SHAMBHU DAYAL GLOBAL SCHOOL

SUMMER'S HOLIDAYS HOMEWORK

SESSION 2026-27

CLASS XI

SUBJECT	RESEARCH BASED TOPICS
ENGLISH	**Holiday Homework: Research Topics** 1. The importance of reading newspapers. ROLL-NO-1&41 2. How social media affects teenagers. ROLL-NO-2&42 3. The role of English as a global language. ROLL-NO-3&43 4. Women empowerment in modern India. ROLL-NO-4 &44 5. The impact of technology on education. ROLL-NO-5&45 6. Pollution and ways to control it. ROLL-NO-6& 46 7. The life and message of Mahatma Gandhi. ROLL-NO-7&47 8. The value of discipline in student life. ROLL-NO-8&48 9. The power of books and libraries. ROLL-NO-9&49 10. The dangers of online addiction. ROLL-NO-10&50 11. The role of youth in nation building. ROLL-NO-11&51 12. Indian festivals and their cultural importance. ROLL-NO-12&52 13. Climate change and its effects. ROLL-NO-13&53 14. The importance of good communication skills. ROLL-NO-14&54 15. Career choices after Class 10. ROLL-NO-15&55 16. The contribution of children to a better society. ROLL-NO-16&56 17. The importance of healthy habits. ROLL-NO-17&57 18. The future of artificial intelligence. ROLL-NO-18&58 19. Adventure sports: benefits and risks. ROLL-NO-19 &59 20. The importance of trees and afforestation. ROLL-NO-20&60 21. If I were the Prime Minister for a day. ROLL-NO-21 22. A day when electricity disappeared from my city.ROLL-NO-22 23. My dream school in the future. ROLL-NO-23 24. The world without books. ROLL-NO-24 25. If trees could talk. ROLL-NO-25 26. A letter to my future self. ROLL-NO-26 27. A journey to space. ROLL-NO-27 28. The most unforgettable day of my life. ROLL-NO-28 29. A world without mobile phones. ROLL-NO-29 30. The voice of a raindrop. ROLL-NO-30 31. What I would do if I found a magical notebook. ROLL-NO-31 32. A conversation between the sun and the moon. ROLL-NO-32 33. The life of a schoolbag. ROLL-NO-33 34. If animals could speak English. ROLL-NO-34 35. A tree's diary for one week. ROLL-NO-35 36. The day I became invisible. ROLL-NO-36 37. A robot as my best friend. ROLL-NO-37 38. My city after 50 years. ROLL-NO-38

39. The story of a lost umbrella. ROLL-NO-39
40. A letter from Earth to human beings. ROLL-NO-40

How To Do It

Follow these steps for each topic. Write in your own words and keep the language simple and clear. Use A4 sheets, proper headings, and neat handwriting.

1. Write the topic title at the top.
2. Add an introduction of about 100 words.
3. Write the main points under subheading.
4. Include facts, examples, or short quotation if relevant.
5. Explain your topic with clarity add data / facts/ examples
6. Conclusion.
7. Use drawings, newspaper clippings, or pictures only if they support the topic.
8. Mention sources at the end, such as books, newspapers, or websites used.
9. Keep the total work within the word limit of 2000 words.

Format To Follow

Use this simple pattern for every topic.

- Title
- Introduction
- Main points / research findings
- Examples / facts
- Conclusion
- Sources

Assessment Sheet

You can use this as a teacher-friendly assessment rubric.

Criteria	**Marks**
Topic relevance and research quality	10
Content accuracy and originality	10
Language and expression	10
Organization and neat presentation	10
Creativity and visuals	10
Total	50

Student Instructions

- Use **simple English** and write in your own words.
- Do not copy long paragraphs from the internet.
- Make the work neat and error-free.
- Submit on time in a folder or file, as instructed by the teacher.
- Check spelling, punctuation, and paragraphing before submitting.

MATHS	**Project Title Suggestions** • "Understanding Sets Through Venn Diagrams" • "Applications of Sets in Daily Life" • "Operations on Sets Using Venn Diagrams" • "Survey Analysis Using Sets" **Content** **A. Introduction to Sets** Include: • Definition of Sets • Types of Sets: o Empty Set o Finite & Infinite Sets o Equal Sets o Subsets o Universal Set **B. Venn Diagram** Explain: • Meaning of Venn Diagram • Symbols used in sets Common symbols: • Union: $A \cup BA \backslash cup\ B$A∪B • Intersection: $A \cap BA \backslash cap\ B$A∩B • Complement: $A'A'$A′ • Difference: $A - BA$ - BA−B **C. Operations on Sets** **1. Union of Sets** $A \cup BA \backslash cup\ B$A∪B Explain with example and Venn diagram. **2. Intersection of Sets** $A \cap BA \backslash cap\ B$A∩B Explain with example and Venn diagram. **3. Complement of a Set** $A' = U - AA' = U$ - AA′=U−A **4. Difference of Sets** $A - BA$ - BA−B **D. Real-Life Applications** Students can include: • Students playing cricket and football • Favourite subjects survey • Mobile app usage • Food preferences Create surveys and represent data using Venn diagrams. **E. Practical Activity** Conduct a survey of 20–30 students and analyze: • Students who like Maths • Students who like Science • Students who like both Draw proper Venn diagrams and conclusions.

F. Conclusion

Write what you learned from the project and importance of sets in daily life.

G. Bibliography

Mention sources:

- NCERT Mathematics Book
- Teacher Notes
- Educational websites

Presentation Instructions

- Use A4 sheets/file.
- Draw neat Venn diagrams using colors.
- Maintain clean handwriting.
- Use proper headings and margins.
- Include at least 4–5 diagrams.

Assessment Rubrics (50 Marks)

Criteria	Description	Marks
Content Accuracy	Correct mathematical concepts and explanations	10
Venn Diagram Representation	Neatness and correctness of diagrams	10
Creativity & Presentation	Attractive layout, charts, colors, organization	10
Practical Survey & Analysis	Real-life application and interpretation	10
Viva/Explanation	Understanding and explanation of project	5
Timely Submission & File Maintenance	Proper completion and submission	5
Total		**50**

PHYSICS

Project 1: Units & Measurement — Conceptual Mastery & Diagram Study

Introduction

Part A — Diagram & Labelling (20 Marks)

- Vernier Callipers Diagram
- Screw Gauge Diagram
- Significant Figures Illustration
- SI Base Quantities Concept Map

Part B — Written Analysis Questions (30 Marks)

- Q1: Need for Units & SI System Table
- Q2: Base Choice & Coherent Systems
- Q3: Simple Pendulum Derivation & Limitations
- Q4: Systematic vs Random Errors
- Q5: Error Definitions & Value Calculation
- Q6: Significant Figures Rules & Examples
- Q7: Rounding Off & Arithmetic Operations
- Q8: Unit Conversion (Saransh)
- Q9: Precision vs Accuracy Analysis
- Q10: Dimensional Homogeneity & Equation Checks

Project 2: Dimensional Analysis — Data Investigation & Problem Solving

Introduction

Part A — Data Analysis (25 Marks)

- Pendulum Experiment Dataset
- Q1: Value Calculations for g
- Q2: Mean Value & Percentage Error
- Q3: Maximum Deviation Identification
- Q4: Absolute Error Calculations
- Q5: Final Expression with Significant Figures
- Q6: Precision Insights
- Q7: Error Propagation & Variable Importance
- Q8: Moon Gravity Calculations
- Q9: Systematic Errors & Reduction Strategies

Part B — Research Essay (25 Marks)

- Galileo's Experiments & the SI Second
- Buckingham Pi Theorem & Engineering Applications
- CGS vs SI Systems & Unit Conversions
- 2019 SI Redefinition & the Kibble Balance
- Conclusion: Theoretical Predictions via Dimensions

Project 3: Motion in 1D — Kinematics Derivations & Applications

Introduction

Part A — Derivations & Structured Problems (25 Marks)

- Q1: Calculus Derivations of the Three Equations of Motion
- Q2: nth Second Formula & Odd Number Ratio Proof
- Q3: Vertical Projectile Motion Parameters
- Q4: Relative Velocity & Train Intercepts
- Q5: Calculus-Based Position Function Analysis

Part B — Concept Application & Diagram Study (25 Marks)

- Q1: Kinematic Distinctions & Average Vector Conditions
- Q2: Simultaneous Landing Two-Stone Problem & Graphing
- Q3: Uniform Acceleration Graph Profiles (x-t, v-t, a-t)
- Q4: Car Braking Dynamics, Reaction Time & Road Conditions
- Q5: Instantaneous Velocity Limits & Parabolic Evaluation

Project 4: Graphical Analysis of Motion — Scientific Infographic

Introduction

Part A — Data Analysis (25 Marks)

- Velocity-Time Motion Sensor Dataset
- Q1: Phase Identification & Acceleration Calculations
- Q2: Constant Velocity Implications on Net Force
- Q3: Area Calculations for Cumulative Displacement
- Q4: Graph Construction & Curve Analysis
- Q5: Mass Dynamics: Net Force & Engine Power
- Q6: Two-Car Kinematic Intercept Comparison

Part B — Scientific Infographic (25 Marks)

- Central Panel: Position-Time (x-t) Geometries
- Second Panel: Velocity-Time (v-t) Profiles
- Visual Comparison Table: Slopes, Areas & Curves
- Real World Connections: Lift, Bouncing Ball & Sprinter
- 'Did You Know?' Historical & Practical Facts

Project 5: Real-World Kinematics — Applications & Investigative Essay

	Introduction Part A — Investigative Data Study (25 Marks) • Vehicle & Rocket Parameter Dataset • Q1: Vehicle Total Stopping Distance Evaluation • Q2: Wet vs Dry Conditions & Indian Highway Safety • Q3: ISRO Rocket Upward Kinematics & Burnout Limits • Q4: Cricket Ball Delivery Kinetics & Batsman Limits • Q5: Forensic Accident Skid Mark Reconstruction • Q6: Galileo's Tower Experiment & Air Resistance Models Part B — Research Essay (25 Marks) • Physics of Road Safety & Indian Infrastructure Standards • ISRO Launch Vehicle Staging & Unit Consistency • Sports Precision Timing & Measurement Uncertainty • Industrial Catastrophes & Historical Unit Mismatches • Conclusion: Indian Emerging Transport & Drone Technologies
CHEMISTRY	**PROJECT:** • Topic: Carbon Emission and Its Impact on Environment. **(Roll No. 1,3,5,7,9)** • Is Milk not made for Human Beings? **(Roll No. 2,4,6,8,10)** • Acid Rain and its impact on our Life. **(Roll No. 11,13,15,17,19)** • **Electronic Waste (E-Waste) Management (Roll No. 12,14,16,18,20)** Study chemical hazards from batteries, circuits, and gadgets. • **Water Purification Techniques (Roll No. 21,23,25,27,29)** Compare RO, UV, activated charcoal, boiling, and natural filtration methods. • **Hydrogen as Fuel of Future (22,24,26,28,30).** Explore green hydrogen production and applications. **Note:** Project file should be in Hand-written pages only. Use coloured pages but the color should be bright and no flowers, designs are printed in the background. **Structure of the Project File** 1. Page 2. Cover Certificate 3. Acknowledgement 4. Index 5. Introduction 6. Objectives of the Study 7. Research Methodology 8. Main Content / Chapters 9. Survey Analysis 10. Findings and Conclusion 11. Bibliography Appendix (Questionnaire, interview, pictures, etc.)
BIOLOGY	CLASS 11 BIOLOGY — CBSE | Chapter 4: Animal Kingdom Comprehensive Project Assignment Total Marks: 45 | Tasks: 3 (Task 1 + Task 2 + Task 3) , Subject: Biology NCERT Reference: Chapter 4 (Class 11) Task 1: Animal Phyla — Structured Study , 15 Marks Chapter: 4 — Animal Kingdom | Type: Diagram + Written Analysis | Marks: 15 Introduction The Animal Kingdom is classified based on a series of fundamental characteristics: levels of organisation, symmetry, body cavity (coelom), segmentation, notochord, and pattern of

development. Mastering the basis of classification is as important as memorising the phyla. This task takes you through structure, function, and evolutionary significance of all major animal phyla.

Part A — Diagram & Labelling (6 Marks)

Instructions: Draw and label the following diagrams accurately. Each should be on a separate page of your answer booklet.

Draw a well-labelled diagram of Sycon (Phylum Porifera) showing: osculum, ostia, spongocoel, choanocytes, pinacocytes, and spicules

Draw a labelled diagram of Hydra (Phylum Cnidaria) showing: tentacles, nematocysts, epidermis, gastrodermis, mesoglea, and hypostome

Draw labelled diagrams of: (a) T.S. of earthworm showing coelom, intestine, setae, nephridia; (b) T.S. of cockroach showing tergum, sternum, haemocoel

Draw a labelled diagram illustrating the types of symmetry in animals: radial (starfish), bilateral (fish), and asymmetry (sponge) — with one example and definition each

Part B — Written Analysis Questions (9 Marks)

Construct a comprehensive comparison table of all nine phyla (Porifera, Cnidaria, Platyhelminthes, Aschelminthes, Annelida, Arthropoda, Mollusca, Echinodermata, Chordata) using: coelom, symmetry, segmentation, circulatory system, respiration, and one example.

What is the significance of a coelom? Distinguish between Acoelomate, Pseudocoelomate, and Coelomate animals with one example each. How does the coelom contribute to organ complexity?

Explain the basis of classification within Phylum Chordata. Distinguish between Urochordata, Cephalochordata, and Vertebrata with examples.

Describe the distinguishing features of Class Mammalia. Why are monotremes (like Platypus) considered a link between reptiles and mammals?

What is metamorphosis? Distinguish between complete metamorphosis (holometabolous) and incomplete metamorphosis (hemimetabolous) with one example each.

Explain the adaptive significance of: (a) open vs closed circulatory systems; (b) endoskeleton vs exoskeleton — in context of the phyla where they occur.

Marking Criteria

Criterion	Marks
Accuracy and completeness of all four diagrams	4
Correctness of labels and annotations	2
Phyla comparison table (Q1)	2
Coelom types and significance (Q2)	1
Chordata classification basis (Q3)	1
Mammalia features + Platypus (Q4)	1
Metamorphosis types (Q5)	1
Circulatory and skeletal systems (Q6)	1

Task 2: Animal Adaptations — Field Observation & Analysis	15 Marks

Chapter: 4 — Animal Kingdom | Type: Research + Data Analysis | Marks: 15

Introduction
Animals have evolved remarkable adaptations to survive in diverse habitats — from deep sea trenches to high-altitude deserts. This task combines data analysis with a local observation study to connect classroom phyla to real animals in your environment.

Part A — Data Analysis (8 Marks)

Dataset: Study the following data from a biodiversity survey of animals found near a freshwater pond.

Animal	Phylum	Symmetry	Coelom	No. Observed	Ecological Role
Leech	Annelida	Bilateral	Coelomate	12	Ectoparasite, medical use
Water snail	Mollusca	Bilateral	Coelomate	34	Algae grazer, food chain
Dragonfly larva	Arthropoda	Bilateral	Coelomate	67	Predator, bioindicator
Hydra	Cnidaria	Radial	Acoelomate	23	Predator of zooplankton
Frog	Chordata	Bilateral	Coelomate	8	Insect control, food chain
Planaria	Platyhelminthes	Bilateral	Acoelomate	19	Detritivore, regeneration

Analysis Questions:

- Which phylum has the highest number of individuals observed? Suggest two ecological reasons for its abundance near ponds.
- Identify all acoelomate animals in the dataset. Explain how the absence of a coelom limits their organ complexity and size.
- Calculate the proportion of coelomate vs acoelomate organisms. Draw a pie chart. What evolutionary conclusion can you draw from the proportion?
- The frog is the least abundant (8 individuals). Explain three reasons — biological and environmental — that might explain its low numbers near this pond.
- Conduct your own field observation: Identify 8 animals in your surroundings (garden, park, home). Record: common name, phylum, symmetry, and ecological role. Tabulate your results.

Part B — Research Essay: Animal Adaptations to Extreme Environments (7 Marks)

Topic: "How have animals conquered Earth's most extreme environments? A study in evolutionary adaptation."
Your essay MUST include:

- THREE specific extreme environments (deep sea, high altitude, arid desert) — one animal example from each with detailed physical and physiological adaptations

- The role of convergent evolution — how unrelated animals in similar environments develop similar traits (e.g., streamlined body in dolphins and sharks)
- How social behaviour in Arthropoda (ants, bees) represents an adaptation that improves survival — with specific examples
- India's endemic animal species at risk — name THREE and describe their specific adaptations and the threats they face
- Your conclusion: Which single adaptation (e.g., warm-bloodedness, coelom, segmentation) has most contributed to animal success on land?

Format Note: 600–800 words, clear headings, 3+ scientific references. Include at least ONE labelled diagram of an adapted animal structure.

Marking Criteria

Criterion	Marks
Data analysis — accuracy of answers (Q1–Q4)	4
Field observation table — 8 animals (Q5)	2
Essay — extreme environment adaptations	2
Essay — convergent evolution and social behaviour	2
Essay — India's endemic species	1
Essay — conclusion, references, diagram	1
Overall neatness and organisation	3

Task 3: Scientific Infographic — 'The Animal Kingdom: Unity in Diversity'	15 Marks

Chapter: 4 — Animal Kingdom | Type: Creative Design + Data Analysis | Marks: 15

Part A — Data Analysis (8 Marks)

Study the following dataset on species diversity across animal classes.

Animal Class	Phylum	Est. Species (thousands)	Warm/Cold-Blooded	Reproduction	Key Feature
Insecta	Arthropoda	1000	Cold-blooded	Sexual, metamorphosis	Exoskeleton, 6 legs
Arachnida	Arthropoda	45	Cold-blooded	Sexual	8 legs, chelicerae
Chondrichthyes	Chordata	1.1	Cold-blooded	Internal fertilisation	Cartilaginous skeleton

Osteichthyes	Chordata	30	Cold-blooded	External fertilisation	Bony skeleton, scales
Aves	Chordata	10	Warm-blooded	Oviparous	Feathers, hollow bones
Mammalia	Chordata	5.5	Warm-blooded	Viviparous (mostly)	Mammary glands, hair

Analysis Questions:

- Which class has the highest species diversity? Suggest THREE evolutionary features that have contributed to this group's success.
- Compare warm-blooded vs cold-blooded animals in the table. What percentage of classes listed are warm-blooded? Plot a bar graph of species count by class.
- Insecta has 1,000,000 species. Mammalia has 5,500. Calculate how many times more insect species there are. What does this imply about the relationship between body size and species diversity?
- Chondrichthyes has only 1,100 species while Osteichthyes has 30,000. What structural advantages of bony fish might explain this difference?
- Select any TWO classes from the table. For each, name ONE species found in India and describe its IUCN conservation status and one key threat it faces.
- Create a timeline on graph paper showing the approximate first appearance of each class in the fossil record (geological eras). Mark the Cretaceous extinction event.

Part B — Scientific Infographic (7 Marks)

Design an A4-size poster/infographic titled: "The Animal Kingdom: Unity in Diversity"
Your infographic MUST include:

- A visual cladogram (evolutionary tree) showing the nine phyla with their branching points labelled by key innovations (coelom, segmentation, notochord, jaws, amniotic egg, mammary glands)
- A 'Body Plans' section showing bilateral vs radial symmetry and acoelomate/pseudocoelomate/coelomate cross-sections with labelled diagrams
- A comparison of four vertebrate classes (Fish, Amphibia, Reptilia, Mammalia) using illustrated body plan diagrams
- A section on 'Animals of India' — 6 endemic or endangered Indian species with their phylum, class, and IUCN status
- A 'Surprising Animal Facts' panel with 5 unusual adaptations (e.g., tardigrade cryptobiosis, electric eel, mantis shrimp vision)

Format Note: Minimum 5 diagrams/visuals. Can be hand-drawn or digital. Must be visually appealing and scientifically accurate.

Marking Criteria

Criterion	Marks
Data analysis Q1–Q4 — accuracy and reasoning	4
Indian species + timeline (Q5, Q6)	2

Bar graph — accuracy and interpretation	2
Infographic — cladogram and body plan diagrams	3
Infographic — visual quality and organisation	2
Infographic — Animals of India section	1
Overall neatness and presentation	1

Assignment Summary

	Description	Type	Marks
1	Animal Phyla — Diagrams & Analysis	Diagram + Written	15
2	Animal Adaptations — Data Analysis & Essay	Research + Data	15
3	Infographic — Unity in Diversity	Data + Design	15
	Timely completion and Neatness		5
	TOTAL		50

All the best! Remember: Accurate diagrams, scientific depth, and clear presentation are key to scoring full marks.

ECONOMICS

Part 1: Group Segregation – Roll No. Wise Allotment
Group 1 PPC – Production Possibility Curve 1, 2, 3, 4, 5, 6
Project Name: My Daily Time PPC
Task: Take 24 hours as your resource. Choose 2 activities like Study Hours vs Leisure Hours. Make 5 combinations, draw PPC on graph paper, and explain the opportunity cost of spending 1 extra hour on mobile games.
Group 2 Cardinal Approach 7, 8, 9, 10, 11
Project Name: Diminishing MU of My Favourite Snack
Task: Select one snack like biscuits or chips. Record Total Utility and Marginal Utility for 6 units consumed. Draw TU and MU curves. Explain the saturation point using your own family example
Group 3 Ordinal Approach 12, 13, 14, 15, 16
Project Name: Budget Line of My Pocket Money
Task: Assume your monthly pocket money is ₹60. Take 2 goods like Samosa ₹10 and Pastry ₹20. Make 3 indifference curves, draw the budget line, and show the equilibrium point where MRS = Px/Py
Group 4 Consumer's Equilibrium 17, 18, 19, 20, 21

	Project Name: Are We Spending Rationally? Grocery Check Task: Take 2 grocery items bought at home like Wheat and Sugar. Ask parents for price and rate MU on a 1-10 scale. Check if MUx/Px = MUy/Py. Suggest which item your family should buy more of next month. *Group 5 Central Problem of an Economy* 22, 23, 24, 25, 26 Project Name: Decision Making in My Kitchen Task: Interview your mother about cooking decisions. Explain how she solves What to produce, How to produce, and For whom to produce using limited gas, vegetables, and time. Link it with scarcity and choice *Group 6 Economics and Economy* 27, 28, 29, 30, 31 Project Name: Economic Activities in My Family Task: List all family members and classify their work into Primary, Secondary, or Tertiary sector. Write how your house acts as both a consuming unit and a producing unit with examples. *Group 7 Positive vs Normative Economics* 32, 33, 34, 35, 36 Project Name: Statement Analysis: Family WhatsApp Group Task: Collect 6 economic statements from home like "GST is 18%" and "GST should be 5%". Classify each as Positive or Normative Economics and give a 1-line reason for your classification. *Group 8 Mean* 37, 38, 39, 40, 41 Project Name: Average Study Hours vs Average Marks Task: Collect two datasets. Dataset 1: Your study hours for 7 days. Dataset 2: Your marks in 5 subjects. Calculate Arithmetic Mean for both. Explain which mean changes more if you take one holiday. *Group 9 Median* 42, 43, 44, 45, 46 Project Name: Median Age: Why Middle is Stable Task: Note the ages of all family members. Find the median. Then add the age of one more relative and recalculate median and mean. Explain why median did not change as much as mean. *Group 10 Mode* 47, 48, 49, 50, 51, 52 Project Name: Most Common App on My Phone Task: Check your phone's screen time for 1 week. Note the most used app for each of the 7 days. Make a frequency table and find the mode. Suggest whether you should reduce usage of the modal app and why. Note for All Projects: 1. All data must be from your home only. No market survey needed. 2. Submit handwritten file of 10-12 pages with graphs on graph paper. 3. Viva will be based on your own data. Copying from friends will get 0. **Part 2: Rubrics for 50 Marks** Your project will be assessed based on the following breakdown: Introduction and Rationale (5 Marks): Clarity of the economic concept and justification for choosing the topic. Research Methodology (5 Marks): Appropriateness of the tools, sample size, and data collection methods used. Data Presentation and Visuals (10 Marks): Accuracy, neatness, and relevance of diagrams, graphs, and charts. Economic Analysis and Interpretation (10 Marks): Depth of application of economic theories to explain the collected data. Conclusion and Recommendations (5 Marks): Logical deductions that connect directly back to the data analyzed. Organization and Presentation (5 Marks): Adherence to the structure, neatness, grammar, and overall layout of the file.

	Viva-Voce / Oral Defense (10 Marks): Ability to answer questions confidently and demonstrate a deep understanding of your own project.
POLITICAL SCIENCE	**TOPIC 1: Freedom of Speech in India: Where Are the Limits?** Syllabus Unit: Political Theory — Chapter 2: Freedom | Indian Constitution — Chapter 2: Rights **Project Overview** Article 19(1)(a) guarantees freedom of speech; Article 19(2) authorises 'reasonable restrictions.' Through landmark judgements and contemporary debates on sedition, social media, and hate speech, examine how India negotiates the tension between liberty and state authority. **Research Tasks (choose ALL 5)** 1.Research the Constituent Assembly debates on Article 19: What restrictions were proposed and rejected? Who argued for broader or narrower freedoms? 2. Analyse three landmark Supreme Court cases: Romesh Thappar v. State of Madras (1950), Shreya Singhal v. Union of India (2015), and one case of your choice post-2015 3. Investigate Section 66A of the IT Act — why was it struck down? Compile data on how many people were arrested under it and who they were 4. Research sedition law (Section 124A IPC / BNS 2023 equivalent) — compare India's law with the UK (which abolished sedition in 2009) and the USA (First Amendment protections) 5. Investigate India's current social media regulation framework — what powers does the government hold and what are the civil society objections? • **★ CRITICAL THINKING TASK ★** Using the liberal framework (Mill's harm principle) and the republican framework (non-domination theory) from Chapter 2, construct a structured argument: Should hate speech be protected under freedom of expression in India? You must present the strongest case on BOTH sides before reaching your own reasoned conclusion. (500 words) **ASSESSMENT RUBRICS** Content Accuracy & Depth 14 Research Quality & Citation 10 Critical Thinking & Thesis 12 Visual Aids (Maps/Charts/Timeline) 8 Writing Structure & Language 6 TOTAL / 50
HISTORY	**TOPIC 1: The Silk Road: A Network That Shaped Civilizations** Syllabus Unit: Themes in World History — Unit 1: Early Societies & Unit 3: Nomadic Empires **Project Overview** Investigate the Silk Road as a corridor of trade, religion, disease, and ideas. Go beyond silk — trace how this network transformed empires from Rome to Han China and question whether it was the world's first experiment in globalization. **Research Tasks (choose ALL 5)** 1. Map the overland and maritime Silk Road routes; identify 6 key cities and list 5 commodities traded at each 2. Analyse how Buddhism, Islam, and Christianity spread along the routes — use at least 2 primary source accounts (pilgrim records, merchant diaries) 3. Investigate the Plague of Justinian (541 CE): Was the Silk Road responsible for its spread? Use epidemiological and historical evidence

	4. Compare the experience of merchants, pilgrims, and diplomats who used the route — what did each group seek and risk? 5. Critically evaluate: Was the Silk Road more about cultural exchange or economic extraction? Build a thesis and defend it with evidence **★ CRITICAL THINKING TASK ★** Write a 400-word argument: 'The Silk Road was the world's first globalization project.' Do you agree? Use specific evidence from at least three different empires or cultures to support your position. Anticipate and counter one opposing argument. **ASSESSMENT RUBRICS** Content Accuracy & Depth 14 Research Quality & Citation 10 Critical Thinking & Thesis 12 Visual Aids (Maps/Charts/Timeline) 8 Writing Structure & Language 6 TOTAL / 50
SOCIOLOGY	**(Total 3 Tasks)** **Book 1 – *Introducing Sociology* (Chapter 1)** **Book 2 – *What is Society?* (Chapter 1)** **Note: Avoid copying directly from AI or websites. Use your own observations and critical thinking.** 1. Complete **Personal Project** discussed in class. 5 Marks 2. Complete **Extended Project** work assigned to you. 10 Marks Prepare a Detailed **Case Research**. Use Sociological analysis, Screenshots, QR Codes, charts, newspaper cuttings, diagrams, tables and real-life examples wherever possible. Students must collect information from NCERT Book, Newspaper Articles, Research Papers, WHO reports, Interviews, Online Educational Sources (Instagram trends, News reports, Podcasts, Interviews, Surveys) Case Research Topic - "Are Teenagers Mentally Exhausted?", conduct Survey (10–15 students). **Suggested Questions:** • Do you feel pressure to succeed constantly? • What causes stress most? • Do marks define intelligence? • How many hours do you sleep? • Have you ever felt emotionally exhausted? • Does social media increase comparison? **Sociological Interpretation:** Explain: • Competition in modern society • Success pressure • Consumerism • Toxic productivity • Social expectations **Reflection:** "Is modern society emotionally healthy for teenagers?" Assessment Rubric o Research Quality – 5 Marks (Use of authentic information from NCERT, DSM concepts, WHO, articles, or reliable sources) o Presentation & Creativity – 5 Marks

	○ Data Collection and Analysis – 10 Marks ○ Case Study Understanding – 10 Marks ○ Explanation/ Viva – 5 Marks
ACCOUNTANCY	**Activity 1: Introduction to Source Documents** Write the following in your own words: • Meaning of Source Documents • Importance of Source Documents • Features of Source Documents • Difference between Cash Memo and Invoice *(Minimum 2 pages with examples.)* **Activity 2: Collection Activity** Collect or draw any **5 source documents** used in business transactions. Examples: • Cash Memo • Invoice • Debit Note • Credit Note • Receipt • Pay-in-slip • Cheque • GST Bill • Purchase Order For each document: • Paste/draw the sample • Write its use in 2–3 lines **Activity 3: Case Study** **Read the Case Study Carefully** Rohan started a stationery shop named "Bright Future Store". During the first week, he purchased goods from a wholesaler, sold goods to customers for cash and on credit, deposited money into the bank, and returned some damaged goods to the supplier. **Answer the following questions:** 1. Which source document is used when goods are purchased on credit? 2. Which document is issued when goods are returned to the supplier? 3. Which source document is used while depositing money into the bank? 4. Why are source documents important in accounting? 5. Name any two source documents used by the shopkeeper. **Viva/Presentation** Students may be asked questions based on their project work after vacation. Possible questions: • What is the importance of source documents? • Why are invoices important? • Difference between debit note and credit note?

	• Which source document is used for bank transactions? **Rubrics for Assessment (50 Marks)** **Criteria** — **Marks** Content Accuracy & Understanding — 10 Collection of Source Documents — 10 Presentation & Creativity — 10 Case Study & Practical Application — 10 Neatness, Timely Submission & Viva — 10 **Total** — **50 Marks**
BUSINESS STUDIES	**1. Local Business Research Project** Visit any nearby business and prepare a report on: • Type of business organisation • Sources of finance • Marketing methods • Problems faced • Customer dealing Examples: • Grocery store • Boutique • Bakery • Medical shop Add: ✓ Photos ✓ Owner interview ✓ Bill samples **2. Start Your Own Mini Business Idea** Students create a small business plan for: • Homemade products • Online page • Food stall • Handmade crafts Include: • Investment needed • Target customers • Profit estimation • Promotion strategy **3. Survey on Consumer Buying Behaviour** Conduct a survey on: • Online shopping vs offline shopping • Brand preference among teenagers • Impact of advertisements Use: ✓ Pie charts ✓ Bar graphs ✓ Questionnaire Mention platforms like: • Amazon India

	• Flipkart **4. Research on Family Businesses** Study a famous Indian family business and explain: • History • Growth • Management style Success factors Examples: Reliance Industries Tata Group
BUSINESS ADMINISTRATION	**Topic: "Introduction to Business Operations"** The project should cover the following areas from Unit–1: • Human Activities • Economic & Non-Economic Activities • Business, Profession, Employment & Services • Characteristics and Scope of Business • Types of Business Operations • Business Environment around Us • Management of Business Operations **PROJECT WORK** **Part A – Cover Page & Acknowledgement** **1. Cover Page** **2. Acknowledgement** **3. Certificate** **4. Index** **Part B – Conceptual Work** **Activity 1 – Human Activities Chart** Gives 5 examples of each from daily life. • Economic Activities • Non-Economic Activities **Activity 2 – Difference Table** Differentiate between: **Basis** **Business** **Profession** **Employment** Use minimum 6 points. **Activity 3 – Case Study** **Read the following case:** Rohan started making handmade chocolates at home during festivals. Initially he sold chocolates to neighbors and relatives. Slowly, demand increased and he started receiving online orders. He employed two helpers and created his own brand name "Sweet Bite". **Answer the following questions:** 1. Which type of economic activity is this? 2. Mention any four characteristics of business visible in the case. 3. What risks can arise in this business? 4. Suggest two ways by which Rohan can increase customer satisfaction. **Activity 4 – Survey Activity** **Topic:**"Visit nearby shops/businesses and identify different types of business operations." **Instructions:** Visit or observe at least:

<table>
<tr><td></td><td>

One small-scale business
One medium-scale business
One large-scale business

Collect information regarding:

Name of business
Type of ownership
Nature of activity
Number of employees
Products/services offered

Present the data in tabular form.
Part E – Viva Questions Preparation
Prepare answers for the following:

What is business?
Explain any four characteristics of business.
Difference between internal and external trade.
What are auxiliaries to trade?
Why is customer satisfaction important?
Explain any three types of business ownership.

RUBRICS FOR ASSESSMENT (50 MARKS)
<table>
<tr><th>Criteria</th><th>Marks</th></tr>
<tr><td>Cover Page, Index & Acknowledgement</td><td>5</td></tr>
<tr><td>Content Accuracy & Concept Clarity</td><td>10</td></tr>
<tr><td>Survey & Case Study Work</td><td>10</td></tr>
<tr><td>Creativity & Presentation</td><td>10</td></tr>
<tr><td>Charts/Diagrams/Pictures</td><td>5</td></tr>
<tr><td>Handwriting & Neatness</td><td>5</td></tr>
<tr><td>Viva Voce / Understanding</td><td>5</td></tr>
<tr><td>Total</td><td>50 Marks</td></tr>
</table>
</td></tr>
<tr><td>ELECTRONICS & HARDWARE</td><td>
MAKE POWER POINT PRESENTATION ON ANY OF THE FOLLOWING:
Design Project 1 (Diagram + Written Analysis, 50 Marks)
Focused on drawing and labelling basic electronic components (resistors, capacitors, inductors), breadboard internal connections, and multimeter dials.
Design Project 2 (Research + Data Analysis, 50 Marks)
Containing a dataset of resistor color code tolerances, experimental error in Ohm's Law verification, and a historical essay on passive component development.
Design Project 3 (Derivation + Application, 50 Marks)
Requiring mathematical derivations for equivalent resistance (series/parallel), capacitive charging equations, and numerical problems using Kirchhoff's Laws.
Design Project 4 (Creative Design + Data Analysis, 50 Marks)
involving voltage-current (V-I) characteristic curve plots of basic components and a creative infographic distinguishing active vs. passive devices.
Design Project 5 (Research + Investigation, 50 Marks)
analyzing real-world component failures, circuit troubleshooting datasets (such as open/short circuits), and a research essay on the modern Indian electronics manufacturing sector.
</td></tr>
<tr><td>PSYCHOLOGY</td><td>
<u>PROJECT - FILE</u>

<u>Project file work</u>: Students are required to undertake one detailed research study which topic assigned as below:

</td></tr>
</table>

	Roll no. 1 Effect of different types of music on mood of adolescents Roll no. 2 Effect of having breakfast on performance of adolescents Roll no. 3 Survey on smartphone usage and sleep Roll no. 4 Effect of sleep on mood Roll no. 5 Study habits and academic performance Roll no. 6 Peer pressure and decision making Roll no. 7 Effect of yoga or meditation on aggressive behaviour Roll no. 8 Stress level before exams **How to keep it "small research" level:** 1. Sample: 20-30 participants from your school/neighborhood 2. Method: Questionnaire, interview, simple experiment, observation 3. Analysis: Percentages, bar graphs, average scores. No complex stats needed 4. Write-up: Aim, Method, Results with graph, Discussion, Conclusion **Structure of the file should be as follows-** ▫ Cover page ▫ Certificate ▫ Acknowledgement ▫ Index/Table of content ▫ Introduction ▫ Statement of purpose ▫ Methodology (Primary interviews, questionnaire, survey, census, news – paper, online information, sample size and so on) ▫ Main content/ body of the project (case- study, field work, graphs, tables, findings, images etc.) ▫ Analysis of data (present through tables, graphs, images as evidence) ▫ conclusion ▫ Bibliography ▫ Appendix **Assessment Rubric-** • Research Quality – 10 Marks • Presentation & Creativity – 10 Marks • Data Collection and Analysis – 10 Marks • Case Study Understanding – 5 Marks • Explanation/ Viva – 5 Marks ➢ Additional- (Write at least 5-7 pages at the end of your project file on the following topics with creative presentation as comic/animated form) 10 Marks R.no. - 1 Introduction of Psychology with its basic concept R.no. - 2 Evolution of Psychology R.no. - 3 Development of Psychology in India R.no. - 4 Branches of Psychology and its importance R.no. - 5 Relationship of Psychology with other disciplines R.no. - 6 Importance of Psychology in daily life R.no. - 7 Goals and steps of psychological enquiry R.no. - 8 Observation method to enquire the psychological data
ENTREPRENEURSHIP	**Chapter 1: Entrepreneurial Introduction** **Mini Research-Based Project** **Topic:** **"Entrepreneurs Around Me"** **Objective:**

	To understand who entrepreneurs are and how they contribute to society. **Project Work** Visit or observe any local entrepreneur such as: • Shopkeeper • Boutique owner • Bakery owner • Tuition teacher • Small business owner Collect information: 1. Name of business 2. Type of product/service 3. Why they started the business 4. Qualities of the entrepreneur 5. Challenges faced **Add:** ✓ 1–2 photos/drawings ✓ Short interview (5 questions) ✓ Your conclusion about entrepreneurial qualities
LEGAL STUDIES	**TOPIC 1: Access to Justice in India: A Reality Check** **Syllabus Unit: Legal Studies — Unit 4: Administration of Justice** **Project Overview** The Constitution promises justice to every citizen. The reality for ordinary Indians is years of waiting, unaffordable legal fees, and geographic barriers. Using real data, this project investigates the gap between the constitutional promise and lived experience. **Research Tasks (choose ALL 5)** 1. Map the hierarchy of Indian courts (District Court → High Court → Supreme Court): What are the typical time and cost at each level for a civil dispute? 2. Using the National Judicial Data Grid (njdg.gov.in), research pendency data: How many cases are currently pending? Which courts have the worst backlogs? 3. Research the National Legal Services Authority (NALSA): What services does it offer, who is eligible, and how many people actually access it? Use the NALSA Annual Report 4. Case Study: Research Lok Adalat's — how many cases were settled in 2022–23? Which types of disputes are most commonly resolved, and why? 5. Investigate: Who actually reaches the Supreme Court of India? Research the socio-economic and geographic profile of litigants and compare it to the general population. **★ CRITICAL THINKING TASK ★** Design a one-page 'Access to Justice Report Card' for your own state using real NJDG and NALSA data. Grade it (A–D) on four indicators: (1) case pendency rate, (2) legal aid reach, (3) Lok Adalat utilization, (4) court infrastructure. Write 3–4 sentences justifying each grade with data. Conclude your top reform recommendation. **ASSESSMENT RUBRICS** Content Accuracy & Depth 14 Research Quality & Citation 10 Critical Thinking & Thesis 12 Visual Aids (Maps/Charts/Timeline) 8 Writing Structure & Language 6 TOTAL / 50

PHYSICAL ACTIVITY TRAINER	**RESEARCH PROJECT TOPIC:-** **Impact of Exercise on Mental Health** (ROLLNO.1-5) • Clarity of research question • Use of scientific studies and surveys • Analysis of stress, anxiety, or mood improvements • Presentation of findings with examples **Role of Nutrition in Physical Fitness** (ROLLNO.6-10) • Identification of key nutrients for athletes • Comparison of balanced vs. poor diets • Data collection from case studies or interviews • Practical recommendations **Benefits of Yoga for Adolescents** (ROLLNO.11-15) • Explanation of yoga practices • Evidence of physical and mental benefits • Inclusion of student participation or surveys • Structured conclusion **Injury Prevention in Sports** (ROLLNO.16-20) • Identification of common injuries • Research on warm-up, cool-down, and protective gear • Case study analysis • Practical guidelines for prevention **Technology in Fitness Training** (ROLLNO.21-25) • Exploration of fitness apps, wearables, or AI trainers • Evaluation of effectiveness • Data presentation (charts, graphs) • Critical analysis of pros and cons **importance of Physical Activity in School Curriculum** (ROLLNO.26-30) • Review of existing school programs • Benefits for student health and academics • Comparative study with schools lacking programs • Recommendations for improvement **Gender Differences in Physical Fitness** (ROLLNO.31-45) • Research on physiological differences • Analysis of training methods for boys vs. girls • Use of scientific data and statistics • Balanced discussion **NOTE- This project-Portfolio is a compilation of the work that the students will submit in the first week of July.** • **Individually Student has to prepare The Research Project.** • **Annual Viva (ASL) will be conducted based on this project only in the month of January.** **General Instructions for the Project** **Project Format** • Use A4 size sheets • Maintain a neat handwritten or typed format • Use blue/black ink for writing • Add a cover page • Include page numbers • Decorate lightly and keep the presentation clean

Structure of the Project File

1. Cover Page
2. Certificate
3. Acknowledgement
4. Index
5. Introduction
6. Objectives of the Study
7. Research Methodology
8. Main Content / Chapters
9. Survey Analysis
10. Findings and Conclusion
11. Bibliography
12. Appendix (Questionnaire, interview, pictures, etc.)

ASSESSMENT SHEET/RUBRICS

Criteria	Marks Distribution	Details
Research Content	10	Depth of study, relevance to syllabus, originality
Presentation	10	Neatness, structure, clarity of charts/graphs
Practical Application	10	Connection to real-life fitness/training
Critical Analysis	10	Ability to compare, evaluate, and conclude
References & Sources	5	Proper citation of books, articles, or interviews
Creativity	5	Innovative ideas, unique approach

DATA SCIENCE

1. Consider a company manufacturing metal utensils for home cookware. The company has a factory in which 200 workers work on an everyday basis. Describe in detail how the set-up of the factory (proper equipment, safety measure and infrastructure) has a correlation and causal relationship with workers of the factory. Also, try to derive the correlation between workers of the factory, the profitability and sustenance of the company. One should also think about the end product the customers will be using and what difference it may cause to their lives.
2. Consider a situation where a person gets admitted to a hospital for treatment. In such situations, information is collected from the patient using various ways. Explain in detail the various ways data is being collected from the patient. Once the data has been collected, represent the data first in tabular format and then as an XML.(When a person gets admitted to hospital, previous medical history, if exists, is collected. Tests are done based on the existing condition of the patient. All this is done keeping the previous medical history in mind. During the course of the treatment, everyday checks are performed to understand the progression of the patient's health condition).

AI

- **Prepare a file with all these 15 python codes:**
  Note: Include a screenshot of the output along with its corresponding code.

1. Write a Python program to print "Hello World".
2. Write a Python program to add two numbers entered by the user.
3. Write a Python program to calculate the area of a rectangle.
4. Write a Python program to check whether a number is even or odd.
5. Write a Python program to find the largest of two numbers.

	6. Write a Python program to display the multiplication table of a number. 7. Write a Python program to print numbers from 1 to 10 using a loop. 8. Write a Python program to create a simple calculator using arithmetic operators. 9. Write a Python program to count the number of vowels in a string. 10. Write a Python program to store five fruits in a list and display them one by one. 11. Write a Python program to find the factorial of a number. 12. Write a Python program to reverse a string. 13. Write a Python program to swap two numbers. 14. Write a Python program to check whether a year is a leap year or not. 15. Write a Python program to find the maximum number in a list.
DTI	https://cbseacademic.nic.in/web_material/Manuals/DT_Curriculum11.pdf FROM THIS BOOK TAKE MODULE 4:- Design Project 1: Communication Design Collaborative Project Make Project File. **ASSESSMENT RUBRICS** Content Accuracy & Depth 10 Research Quality & Citation 10 Critical Thinking 10 Visual Aids (Maps/Charts/Timeline/Photos) 10 Writing Structure & Language 10 TOTAL / 50
SCULPTURE	**HOLIDAY HOMEWORK (2025-26)** **Part A – Research Work (Theory)** Topic 1: Waste Material Sculpture Write About: 1. Meaning of Waste Material Sculpture 2. Importance of Recycling in Art 3. Different Waste Materials Used in Sculpture: Plastic bottles Cardboard Newspaper Old cloth Metal scrap Broken tiles Clay waste 4. Famous Artists Who Use Recycled Materials 5. Benefits of Eco-Friendly Art Paste/Draw: (Practical File) 2 pictures of waste material sculptures 2 self-drawn designs for sculpture ideas **Part B – Practical Work** Practical Activity 1 Best Out of Waste Sculpture **Make Any One:** Animal sculpture Human face mask Mini monuments

	Materials: - Waste newspaper, cardboard, glue, clay, acrylic colours, old bottles etc. **Size;** Minimum 12 inches **Learning Outcomes** Students will: Develop creativity using waste materials. Understand recycling and environmental awareness. Learn sculpture techniques and clay handling. Improve observation and design skills. **Total: 50 Marks**
COMMERCIAL ARTS	**Practical File + Research Based Creative Project** **PART A – VISUAL RESEARCH FILE** Prepare a creative scrapbook/file using: • Magazine cuttings • Newspaper ads • Product labels • Handmade sketches **Activity 1 – Market Observation Research** Visit any nearby market/shop/mall and observe different advertisements. Collect or draw: • 5 logos • 3 packaging designs • 2 posters/banners Then answer: Observation Your Answer • **Most attractive logo** • **Best color combination** • **Best slogan** • **Why was it attractive?** **Activity 2 – Creative Brand Research** **Research any TWO famous brands:** • **Amul** • **Nike** • **Coca-Cola** **Write:** • **Brand logo meaning** • **Famous slogan** • **Why people like the brand** • **Your opinion** **PART B – PRACTICAL CREATIVE WORK (A2 Size Sheet)** **Activity 1 – Magazine Cover Design** Design your own magazine cover.

	• Magazine Themes: • Fashion • Sports • Technology • Art & Culture • Music Include: • Magazine title • Cover image • Headlines • Price/date • Attractive layout **Activity 2 – Social Media Advertisement** • Design an Instagram/Facebook advertisement for: • Fashion Brand • Food Product • Mobile App • Art Workshop **Use:** • Catchy slogan • Creative layout • Digital style elements **INSTRUCTIONS** • Use bright and balanced colors • Maintain neatness and originality • Decorative file cover compulsory • Add handmade borders and headings • Avoid copying from internet **ASSESSMENT RUBRICS** **Criteria Marks** Research & Observation (10) Creativity & Innovation (10) Practical Artwork (15) Presentation & Neatness (10) Reflection & Originality (5) TOTAL = 50 MARKS
GAMIFICATION	Task 1 – Create games related to counting principle, probability
MECHATRONICS	PROJECT – 1 Diodes in Daily Life: Exploring Electronic Components Mechatronics Club Topic: Diodes and Rectifiers Total Marks: 50 1. PPT Presentation (20 Marks): Prepare a PPT (10–12 slides) on diode, symbol, working principle, forward & reverse biasing and applications of diodes. 2. Activity (10 Marks): Observe and list devices at home using diodes (LED bulb, charger, TV, etc.) and write their use. 3. Observation Task (10 Marks): Identify and record any 5 applications of diodes in daily life.

	4. Numerical Practice (5 Marks): Solve any two simple questions related to diode operation. 5. Creativity Task (5 Marks): Prepare a poster/model/comic on diodes. PROJECT – 2 Power Conversion: Understanding Rectifiers Mechatronics Club Topic: Rectifiers Total Marks: 50 1. PPT Presentation (20 Marks): Prepare a PPT on rectifiers, AC and DC current, Half-wave rectifier and Full-wave rectifier. 2. Activity (10 Marks): Observe mobile chargers/adapters and identify devices converting AC to DC. 3. Observation Task (10 Marks): List 5 electronic devices that use rectification. 4. Numerical Practice (5 Marks): Solve any two basic rectifier-related questions. 5. Creativity Task (5 Marks): Create a flowchart/model showing AC to DC conversion. PROJECT – 3 From AC to DC: Journey of Electricity Mechatronics Club Topic: Diodes and Rectifiers Total Marks: 50 1. PPT Presentation (20 Marks): Prepare a PPT explaining the role of diodes in converting AC to DC with suitable diagrams. 2. Activity (10 Marks): Draw and label Half-wave and Full-wave rectifier circuits. 3. Observation Task (10 Marks): Find 5 places where rectifiers are used in daily life. 4. Numerical Practice (5 Marks): Solve any two circuit-related questions. 5. Creativity Task (5 Marks): Design a chart/poster showing current flow in rectifier circuits. PROJECT – 4 Electronic Heroes: Learning Through Diodes Mechatronics Club Topic: Diodes Total Marks: 50 1. PPT Presentation (20 Marks): Prepare a PPT on diode construction, symbols, types and applications. 2. Activity (10 Marks): Observe LEDs around your surroundings and record their applications. 3. Observation Task (10 Marks): Compare any 5 diode-based devices. 4. Numerical Practice (5 Marks): Solve any two concept-based questions. 5. Creativity Task (5 Marks): Create a comic/poster/model on diode applications. PROJECT – 5 Rectifiers at Work: Electronics Around Us Mechatronics Club Topic: Rectifiers and Diodes Total Marks: 50
AI EMBROIDERY	• **Basic Stitches Practice** Learn and practice 5 stitches: running stitch, backstitch, chain stitch, satin stitch, and French knot. → Make a sampler cloth with each stitch labeled. Paste all the samples in Practical File • **Festive Motif Creation** Choose 2 holiday-themed motifs (like a star, bell, or snowflake) and embroider them on fabric squares. • Paste all the samples in Practical File
3D EMBEDDE	**Activity 1: Self balancing robot** **Materials Required**:

D TEC.ROBOTICS	1. Arduino uno board 2. L298N motor driver 3. MPU 6050 sensor 4. 18650 battery holders with on/off switch 5. 18650 batteries 6. Motors with wheels 7. Jumper wires
JOURNALISM	**Theme: *"Media and Society: Truth in the Digital Age"*** Students will conduct a research-based journalism project to understand how news influences society and how digital platforms shape public opinion. **Project Title Options** Choose any ONE: 1. **Fake News vs Real News** 2. **Role of Social Media in Modern Journalism** 3. **Citizen Journalism and Its Impact** 4. **How News Channels Influence Public Opinion** 5. **Ethics in Journalism** 6. **Representation of Youth Issues in Media** **Research-Based Tasks** **Part A – Research Work** • Collect information from: o Newspapers o News websites o Interviews o Surveys o Social media platforms • Include: o Introduction o Aim of Study o Research Questions o Data Collection o Findings o Conclusion **Part B – Practical Journalism Task** Students must complete ANY TWO: • Conduct an interview with a local community member or teacher. • Create a newspaper front page on a current issue. • Write a feature article (500–700 words). • Prepare a news report with headline, byline, and facts. • Make a comparison between print and digital journalism. **Part C – Survey Activity** Prepare a survey on: **"Which media platform do people trust the most?"** Interview at least 10 people and represent findings through: • Bar graph / Pie chart • Observation summary **Submission Format** • Handmade or digital file • Cover page

<table>
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Index
Acknowledgement
Bibliography
Photographs/evidence of research

Assessment Criteria – Grade 11
<table>
<tr><th>Criteria</th><th>Marks</th></tr>
<tr><td>Research Quality & Data Collection</td><td>10</td></tr>
<tr><td>Creativity & Presentation</td><td>10</td></tr>
<tr><td>Journalism Writing Skills</td><td>10</td></tr>
<tr><td>Analysis & Critical Thinking</td><td>10</td></tr>
<tr><td>Practical Application/Survey</td><td>5</td></tr>
<tr><td>Viva/Explanation</td><td>5</td></tr>
<tr><td>Total</td><td>50 Marks</td></tr>
</table>
</td></tr>
<tr><td>ALGORITHM</td><td>Prepare a file with all these 6 python codes with flow chart and algorithm.
1. Write a Python program to print “Hello World”.
2.Write a Python program to add two numbers entered by the user.
3.Write a Python program to calculate the area of a rectangle.
4. Write a Python program to check whether a number is even or odd.
5. Write a Python program to find the largest of two numbers.</td></tr>
<tr><td>KATHAK</td><td>
Part A – Research Work (Theory)
Topic 1: Kathak – The Classical Dance Heritage of India
Write About:
1. Meaning and Origin of Kathak

Meaning of the word “Kathak”
Origin of Kathak in ancient temples
Development from storytelling tradition to classical dance form

2. Importance of Kathak in Indian Culture

Role of dance in Indian heritage
Kathak as a medium of storytelling and expression
Importance of rhythm, expressions, and discipline

3. Major Elements of Kathak
Write briefly about:

Tatkaar (Footwork)
Chakkars (Spins)
Mudras (Hand Gestures)
Bhav and Abhinaya (Expressions)
Ghungroo
Costume and Makeup

4. Different Gharanas of Kathak
Research about:

Lucknow Gharana
Jaipur Gharana
Banaras Gharana

Mention:

Origin place
Style and specialty
Famous dancers from each Gharana

</td></tr>
</table>

5. Famous Kathak Dancers

Write short notes on any three:

- Pandit Birju Maharaj
- Sitara Devi
- Kumudini Lakhia
- Shovana Narayan

Include:

- Early life
- Achievements
- Contribution to Kathak

6. Musical Instruments Used in Kathak

Write about:

- Tabla
- Harmonium
- Sarangi
- Pakhawaj

Paste/Draw: (Practical File)

- 2 pictures of Kathak dance performances
- 2 self-drawn sketches of Kathak poses/costumes
- Draw and label any 5 hand mudras used in Kathak

Part B – Practical Work

Practical Activity 1

Kathak Presentation & Creative Performance

Perform Any One:

- Basic Tatkaar sequence
- Short Tukda or Paran
- Expressive storytelling on a mythological theme
- 8–10 spins (Chakkars) with proper posture

Materials Required:

- Ghungroo
- Traditional costume/dupatta
- Music track
- Notebook for practice notes

Practical Activity 2

Creative Project Work

Make Any One:

- Kathak costume chart
- 3D model of musical instruments used in Kathak
- Scrapbook on famous Kathak dancers
- Poster on “Save Indian Classical Arts”

Learning Outcomes

Students will:

- Understand the history and importance of Kathak.
- Develop appreciation for Indian classical dance.
- Learn basic Kathak movements and expressions.
- Improve creativity, presentation, and research skills.
- Build confidence through practical performance.

Total: 50 Marks

	Section	**Marks**
	Research Work	20
	Practical Activity	20
	Creativity & Presentation	10
MOVIE MAKING	**Topic: Cinematography Techniques** Write Short Notes on: Tracking Shot Trolley Shot Practical Work: Create a 3-minute short film on Social Media or Environment using different camera movements and angles.	