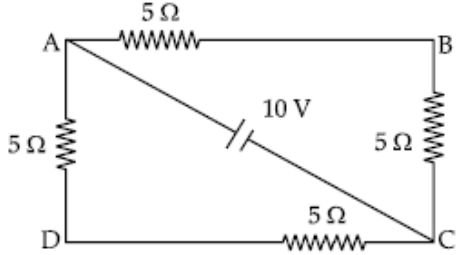
Capacitance and Current Electricity

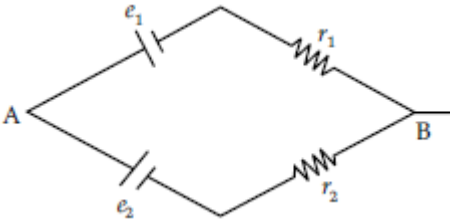
1	A wire of $20\ \Omega$ resistance is gradually stretched to double its original length. It is then cut into two equal parts. These parts are then connected in parallel across a 4.0 volt battery. Find the current drawn from the battery.
2	Estimate the average drift speed of conduction electrons in a copper wire of cross-sectional area $2.5 \times 10^{-7}\ \text{m}^2$ carrying a current of 2.7 A. Assume the density of conduction electrons to be $9 \times 10^{28}\ \text{m}^{-3}$
3	<p>The figure shows a plot of terminal voltage 'V' versus the current 'i' of a given cell. Calculate from the graph</p> <p>(a) emf of the cell and</p> <p>(b) internal resistance of the cell.</p> <div style="text-align: center;"> </div>

4	<p>The figure shows experimental set up of a meter bridge. When the two unknown resistances X and Y are inserted, the null point D is obtained 40 cm from the end A. When a resistance of $10\ \Omega$ is connected in series with X, the null point shifts by 10 cm.</p>  <p>Find the position of the null point when the $10\ \Omega$ resistance is instead connected in series with resistance 'Y'. Determine the values of the resistances X and Y.</p>
5	<p>In a meter bridge, the null point is found at a distance of 60.0 cm from A.</p>  <p>If now a resistance of $5\ \Omega$ is connected in series with S, the null point occurs at 50 cm. Determine the values of R and S.</p>
6	<p>A parallel plate capacitor with air between the plates has a capacitance of $8\ \mu\text{F}$. What will be the capacitance if the distance between the plates is reduced to half and the space between them is filled with a substance of dielectric constant 6?</p>
7	<p>Two batteries, one of emf 18 volts and internal resistance $2\ \Omega$ and the other of emf 12 volt and internal resistance $1\ \Omega$, are connected as shown. The voltmeter V will record a reading of-----.</p> 
8	<p>Figure shows two identical capacitors C^1 and C^2 each of $1.5\ \mu\text{F}$ capacitance, connected to a battery of 2 V. Initially switch 'S' is closed. After sometime 'S' is left open and dielectric slabs of dielectric constant $K = 2$ are inserted to fill completely the space between the plates of the two capacitors. How will the charge and potential difference between the plates of the capacitors be affected</p>

	<p>after the slabs are inserted?</p> 
9	<p>The potential difference between points A & B in a section of a circuit shown is-----</p> 
10	<p>Read the following text and answer the following questions on the basis of the same: Electric Toaster: Small Industries Service Institute Takyelpat Industrial Estate Imphal has designed an Electric toaster which is operated at 220 volts A.C., single phase and available in four different rated capacity such as 600 W, 750 W, 1000 W and 1250 W. The heating element is made of nichrome 80/20 (80% nickel, 20% chromium), since Nichrome does not get oxidise readily at high temperature and have higher resistivity, so it produces more heat. The element is wound separately on Mica sheets and fitted with body of toaster with the help of ceramic terminals.</p> <p>i) Heating element of the toaster is made of : (A) copper. (B) nichrome. (C) chromium. (D) nickel.</p> <p>ii) What is meant by 80/20 Nichrome? (A) 80% Chromium and 20% Nickel (B) 80% Nickel and 20% Chromium (C) Purity 80%, Impurity 20% (D) It is a mixture of Chromium and Nickel</p> <p>iii) Which one will consume more electricity? (A) 600 W (B) 750 W (C) 1000 W (D) 1200 W</p> <p>iv) Operating voltage of the device is: (A) 220 V AC, single phase (B) 220 V AC, three phase (C) 220 V DC (D) 220 V AC/DC</p> <p>v) Insulating materials used in the device are: (A) Mica (B) Ceramic (C) Mica, ceramic, Nichrome (D) Mica, ceramic</p>
11	<p>A cell of emf 'E' and internal resistance V is connected across a variable load resistor R. Draw the plots of the terminal voltage V versus</p> <p>(i) R and (ii) the current I.</p> <p>It is found that when $R = 4 \Omega$, the current is 1 A and when R is increased to 9Ω, the current reduces to 0.5 A. Find the values of the emf E and internal resistance r.</p>

12	<p>In the two electric circuits shown in the figure, determine the reading of ideal ammeter (A) and the ideal voltmeter (V).</p>  <p style="text-align: center;">(a) (b)</p>
13	<p>Figure shows a plot of current 'I' flowing through the cross-section S of a wire versus the time 't'. Use the plot to find the charge flowing in 10s through the wire.</p> 
14	<p>(a) The potential difference applied across a given resistor is altered so that the heat produced per second increases by a factor of 9. By what factor does the applied potential difference change?</p> <p>(b) In the figure shown, an ammeter A and a resistor of $40\ \Omega$ are connected to the terminals of the source. The emf of the source is $12\ \text{V}$ having an internal resistance of $2\ \Omega$. Calculate the voltmeter and ammeter readings.</p> 

15	<p>In the circuits shown in the figures, the galvanometer shows no deflection in each case. Find the ratio of R_1 and R_2.</p> 
16	<p>i. The equivalent resistance of the circuit is ----- ii. Current flowing through $3\ \Omega$ resistor is ----- iii. Current flowing through $4\ \Omega$ resistor is ----- iv. Power consumed in the circuit is ----- v. Power consumed in $4\ \Omega$ resistor is -----</p> 
17	<p>Apply Kirchoff's law to find the current I in the part of the following circuit.</p> 
18	<p>What is the potential difference between points A and B in the following circuit?</p> 
19	<p>Two batteries of emf ϵ_1 and ϵ_2 ($\epsilon_2 > \epsilon_1$) and internal resistances r_1 and r_2 respectively are connected in parallel as shown in figure:</p>

	 <p>(i) The equivalent emf ϵ_{eq} of the two cells is between ϵ_1 and ϵ_2, i.e., $\epsilon_1 < \epsilon_{eq} < \epsilon_2$. (ii) The equivalent emf ϵ_{eq} is smaller than ϵ_1. (iii) The ϵ_{eq} is given by $\epsilon_{eq} = \epsilon_1 + \epsilon_2$ always. (iv) ϵ_{eq} is independent of internal resistances r_1 and r_2.</p>
20	<p>A metal rod of length 10 cm and a rectangular cross section of $1 \text{ cm} \times \frac{1}{2} \text{ cm}$ is connected to a battery across opposite faces. The resistance will be</p> <p>(i) maximum when the battery is connected across $1 \text{ cm} \times \frac{1}{2} \text{ cm}$ faces. (ii) maximum when the battery is connected across $10 \text{ cm} \times 1 \text{ cm}$ faces. (iii) maximum when the battery is connected across $10 \text{ cm} \times \frac{1}{2} \text{ cm}$ faces. (iv) same irrespective of the three faces.</p>

- 2) Complete the written part of 8 Practical's in The PRACTIAL file.
- 3) Complete The PROJECT WORK assigned to you by the teacher
- 4) Complete the ACTIVITY Copy.

CHEMISTRY

INVESTIGATORY PROJECT TOPICS

Designing and executing experiments, systematically analysing the collected results, and finally presenting the findings through a detailed report or a well-structured presentation are all part of the process of completing a CBSE class 12 chemistry investigatory project.

SUGGESTED LIST OF PROJECTS

1. Common food adulterants in fat, butter, oil, turmeric powder, pepper, chilli powder, sugar, etc.
2. Measure the amount of acetic acid in vinegar
3. Determination of contents in cold drinks
4. Sterilization of water using bleaching powder
5. Presence of oxalate ions in guava fruit and different stages of ripening
6. Compare the rate of evaporation of different liquids.
7. Check the ions present in a toothpaste
8. Isolation of casein from milk.
9. Analysis of Honey

10. Study the effects of metal coupling on the rate of corrosion
11. Preparation of soya bean milk
12. Rate of Evaporation of Different Liquids
13. Red Cabbage as an indicator
14. The Neutralizing Ability of Antacid Tablets

NOTE – Any other suitable project can also be selected by students

MATHEMATICS

- Revise the chapters and do the following questions in your assignment notebook.

1. Find the value of $\sin 2 - \sin^{-1} 12$.
2. Find the value of the expression $2\sec^{-1}(2) + \sin^{-1} 12$.
3. Find the value of $\cot 12 \sin^{-1} 32$.
4. Write the principal value branch of $\operatorname{cosec}^{-1} x$
5. Evaluate: $3 \sin^{-1} 2 + 2 \cos^{-1} 0$.
6. Evaluate: $\sin^{-1} 3\pi + \tan^{-1} 1$.
7. Express $\sin^{-1} \sin x + \cos x$, where $2 < x < 4$, in the simplest form.
8. Prove that: $\cos^{-1} 45 + \cos^{-1} 1213 = \cos^{-1} 13365$
9. If $2a + b - a - 2b + 5c - d + 4c + 3d = 4 - 3 + 11 + 24$, then find the value of $a + b - c + 2d$.
10. If $A = \begin{bmatrix} 3 & 4 & 5 \\ 2 & & \end{bmatrix}$ and $2A + B$ is a null matrix, then find matrix B
11. If A is square matrix such that $A^2 = I$, then find $(A - I)^3 + (A + I)^3 - 7A$.
12. If $A = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ and $(3I + 4A)(3I - 4A) = x^2 I$ then find values of x .
13. Let $f = \begin{bmatrix} \cos \alpha & -\sin \alpha \\ 0 & \sin \alpha \end{bmatrix}$ and $f = \begin{bmatrix} \cos \alpha & 0 \\ 0 & 0 \end{bmatrix}$ prove that $f \cdot f = f \alpha - \beta$.
14. Express the matrix as the sum of a symmetric and skew symmetric matrix $\begin{bmatrix} 3 & -2 & -4 \\ -2 & 3 & -2 \\ -5 & -1 & 1 \end{bmatrix}$.
15. Show that $A^3 - 23A - 40I = 0$, where $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & -2 \\ 1 & 4 & 2 \end{bmatrix}$.
16. If the matrices $A = \begin{bmatrix} 1 & 2 & 2 \\ 1 & 3 & 4 \\ 1 & -1 & 3 \end{bmatrix}$, $B = \operatorname{adj} A$ and $C = 3A$, then find the value of $\operatorname{adj} BC$
17. If $x = a\theta + \sin \theta$ and $y = a(1 - f \cos \theta)$, find $\frac{d^2y}{dx^2}$ at $\theta = \frac{\pi}{2}$.
18. If $y = x^2(\cos x)^x + \sin^{-1} x$, find $\frac{dy}{dx}$.
19. If $y = x^x$, find $\frac{dy}{dx}$ at $x = 1$.
20. If $x = \cos t(3 - 2\cos^2 t)$ and $y = \sin 2t$, find the value of $\frac{dy}{dx}$ at $t = 4$.
21. If the function f defined by $f(x) = \begin{cases} 1 - \cos 2x & 2x^2, x \neq 0 \\ k & x = 0 \end{cases}$ is continuous at $x = 0$, find the value of k .
22. From a cylindrical drum containing petrol and kept vertical, the petrol is leaking at the rate of $10 \text{ cm}^2/\text{sec}$. If the radius of the drum is 25 cm and height 1 meter, find the rate at which the level of the petrol is changing when the petrol level is 80 cm
23. A kite is moving horizontally at a height of 151.5 metres. If the speed of the kite is 10 m/sec, how fast is the string being let out; when the kite is 250 m away from the boy who is flying the kite? The height of the boy is 1.5 m.

24. Find the intervals in which the function f given by $f(x) = x^3 + 1/x^3$, $x \neq 0$ is (I) increasing (II) decreasing.

25. Show that the function $f(x) = 4x^3 - 18x^2 + 27x - 7$ has neither maxima nor minima.

• **Mathematics Lab Activities:**

1. Inverse Trigonometric Functions ((ACTIVITY-4)
2. Matrices (ACTIVITY-6)
3. Continuity and Differentiability(ACTIVITY-7)
4. Applications of Derivatives (ACTIVITY-12)

BIOLOGY

1.-Write Experiments 1 to 10 in Practical file.

2.Complete the investigatory project.

3.Revise and learn Chapter -4

COMPUTER SCIENCE

1. Complete the practical File uploaded on Edunext
2. Make the projects as per the guidelines shared on Edunext
3. Practice the worksheet shared for the chapters-Revision of Python ,Functions, RDMS and mysql Interface.

ACCOUNTANCY

CBSE Project Work – Ratio Analysis & Cash Flow Statement

Session: 2026–27

Topic of the Project

Comparative Ratio Analysis and Cash Flow Statement of a Company

Objective of the Project

The purpose of this project is to help students:

- Understand the practical application of financial statements
- Analyse the financial position of a company
- Calculate and interpret accounting ratios
- Prepare Cash Flow Statement as per CBSE guidelines

- Develop analytical and presentation skills
-

Instructions for Students

Each student has to select **one company** and download/find its:

1. **Schedule III Balance Sheet**
2. **Statement of Profit and Loss (Income Statement)**

for **two consecutive years** (Current Year and Previous Year).

Students may select any company whose annual report is easily available.

Suggested Companies

- Reliance Industries
- Tata Steel
- Infosys
- ITC Limited
- Hindustan Unilever Limited

You may download annual reports from the official company websites.

Project Work Requirements

Students have to prepare the following in a proper Accountancy project file:

1. Cover Page

Include:

- Name of Student
 - Class & Section
 - Roll Number
 - Subject: Accountancy
 - Topic: *Ratio Analysis and Cash Flow Statement*
 - Session: 2026–27
-

2. Acknowledgement

Write a short acknowledgement thanking:

- School
 - Teacher
 - Parents
 - Sources used for project completion
-

3. Certificate

(To be signed by subject teacher)

4. Index

Prepare a proper index with page numbers.

5. Introduction of the Company

Include:

- Name of the company
 - Nature of business
 - Products/services offered
 - Company logo (optional)
 - Brief history of the company
-

6. Collection of Financial Statements

Attach:

- Comparative Balance Sheet
- Statement of Profit & Loss

for **Current Year and Previous Year**.

(Students have to compulsory paste printouts where figures are visible clearly.)

7. Ratio Analysis

Students are required to calculate **two ratios from each category** using financial data of both years.

Categories of Ratios

(A) Liquidity Ratios

Calculate any two:

- Current Ratio
- Quick Ratio

(B) Solvency Ratios

Calculate any two:

- Debt Equity Ratio
- Proprietary Ratio
- Interest Coverage Ratio
- Total Assets to Debt Ratio

(C) Activity / Turnover Ratios

Calculate any two:

- Inventory Turnover Ratio
- Trade Receivables Turnover Ratio
- Trade Payables Turnover Ratio
- Working Capital Turnover Ratio

(D) Profitability Ratios

Calculate any two:

- Gross Profit Ratio
- Net Profit Ratio
- Return on Investment (ROI)
- Return on Shareholders' Funds

Format for Ratio Presentation

For each ratio include:

1. Formula
 2. Calculation for Current Year
 3. Calculation for Previous Year
 4. Comparison
 5. Interpretation / Conclusion
-

Example Format

Current Ratio

Formula:

Current Assets ÷ Current Liabilities

Calculation:

(Current Year) = _____

(Previous Year) = _____

Interpretation:

The current ratio has increased/decreased which indicates better/weaker short-term solvency position of the company.

8. Comparative Analysis Table

Prepare a comparative table showing:

- Ratio Name
 - Current Year
 - Previous Year
 - Increase/Decrease
-

9. Graphical Presentation

Students must prepare:

- Bar Graphs / Charts
- Comparative graphical representation of ratios

(Use coloured pens/pencils for better presentation.)

10. Cash Flow Statement

Using the same Balance Sheet data, prepare:

Cash Flow Statement as per AS-3

Include:

- Cash Flow from Operating Activities
- Cash Flow from Investing Activities
- Cash Flow from Financing Activities

Show:

- Net Increase/Decrease in Cash
 - Opening Cash Balance
 - Closing Cash Balance
-

11. Findings and Conclusion

Write your observations regarding:

- Liquidity position
- Profitability position
- Solvency position
- Overall financial performance of the company

Also mention:

- Whether the company's financial position improved or declined.
 - And a bar graph showing all the activities net increase or decrease in it.
-

12. Bibliography

Mention the sources used:

- Annual reports
- Company websites
- Reference books

- Internet sources
-

Presentation Guidelines

- Use neat handwriting
 - Maintain proper headings and sub-headings
 - Use coloured charts and tables wherever possible
 - Draw margins properly
 - Arrange the project systematically
 - Project should be submitted in a well-decorated file
-

Important Instructions

- Ratios must be calculated correctly with formulas
 - Calculations should be shown clearly
 - Graphs must be properly labelled
 - Cash Flow Statement should follow CBSE format
 - Avoid unnecessary decoration; focus on presentation and accuracy
 - Original work will be appreciated
-

Learning Outcomes

After completing this project, students will be able to:

- Analyse financial statements practically
 - Interpret accounting ratios
 - Understand cash movement in business
 - Improve financial and analytical skills
 - Develop presentation and research abilities
-

ECONOMICS

“ EVERY SECOND SPENT WISELY BUILDS A BETTER TOMORROW”

1.	Project work <ol style="list-style-type: none">1. Select your topic.2. Do the research work from internet, news media, governmental policies, RBI bulletin, Economic survey, NITI Aayog reports, IMF/World bank reports etc. Students can use any reliable source for collecting information.3. Prepare a rough draft (make a list of content, you are going to write in project) of your project after reading the study material, which is collected after research.4. Discuss with concern teacher.5. After approval from teacher, start preparing your project.6. As per the requirement collect data, organize the data, present data in different forms like: tabular presentation, bar, pie chart, line graph etc. Collect relevant pics., newspaper cuttings etc. to support your research work.
2.	Complete work in fair notebooks. Assignments on ‘Balance of payment’, ‘Exchange rate, and ‘Environment’ will be shared in the first week of June. Solve and complete them neatly in your fair notebooks.’
3.	Do revise all the chapters. There will be surprise test of Economics in first week of July.
4.	CBSE Guidelines regarding preparation of project, are given below.

“ Enjoy your break and make the best use of your time through reading, learning, and creativity.”

Guidelines for Project Work in Economics (Class XI and XII)

The **objectives** of the project work are to enable learners to:

- probe deeper into theoretical concepts learnt in classes XI and XII
- analyse and evaluate real world economic scenarios using theoretical constructs and arguments
- demonstrate the learning of economic theory
- follow up aspects of economics in which learners have interest
- develop the communication skills to argue logically

The **expectations** of the project work are that:

- learners will complete only **ONE** project in each academic session

project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written

it will be an independent, self-directed piece of study

Role of the teacher:

The teacher plays a critical role in developing thinking skills of the learners. A teacher should:

help each learner select the topic based on recently published extracts from the news media, government policies, RBI bulletin, NITI Aayog reports, IMF/World Bank reports etc., after detailed discussions and deliberations of the topic

play the role of a facilitator and supervisor to monitor the project work of the learner through periodic discussions

guide the research work in terms of sources for the relevant data

educate learner about plagiarism and the importance of quoting the source of the information to ensure authenticity of research work

prepare the learner for the presentation of the project work

arrange a presentation of the project file

Scope of the project:

Learners may work upon the following lines as a suggested flow chart:

Choose a title/topic

Collection of the research material/data

Organization of material/data

Present material/data

Analysing the material/data for conclusion

Draw the relevant conclusion

Presentation of the Project Work¹¹

Expected Checklist:

Introduction of topic/title

Identifying the causes, consequences and/or remedies

Various stakeholders and effect on each of them

Advantages and disadvantages of situations or issues identified

- Short-term and long-term implications of economic strategies suggested in the course of research
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file
- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

Mode of presentation/submission of the Project:

At the end of the stipulated term, each learner will present the research work in the Project File to the External and Internal examiner. **The questions should be asked from the Research Work/ Project File of the learner. The Internal Examiner should ensure that the study submitted by the learner is his/her own original work.** In case of any doubt, authenticity should be checked and verified.

Marking Scheme:

Marks are suggested to be given as –

S. No.	Heading	Marks Allotted
1.	Relevance of the topic	3
2.	Knowledge Content/Research Work	6
3.	Presentation Technique	3
4.	Viva-voce	8
	Total	20 Marks

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary Policy Committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarva Shiksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of a Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – Approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – A solution to water crisis
• Vertical Farming – An alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• Aatmanirbhar Bharat	• e-Rupee (e- ₹)
• Sri Lanka's Economic Crisis	• Sustainable Development Goals (SDG's)

• Sri Lanka's Economic Crisis	• Sustainable Development Goals (SDG's)
• Environmental Crisis	• Comparative Study of Economies (Maximum three economies)
• New Education Policy (NEP) 2020: A Promise for a New Education System	• G-20: Inclusive and Action Oriented
• Amrit Kaal: Empowered and Inclusive Economy	• Cashless Economy
• Any other newspaper article and its evaluation on basis of economic principles	• Any other topic

APPLIED MATHEMATICS

Topic: Survey on Mobile Phone Usage Among Students. **Conduct a survey of at least 20 students and collect data related to their daily mobile phone usage.**

Your project should include:

1. Cover Page
2. Introduction (Importance and impact of mobile phones on students)
3. Objectives of the Survey
4. Questionnaire (8–10 relevant questions)
5. Collection and Tabulation of Data
6. Graphical Representation of Data using:
 - At least 1 Pie Charts
 - At least 1 Bar Graph
 - At least 1 Histogram
7. Statistical Analysis of the collected data:
 - Mean
 - Median
 - Mode
 - Variance
 - Standard Deviation
(Show all calculations clearly.)
8. Interpretation of Results:
 - Analyze the findings and explain what the data reveals about mobile phone usage among students.

- Comment on trends, patterns, and possible implications.

9. Conclusion

10. Bibliography

Instructions:

- Survey a minimum of 20 students.
- Use authentic data collected through a questionnaire or Google Form.
- Present all tables, graphs, and calculations neatly.
- The project should be handwritten and well-organized.
- Creativity, accuracy of calculations, and quality of interpretation will be considered during assessment.

NOTE –

1. PLEASE COMPLETE THE REGISTER WORK OF THE LESSONS TAKEN IN CLASS.
2. PREPARE FOR THE UNIT TEST – Chapter 1, 3 & 4
3. Assignment will be sent through Edunext which shall be done in the homework register.

POLITICAL SCIENCE

- **PROJECT WORK (20 marks)**

Every student has to compulsorily undertake one project on the topics from the syllabus of session 2026-27.

GENERAL INSTRUCTIONS:

1. The Project Report should be *handwritten* by the students themselves on A3/4 size sheets.
2. Students must use at least one primary evidence/ source (**immediate firsthand account of a topic from people who had direct connection with it**) to prepare the project. Speeches/newspaper cuttings/Interviews/survey etc.
3. If possible, *different forms of Art* may be integrated in the project work.
4. Use eco-friendly products without incurring too much expenditure.
5. Project content must not be less than 10 pages or exceed 15 pages.
6. All pages will be numbered, with a broad left margin.
7. Use only one face (Odd # page) to write content material. Even # pages will be utilized **only** to illustrate pictures, fact/figure & statistics (Whatever applicable/relevant to written content on the following page).
8. Wherever required prepare FOOTNOTES/'DID YOU KNOW?' fact card with lesser known but interesting facts associated with content.

PATTERN OF THE PROJECT FILE:

1. **Cover page** - School name, Project title, Session, Subject. At the bottom of the title page - write your Name (in CAPITAL) and Class (in two separate rows/Right align) followed by Roll No in the next line. **Roll No (NOT TO BE FILLED IN)**

2. **First page** - Project Title, subject, session, name of the student, class/ section
 3. **Certificate of Authenticity**
 4. **Acknowledgment**
 5. **Table of Contents** - With page numbers
 6. **Introduction** of the Topic / Purpose and aim of the project
 7. **Content:**
 - Identifying causes, events, consequences and/or remedies.
 - Various stakeholders and effect on each of them.
 - Short-term and long-term implications of strategies suggested in the course of research.
 - Check list includes validity, reliability, appropriateness and relevance of data used for research work.
 - Present material/ data/ statistics with related pictures, pie charts, bar graphs, cartoons, slogans, maps etc. **on the left side of the file (even # pages)** to make a quality project.
 - Report on primary source (with evidence)
 - **Conclusion**- Draw a relevant conclusion by mentioning the learning outcome and suggestions (if any).
 8. **Bibliography**- Mention name of the book, newspaper, magazine, website, author, publisher
 9. **SUGGESTED TOPICS FOR THE PROJECT WORK (CBSE)**
 1. NAM- 1961 to present times.
 2. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.
 3. CIS-Central Asian Republics
 4. Disintegration of USSR with special focus on Gorbachev.
 5. Arab Spring
 6. Cover the negative as well as positive aspects of relationship between India and the following countries. Focus on any one of the following (current updates should be highlighted):
 - a) Relationship between India and Russia
 - b) Relationship between India and China
 - c) Relationship between India and Pakistan
 - d) Relationship between India and Bangladesh
 7. ASEAN
 8. European Union and BREXIT
 9. BRICS
 10. SAARC
 11. India's Nuclear Policy
 12. United Nations with focus on India's candidature in Security Council.
 13. UN Agencies – UNICEF, UNESCO, WHO
 14. Pandemics: Covid 19- Its global impact (focus on worldwide cooperation and preparedness along with controversies (please collect newspaper clippings for the same)
 15. Partition of India-Theory behind it and its legacy
 16. Comparison between NITI AAYOG and Planning Commission and their contribution in India's Development.
 17. Election 2019- Rise of BJP and Downfall of Congress (1989-2019).
 18. Imposition of Emergency in India
 19. NDA III and NDA IV – Social and Economic welfare programs.
- **REVISE all the chapters completed.**
 - **Read the newspaper daily and collect news updates on India's relations with China, Russia, Pakistan, Sri Lanka, Bangladesh, Bhutan and Nepal.**

GEOGRAPHY

- Complete the Practical work (Practical File)
- Prepare the Chapter for Second Unit Test.

HISTORY

(PROJECT WORK-20 MARKS)

PROJECT WORK WILL HELP STUDENTS:

- To develop skill to gather data from a variety of sources, investigate diverse viewpoints and arrive at logical deductions.
- To develop skill to comprehend, analyse, interpret, evaluate historical evidence, and understand the limitation of historical evidence.
- To develop 21st century managerial skills of co-ordination, self-direction, and time management.
- To learn to work on diverse cultures, races, religions, and lifestyles.
- To learn through constructivism-a theory based on observation and scientific study.
- To inculcate a spirit of inquiry and research.
- To communicate data in the most appropriate form using a variety of techniques.
- To provide greater opportunity for interaction and exploration.
- To understand contemporary issues in context to our past.
- To develop a global perspective and an international outlook.
- To grow into caring, sensitive individuals capable of making informed, intelligent, and independent choices.
- To develop lasting interest in history discipline.

A FEW SUGGESTIVE TOPICS FOR CLASS XII PROJECTS:

1. The Indus Valley Civilization-Archaeological Excavations and New Perspectives
2. The History and Legacy of Mauryan Empire
3. "Mahabharat"- The Great Epic of India
4. The History and Culture of the Vedic period
5. Buddha Charita
6. A Comprehensive History of Jainism
7. Bhakti Movement- Multiple interpretations and commentaries.
8. "The Mystical Dimensions of Sufism
9. Global legacy of Gandhian ideas
10. The Architectural Culture of the Vijayanagar Empire
11. Life of women in the Mughal rural society
12. Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India
13. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity
14. The Philosophy of Guru Nanak Dev
15. The Vision of Kabir
16. An insight into the Indian Constitution
17. Comparative study of Stupas and Pillar edicts
18. Comparative study of Mughal and Vijayanagar architecture

PRESENTATION AND SUBMISSION OF PROJECT REPORT:

The following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence-
 - a. The cover page should include the title of the Project, student information, school a year.
 - b. List of contents.
 - c. Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
 - d. Introduction.
 - e. Topic with suitable heading.
 - f. Conclusions (summarised suggestions or findings, future scope of study).
 - g. Photographs (if any).
 - h. Appendix.
 - i. Teacher's observation.
 - j. Signature of the teacher.

MODE OF PRESENTATION/SUBMISSION OF THE PROJECT:

- In the first week July 2026 each student will present the research work in the Project File to the History teacher. The questions should be asked from the Research Work/ Project File of the learner.

VIVA-VOICE:

- At the end of the stipulated term, each learner will present the research work in the Project File to the External and Internal examiner.
- The questions should be asked from the Research Work/ Project File of the learner.
- The Internal Examiner should ensure that the study submitted by the learner is his/her original work.
- In case of any doubt, authenticity should be checked and verified.

THE MARKS WILL BE ALLOCATED UNDER THE FOLLOWING HEADS:

SL.NO.	COMPONENTS	MARKS ALLOTTED
1	INTRODUCTION/OVERVIEW	2
2	VARIETY OF CONTENTS	3
3	PRESENTATION	3
4	CONCLUSION	1
5	BIBLIOGRAPHY	1
6	VIVA-VOCE	10
	TOTAL	20

PSYCHOLOGY

1. Do project work according to your topic and complete all necessary work of your project file.
- 2- Do writing work of practical file that already provided you in Our Psychology group.
- 3- Do all questions of the chapter Meeting with Life Challenges in your note book.

PHYSICAL EDUCATION

PROJECT FILE WORK

A. PRACTICAL – 1

SAI KHELO INDIA FITNESS TEST

The project should include the following topics:

1. Introduction to the SAI Khelo India Fitness Test.
 2. Objectives and importance of the fitness test.
 3. Different fitness components assessed in the test.
 4. Description of various test items and their procedures.
-

B. PRACTICAL – 2

YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASE

- All Lifestyle diseases should be elaborated properly.
 - Two asana for one lifestyle disease should be written on a separate page.
 - Pictures should be pasted on the left side of each asana.
-

PRACTICAL – 3

GAME OF SPECIALIZATION

You are required to write on any one IOA recognised Sports/Game of your choice on the following headings:

- Brief history of the Game.
 - Terminologies used in the game.
 - Diagram of the court/field.
 - Specifications
- Example:*
- Badminton Racket – its description.
 - Shuttle – its description, etc.
- Rules of the game.
 - Skills (All skills used in the game).
 - Brief description of any one skill of the chosen game.

Example: Volleyball Service – Stance, Execution and Follow Through.

GENERAL INSTRUCTIONS

- Write the project neatly in your own handwriting.
- Include relevant pictures, diagrams, or charts.
- Design an attractive cover page.
- Submit the completed project file after the holidays.

HINDI

ग्रीष्मावकाश परियोजना कार्य (Summer Vacation Project)

विषय: चयनित पुस्तक के आधार पर परियोजना कार्य

कक्षा: 12वीं (हिंदी)

परियोजना कार्य के मुख्य बिंदु (Detailed Format)

1

1. भूमिका (Introduction)

- परियोजना का उद्देश्य:** इस परियोजना को तैयार करने का मुख्य लक्ष्य और इससे प्राप्त होने वाला ज्ञान।
- चुनी गई पुस्तक का संक्षिप्त परिचय:** पुस्तक का नाम, विधा (उपन्यास/कहानी-संग्रह/नाटक) और प्रकाशन वर्ष।
- लेखक का परिचय एवं साहित्यिक योगदान:** लेखक का जीवन परिचय, उनकी प्रमुख कृतियाँ और साहित्य में उनका स्थान।

उदाहरण: यदि चुनी गई पुस्तक 'गोदान' है, तो मुंशी प्रेमचंद जी के जीवन, उनके साहित्य और उनके सामाजिक दृष्टिकोण का संक्षेप में उल्लेख किया जाएगा।

2. पुस्तक का सारांश (Summary of the Book)

- कथानक का संक्षिप्त विवरण:** पूरी कहानी या विषय-वस्तु को संक्षेप में अपने शब्दों में लिखना।
- प्रमुख घटनाएँ:** कहानी को नया मोड़ देने वाली मुख्य घटनाओं का उल्लेख।
- आरंभ, मध्य और अंत:** कहानी की शुरुआत कैसे हुई, उसमें क्या उतार-चढ़ाव आए और उसका निष्कर्ष या अंत कैसा रहा?

3. प्रमुख पात्रों का चरित्र-चित्रण (Character Sketch)

- मुख्य पात्र:** कहानी के केंद्र में रहने वाले नायक/नायिका की विशेषताएँ।
- सहायक पात्र:** मुख्य कहानी को आगे बढ़ाने वाले अन्य महत्वपूर्ण पात्र।
- पात्रों का स्वभाव, संघर्ष और विकास:** पात्रों की मानसिक स्थिति, उनका जीवन-संघर्ष और समय के साथ उनके व्यवहार में आया बदलाव।

उदाहरण: 'गोदान' के संदर्भ में होरी, धनिया, गोबर और मेहता जी जैसे पात्रों की चारित्रिक विशेषताओं का विश्लेषण।

4. विषय-वस्तु एवं संदेश (Theme & Message)

1. **मुख्य विषय:** पुस्तक किस केंद्रीय समस्या या विचार पर आधारित है?
2. **सामाजिक, नैतिक, सांस्कृतिक या राष्ट्रीय संदेश:** समाज को इस पुस्तक से क्या सीख मिलती है?
3. **लेखक का दृष्टिकोण:** इस कृति के माध्यम से लेखक पाठकों तक क्या बात पहुँचाना चाहता है?

5. भाषा-शैली (Language & Style)

1. **भाषा का रूप:** लेखक की भाषा सहज है, तत्सम-प्रधान है, या उसमें आंचलिक (क्षेत्रीय) शब्दों का प्रयोग है?
2. **शिल्प और सौंदर्य:** मुहावरों, लोकोक्तियों, अलंकारों और सूक्तियों का प्रयोग।
3. **संवाद शैली:** पात्रों के आपसी संवाद कितने प्रभावशाली और सजीव हैं?

6. सामाजिक एवं सांस्कृतिक पक्ष (Socio-Cultural Aspect)

1. **समकालीन समाज:** पुस्तक में जिस कालखंड का वर्णन है, उस समय का समाज कैसा था?
2. **आर्थिक स्थिति:** लोगों की आजीविका के साधन और आर्थिक विषमता (अमीरी-गरीबी का अंतर)।
3. **स्त्री-पुरुष संबंध:** समाज में महिलाओं की स्थिति और पारिवारिक ढांचा।
4. **शहरी बनाम ग्रामीण जीवन:** ग्रामीण परिवेश और शहरी चकाचौंध का तुलनात्मक चित्रण।

7. पुस्तक की विशेषताएँ (Significance of the Book)

1. **साहित्यिक महत्व:** यह पुस्तक हिंदी साहित्य में क्यों विशिष्ट स्थान रखती है?
2. **पाठकों पर प्रभाव:** इस पुस्तक का आम जनमानस पर क्या प्रभाव पड़ा?
3. **वर्तमान प्रासंगिकता:** आज के आधुनिक समय में यह पुस्तक कितनी सटीक और उपयोगी है?

8. व्यक्तिगत प्रतिक्रिया (Your Opinion)

1. **आत्मबोध:** इस पुस्तक को पढ़ने के बाद आपने व्यक्तिगत रूप से क्या सीखा?
2. **पसंदीदा पात्र/प्रसंग:** आपको कौन-सा पात्र या कहानी का कौन-सा हिस्सा सबसे अच्छा लगा और क्यों?
3. **वैचारिक परिवर्तन:** इस पुस्तक ने आपके सोचने के नजरिए को किस प्रकार प्रभावित किया?

9. निष्कर्ष (Conclusion)

1. **परियोजना का सार:** पूरे अध्ययन और विश्लेषण का निचोड़।
2. **अंतिम विचार:** पुस्तक के प्रति आपकी अंतिम संपुष्टि या समीक्षा।

10. संदर्भ सूची (Bibliography)

1. **मूल स्रोत:** पुस्तक का नाम, लेखक का नाम और प्रकाशक (Publisher) का नाम।

2. अन्य स्रोत: यदि सहायता ली गई हो, तो संबंधित वेबसाइट, पत्रिकाओं या आलोचनात्मक पुस्तकों के नाम।

(Index Format)

क्रम संख्या (S.No.)	मुख्य बिंदु / शीर्षक (Topics)	पृष्ठ संख्या (Page No.)	दिनांक (Date)	शिक्षक के हस्ताक्षर (Sign)
1.	छात्र का घोषणा-पत्र (Declaration)	1		
2.	आभारोक्ति (Acknowledgement)	2		
3.	परियोजना का उद्देश्य (Objective)	3		
4.	भूमिका (Introduction)	4 - 5		
5.	पुस्तक का सारांश (Summary)	6 - 8		
6.	प्रमुख पात्रों का चरित्र-चित्रण (Character Sketch)	9 - 11		

क्रम संख्या (S.No.)	मुख्य बिंदु / शीर्षक (Topics)	पृष्ठ संख्या (Page No.)	दिनांक (Date)	शिक्षक के हस्ताक्षर (Sign)
7.	विषय-वस्तु एवं संदेश (Theme & Message)	12 - 13		
8.	भाषा-शैली (Language & Style)	14		
9.	सामाजिक एवं सांस्कृतिक पक्ष	15 - 16		
10.	वर्तमान समय में प्रासंगिकता	17		
11.	व्यक्तिगत प्रतिक्रिया (Your Opinion)	18		
12.	निष्कर्ष (Conclusion)	19		
13.	संदर्भ सूची (Bibliography)	20		

परियोजना को आकर्षक और प्रभावशाली बनाने के विशेष सुझाव:

कवर पृष्ठ (Cover Page): परियोजना फ़ाइल के मुख्य पृष्ठ पर पुस्तक का सुंदर चित्र या उसका आवरण (Cover) चिपकाएँ।

लेखक का चित्र: लेखक के परिचय वाले पृष्ठ पर उनकी एक स्पष्ट तस्वीर अवश्य लगाएँ।

महत्वपूर्ण उद्धरण (Quotes): पुस्तक के कुछ प्रसिद्ध संवादों या सूक्तियों को रंगीन पेन से 'बॉक्स' बनाकर लिखें।

5

रचनात्मक सजावट: मुख्य बिंदुओं को दर्शाने के लिए फ्लोचार्ट (Flowchart) या माइंड मैप (Mind Map) का प्रयोग करें।

सुलेख: पूरी परियोजना में लिखावट (Handwriting) साफ-सुथरी, स्पष्ट और त्रुटिहीन होनी चाहिए। शीर्षकों (Headings) के लिए गहरे रंगों का प्रयोग करें।

BANKING

Complete project file, practical file as explained in class.

PRACTICAL GUIDELINES FOR CLASS XII

Assessment of performance:

In class XII: One Internal and one External examiner, assigned for the conduct and assessment of Practical Examinations each in Senior Secondary School

Curriculum (Under NSQF). Question for the viva examinations should be conducted by both the examiners. Questions are to be more of General nature, project work or the curriculum. Investigatory Project especially those that show considerable amount of effort and originality, on the part of the student, should get suitable high marks, while project of a routine or stereotyped nature should only receive MEDIOCRE marks.

Procedure for Record of Marks in the Practical answer-books:

The examiner will indicate separately marks of practical examination on the title page of the answer-books under the following heads:-

Project -10 marks

Students may be assigned Project from the practical list is given below.

Viva based on Project -05 marks

The teacher conducting the final practical examination may ask verbal questions related to the project, if any, done by the student. Alternatively, if no project has been assigned to the students, viva may be based on questions of practical nature from the field of subject as per the Curriculum.

Practical File -15 Marks

Students to make a power point presentation / assignment / practical file / report.

Instructor shall assign them any outlet to study the elements in retailing.

Suggested list of Practical –

1. Visit nearest branch of any Bank and collect details regarding different modes of transferring funds from one person to another. Also collect sample documents/forms for each of such modes of transfer. Tabulate the advantages and disadvantages for each mode of payment system.
2. Download the Balance Sheet of a public sector bank and a private sector bank as at 31 st March of current year from their websites and compare the composition of their deposits like % of demand deposits to total deposits, Profitability, composition of their loans, Total interest earned etc. and comment which sector bank is better managed from profit point of view.
3. Visit nearest branch of any Bank and collect details regarding different modes of transferring funds from one person to another. Also collect sample documents/forms for each of such modes of transfer. Tabulate the advantages and disadvantages for each mode of payment system.
4. Download the Balance Sheet of a public sector bank and a private sector bank as at 31 st March of current year from their websites and compare the composition of their deposits like % of demand deposits to total deposits, Profitability, composition of their loans, Total interest earned etc. and comment which sector bank is better managed from profit point of view.

Demonstration of skill competency in Lab Activities -10 marks

Guidelines for Project Preparation:

The final project work should encompass chapters on:

- a. Introduction,
- b. Identification of core and advance issues,
- c. Learning and understanding and
- d. Observation during the project period.

WEB APPLICATIONS

1. Create a short 1.30 min to 2 min. educational video using Canva on the topic assigned to you. The video must include:

- An engaging opening title with background music.
- Animated text explaining concepts related to the topic.
- High-quality stock videos or elements
- A closing slide encouraging viewers to check their knowledge.

S.No	Student Name	Topic
1	Jigyasa Kumari	Your Phone is Leaking Data! 5 Essential Cyber Hygiene Habits
2	Pragyan Singh	More Than Robots: How AI and ML Predict Your Next Move
3	Sharanya	When Your Toaster Talks: The Smart World of IoT
4	Shrikant	The Dark Reality of Modern Cyber Crimes
5	Tejas	Home Office or Hacker's Paradise? Secure Your Remote Workspace

2. Create an E-Poster(Canva or Adobe Express)

S.No	Student Name	Topic
1	Jigyasa Kumari	"Stop, Think, Click": A poster on identifying suspicious links in emails and SMS.
2	Pragyan Singh	"The 5 S's of Cyber Safety": (Source, Secret, Secure, Settings, Software).
3	Sharanya	"Update to Protect": A poster highlighting why clicking "Remind me later" on software updates is dangerous.
4	Shrikant	"Report Cyber Crime": A resource poster showing help-line numbers and website portals for reporting incidents.
5	Tejas	"Your OTP is for YOU only": A strict warning poster against sharing One Time Passwords with anyone.

c. Create a presentation-

1	Jigyasa Kumari	Plagiarism & Digital Footprints
2	Pragyan Singh	Data Privacy
3	Sharanya	Data Security
4	Shrikant	Cybercrimes
5	Tejas	Cyber Laws in India

1. Title Slide
2. Introduction
3. Slides as per the Topics
4. Conclusion
5. Acknowledgement

Take a print on A4 sheet for E-poster and slide(2 slides on one page -Portrait mode)

TOURISM

Project Topic-Crafting an “Incredible India” Travel Itinerary

PAINTING

1. Any Still life on A3 sized paper
2. One Nature Study with paint
3. One Fantasy.
4. One Folk Art
5. One Artist Work.

Revise the lessons below:

1. Pahari School of Art
2. Rajasthani School of Art

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