

SHAMBHU DAYAL GLOBAL SCHOOL
SUMMER's HOLIDAYS HOMEWORK
SESSION 2026-27
CLASS X

SUBJECT	RESEARCH BASED TOPICS
ENGLISH	<ol style="list-style-type: none"> 1. Describe how courage and determination help a person overcome fear and difficult situations. Explain with suitable examples. (Word limit 2000) Roll no. 1 & 21 2. "Kindness and empathy can change a person's life." Discuss this statement with reference to incidents you have studied. (Word limit 2000) Roll no.2 & 22 3. Write an essay on the importance of honesty and truthfulness in human relationships. (Word limit 2000) Roll no.3 & 23 4. "Greed and selfishness often lead to destruction." Explain the statement with examples from the stories you have read. (Word limit 2000) Roll no.4 & 24 5. How can intelligence and presence of mind help a person in solving unexpected problems? Discuss in detail. (Word limit 2000) Roll no.5 & 25 6. "A person should never lose hope even in the toughest circumstances." Elaborate this idea with suitable incidents. (Word limit 2000) Roll no.6 & 26 7. Write an essay on the role of family support and love in shaping a person's life. (Word limit 2000) Roll no.7 & 27 8. "Scientific progress is beneficial only when used wisely." Discuss with reference to situations from the lessons. (Word limit 2000) Roll no.8 & 28 9. Describe how misunderstandings and lack of communication create problems in life. (Word limit 2000) Roll no.9 & 29 10. "Hard work and perseverance always bring success." Explain the statement with suitable examples. (Word limit 2000) Roll no.10 & 30 11. Write an essay on the importance of respecting nature and animals. (Word limit 2000) Roll no.11 & 31 12. "Human values are more important than material wealth." Discuss this statement in detail. (Word limit 2000) Roll no.12 & 32 13. How do courage and sacrifice inspire others in society? Explain with examples. (Word limit 2000) Roll no. 13 & 33 14. "Curiosity and creativity are essential qualities for learning." Elaborate with suitable illustrations. (Word limit 2000) Roll no. 14 & 34 15. Write an essay on how unexpected events can completely change a person's thinking and behaviour. (Word limit 2000) Roll no. 15 & 35 16. "Education and knowledge help people fight ignorance and superstition." Discuss this statement. (Word limit 2000) Roll no. 16 & 36 17. Describe how compassion and understanding can heal emotional pain and loneliness. (Word limit 2000) Roll no. 17 & 37 18. "One wrong decision can lead to serious consequences." Explain with reference to different situations. (Word limit 2000) Roll no. 18 & 38 19. Write an essay on the importance of self-confidence and positive thinking in achieving goals. (Word limit 2000) Roll no. 19 & 39 20. "True happiness lies in helping and caring for others." Discuss the statement with suitable examples. (Word limit 2000) Roll no. 20 & 40 <p>NOTE- This Research-Portfolio is a compilation of the work that the students will submit in the first week of July.</p> <ul style="list-style-type: none"> • Individually Student must prepare The Research Project. • Annual Viva (ASL) will be conducted based on this project only in the month of January. <p>General Instructions for the Project</p> <p>Project Format</p> <ul style="list-style-type: none"> • 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.)

HINDI

अनुसंधान परियोजना विषय:- अपने शहर के रैनबासेरों की विस्तृत जानकारी एकत्र कीजिए।

- (1) शहर में कितने रैनबसेरे हैं, और कहाँ-कहाँ हैं?
- (2) रैनबासेरों को सहायता कौन देता है ?
- (3) रैनबासेरों के लिए अन्न की व्यवस्था कौन करता है?
- (4) एक रैनबसेरे में लगभग कितने व्यक्ति रह सकते हैं ?
- (5) रैनबसेरों में रहने वाले व्यक्तियों को कौन-कौन सी सुविधाएँ उपलब्ध हैं ?
- (6) रैनबसेरों की आवश्यकता किन लोगों को होती है/
- (7) रैनबसेरों की शुरुआत किसने की थी?
- (8) रैनबसेरे में रहने वाले किसी एक व्यक्ति से साक्षात्कार करके उसके जीवन से संबंधित सारी जानकारी लीजिए कि वह कैसे यहाँ आया और वहाँ रहने का उसका कैसा अनुभव है?
- (9) जिस रैनबसेरे का वर्णन किया है उसकी फोटो भी साथ में लगाइए।
- (10) जिस व्यक्ति से बात की है उसकी फोटो तथा साक्षात्कार की वीडियो भी बनाकर फोन में लीजिए। उचित समय पर आपसे ले ली जाएगी।

कृतिका - पाठ "साना साना हाथ जोड़ी" की लेखिका "मधु कांकड़िया" के जीवन के बारे में संपूर्ण परिचय दीजिए। जैसे- जन्म, मृत्यु, शिक्षा, साहित्यिक जीवन, योगदान, उनकी रचनाएँ, उपलब्धियाँ, पुरस्कार आदि। लेखिका का चित्र भी चिपकाएँ। पाठ "साना साना हाथ जोड़ी" पाठ को पढ़कर पाठ की समीक्षा कीजिए तथा अपनी ज्ञान से पाठ की 4 महत्वपूर्ण घटनाओं का वर्णन अपने वाक्यों व भाषा में कीजिए।

: - समस्त कार्य A/4 शीट पर सुंदर लेख में करें तथा कार्य के पृष्ठ अपनी पोर्टफोलियो फाइल में लगाकर लाएँ।

परियोजना दिशानिर्देश

1. कवर (मुख्य) पृष्ठ में शामिल करें:

परियोजना का शीर्षक, छात्र का नाम, कक्षा और अनुभाग, रोल नंबर, विद्यालय का नाम, विषय, शिक्षक का नाम, सत

मूल्यांकन विधि :-

उपरोक्त समस्त कार्य 50 अंक का है। जिसका अंक विभाजन इस प्रकार है।

विषय वस्तु से संबंधित (10 अंक), रचनात्मकता और प्रस्तुति (10 अंक), सामग्री की सटीकता (10 अंक), वीडियो और फोटोग्राफ (10 अंक), साक्षात्कार/मौखिक प्रस्तुति (10 अंक)

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MATHS

Cpter: Pair of Linear Equations in Two Variables

Project Guidelines & Rubrics (50 Marks)

Project Title Ideas

Choose any one:

1. Applications of Pair of Linear Equations in Daily Life
2. Solving Pair of Linear Equations by Different Methods
3. Graphical Representation of Linear Equations
4. Comparison of Algebraic and Graphical Methods
5. Real-Life Problems Using Linear Equations

Project Guidelines

1. Cover Page Include:

- Project Title
- Student Name
- Class & Section
- Roll Number

- School Name
- Subject
- Teacher's Name
- Session/Year

Introduction

Write about:

- What are linear equations?
- Meaning of pair of linear equations in two variables.
- Standard form:

$$a_1x + b_1y + c_1 = 0 \quad a_2x + b_2y + c_2 = 0$$

- Importance in daily life.

6. Methods of Solving

Explain all methods with examples:

(a) Graphical Method

- Draw graphs on graph paper.
- Show intersection point.

Example:

$$x + y = 5$$

$$x - y = 1$$

(b) Substitution Method

(c) Elimination Method

(d) Cross-Multiplication Method

Include at least 2 solved examples for each method.

7. Real-Life Applications

Include word problems such as:

- Ticket pricing
- Shopping bills
- Age problems
- Distance and speed
- Income and expenditure

Example: The sum of two numbers is 20 and their difference is 4. Find the numbers.

8. Activity Section

Suggested activities:

- Prepare a chart showing types of solutions:
 - Intersecting lines
 - Parallel lines
 - Coincident lines

Use equations like:

$$2x + y = 5$$

$$4x + 2y = 10$$

9. Conclusion

Write what you learned from the project.

10. Bibliography

Mention:

- NCERT Mathematics Book
- Teacher's Notes
- Reference Books
- Educational Websites

Representation Instructions

- Use neat handwriting.
- Use coloured pens for headings.
- Draw graphs properly using ruler and pencil.

- Attach graph papers wherever needed.
- Decorate moderately.
- Keep project between 15–20 pages.

Assessment Rubrics (50 Marks)

Criteria	Description	Marks
Content Accuracy	Correct concepts, formulas, and solutions	10
Explanation & Understanding	Clear explanation of methods and concepts	10
Graphs & Mathematical Work	Proper graphs, calculations, and examples	10
Creativity & Presentation	Attractive layout, charts, neatness	8
Real-Life Applications	Practical problems and activities	6
Viva/Oral Presentation	Confidence and understanding during presentation	6
Total		50 Marks

PHYSICS

PROJECT-1

SMART MIRROR FOR THE FUTURE

Theme: “Mirror Beyond Reflection”

Aim

To design a conceptual smart mirror that can be used in homes, hospitals, cars, or schools.

Innovative Thought

Students imagine how ordinary mirrors can become intelligent devices using reflection principles and modern technology.

Materials Required

- Cardboard
- Aluminum foil/mirror sheet
- Transparent plastic sheet
- LED strip (optional)
- Mobile phone/tablet (optional)
- Sketch pens
- Glue and scissors

Procedure

1. Prepare a rectangular cardboard frame.
2. Attach mirror sheet in the center.
3. Add sections showing smart features.
4. Draw/display ideas such as:
 - a. Weather updates
 - b. Face recognition
 - c. Health monitoring
 - d. Virtual dressing mirror
 - e. Reverse parking assistance
5. Explain how reflection helps these systems.

Scientific Principle

Reflection from plane mirrors forms virtual, erect, and same-sized images.

Real-Life Applications

- Smart homes
- Security systems
- AI-based mirrors
- Automotive mirrors

Student Research Questions

1. How can mirrors help AI systems?

- Why are mirrors important in security?
- Can mirrors reduce accidents?

CHEMISTRY

Project-1 Study the following dataset on common chemical reactions and their energy changes.

Reaction	Equation	Type	Energy	Daily Use
Burning of Mg	$2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$	Combination / Redox	Exothermic	Fireworks
Electrolysis of water	$2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$	Decomposition	Endothermic	Hydrogen fuel
Slaking of lime	$\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$	Combination	Exothermic	Whitewash
Silver nitrate + NaCl	$\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$	Double Displacement	Mild	Qualitative test
Zn displacing Cu	$\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$	Single Displacement / Redox	Exothermic	Electroplating concept

Analysis Questions:

- Identify which of the five reactions involve a change in oxidation state. For each, name the species oxidised and reduced.
- Why does the electrolysis of water require energy input, while burning magnesium releases energy? Connect to the concept of bond breaking and bond formation.
- Predict: If iron is used instead of zinc in the displacement reaction with CuSO_4 , will a reaction occur? Justify using the reactivity series.
- The slaking of lime releases heat. If you add lime to a large quantity of water in a bucket, what would you observe? Write the equation and name this reaction type.
- Research and create a comparison table for all five reactions listing: reactant state, product state, energy type, observable change, and industrial/domestic application.

PROJECT-2 Dataset: Study the following data on soil pH and crop suitability.

Crop	Ideal pH	Condition if pH too low	Treatment	Annual Yield (t/ha)
Rice	5.5–6.5	Aluminium toxicity, poor growth	Add lime (CaO or Ca(OH)_2)	4.5
Wheat	6.0–7.0	Nutrient deficiency, stunted growth	Liming + NPK fertiliser	3.2
Tea	4.5–5.5	Grows poorly in alkaline soil	Add sulphur or acidic compost	1.8
Cotton	5.8–7.0	Iron deficiency, chlorosis	Gypsum + organic matter	0.6
Potato	4.8–5.5	Scab disease increases	Organic acid mulch	22.0

Analysis

Questions — Answer all questions based on the dataset:

- Which crop has the widest pH tolerance range? Which requires the most acidic soil? A farmer finds his soil has pH 4.0. Which crops can he grow without any treatment?
- Explain why lime (Ca(OH)_2) is added to acidic soil. Write the balanced neutralisation reaction between Ca(OH)_2 and the common soil acid H_2SO_4 . What other benefit does the calcium ion provide to the soil?
- Acid rain has a pH of about 4.0. Using the dataset, predict its effect on a wheat field. Write the equation for the reaction of acid rain (H_2SO_3) with calcium carbonate present in soil. What is this effect called on marble monuments?
- Plot a bar chart showing ideal pH ranges for all five crops (show min and max as a range of bar or two separate bars). Write a two-sentence conclusion about which crops suit neutral vs acidic soil.
- Research: What is the pH of human blood (7.35–7.45)? What is 'acidosis' and 'alkalosis'? How does the bicarbonate buffer system ($\text{HCO}_3^- / \text{H}_2\text{CO}_3$) maintain blood pH? Write the equilibrium equation.

BIOLOGY**Study the following dataset on macronutrient composition of common foods.**

Food (per 100g)	Carbohydrate (g)	Protein (g)	Fat (g)	Fibre (g)	Calories (kcal)
Rice (cooked)	28.2	2.7	0.3	0.4	130
Lentils (cooked)	20.1	9.0	0.4	7.9	116
Egg (whole)	1.1	13.0	11.0	0	155
Banana	23.0	1.1	0.3	2.6	89
Milk (full fat)	5.0	3.4	3.7	0	61

Analysis Questions:

- 1. Which** food has the highest protein content per 100g? Why is protein important for the human body — name three specific functions.
- 2. Calculate** the total caloric contribution of carbohydrate, protein, and fat in 100g of egg. (Use: 1g carb = 4 kcal, 1g protein = 4 kcal, 1g fat = 9 kcal.) Compare your answer to the table value (155 kcal) and explain any difference.
- 3. Draw** a stacked bar chart showing the macronutrient composition (carb, protein, fat) of all 5 foods. Label axes and write a two-sentence nutritional interpretation.
- 4. Why** do lentils have more fibre than rice? What is the role of dietary fibre in digestion? Why is dietary fibre not technically a 'nutrient' in the traditional sense, yet essential for health?
- 5. A child** is given only rice and banana for a week. Using the table, identify which nutrients are deficient. What diseases or health problems would result? Design a nutritionally balanced meal using only the foods in the table.

SOCIAL SCIENCE**Topic 1: Comparative Case Study of Belgium and Sri Lanka (Civics)****Assigned to: Roll Numbers 1, 2, 3, 4, 5**

Student Task: Write a detailed comparative analysis between the political choices made by Belgium and Sri Lanka after gaining independence.

Assessment Milestones:

Explain the ethnic composition of both countries.

Contrast Belgium's amendments for accommodation against Sri Lanka's 1956 Majoritarian Act.

Conclude with a critical analysis of the long-term consequences (peace vs. civil war).

Topic 2: Modern Forms of Power Sharing with Examples (Civics)**Assigned to: Roll Numbers 6, 7, 8, 9, 10**

Student Task: Create an illustrative guidebook explaining the four major forms of power sharing in modern democracies.

Assessment Milestones:

Detail Horizontal division (Legislature, Executive, Judiciary) and explain the system of checks and balances.

Detail Vertical division (Federal government down to Local bodies).

Provide real-world, current examples for power sharing among distinct social groups and political coalitions.

Topic 3: The Philosophy of Power Sharing: Prudential vs. Moral (Civics)**Assigned to: Roll Numbers 11, 12, 13, 14, 15**

Student Task: Write a formal opinion report or newspaper editorial arguing why power sharing is intrinsically necessary for a democratic nation.

Assessment Milestones:

Clearly define and distinguish between prudential reasons (reasons based on careful calculation of gains/losses, like reducing social conflict) and moral reasons (reasons emphasizing the very spirit and value of democracy).

Use India's democratic structure as a primary case study to justify how power sharing keeps the country united.

Conclude by answering the assessment question: "Can a multi-ethnic democracy survive peacefully without power sharing?" Provide strong arguments.

Topic 4: Coalition Governments and Pressure Groups in India (Civics)**Assigned to: Roll Numbers 16, 17, 18, 19, 20**

Student Task: Research the dynamics of political power sharing outside of single-party rule, focusing on alliances and public influence.

Assessment Milestones:

Define what a coalition government is and briefly trace its emergence in Indian politics since the 1990s.

Analyze how interest groups, trade unions, farmers' groups, and pressure groups successfully exert influence on government decision-making without contesting elections.

Evaluate whether multi-party power sharing makes governance more stable or unstable, giving balanced arguments for both sides.

Topic 5: Soil Profile Scrapbook & Map Work (Geography)

Assigned to: Roll Numbers 21, 22, 23, 24, 25

Student Task: Assemble a physical or highly visual scrapbook detailing India's primary soil resources alongside geographic mapping.

Assessment Milestones:

Dedicate separate sections to 4 major soil types: Alluvial, Black, Red and Yellow, and Laterite soil.

For each soil type, detail its parent rock material, chemical composition (richness/deficiencies in nutrients), moisture retention capacity, and ideal crops grown.

Attach an accurately shaded political map of India with a clear color index, identifying the major geographical zones where these soils dominate.

Topic 6: Sustainable Development & Land Degradation Blueprint (Geography)

Assigned to: Roll Numbers 26, 27, 28, 29, 30

Student Task: Formulate an environmental action blueprint targeting the contemporary global and national crises of land resource depletion.

Assessment Milestones:

Define the concept of sustainable development and explain why resource conservation is vital for future generations.

Identify the specific human activities causing land degradation in different Indian states (e.g., overgrazing in Gujarat/Madhya Pradesh, mining in Jharkhand, over-irrigation in Punjab/Haryana).

Propose a practical 5-point action plan for soil conservation and land reclamation (e.g., shelterbelts, afforestation, stabilization of sand dunes).

Topic 7: Resource Planning & Regional Disparities in India (Geography)

Assigned to: Roll Numbers 31, 32, 33, 34, 35

Student Task: Conduct a research project analyzing why resource availability does not always translate to economic wealth across different Indian regions.

Assessment Milestones:

Outline the three essential stages of resource planning in India (Identification, Evolving a structure, Matching plans with national development).

Contrast a resource-rich but economically backward region (like Jharkhand, Chhattisgarh, or Odisha) with a resource-poor but economically developed region.

Evaluate the unique ecological and cultural resource status of the cold desert of Ladakh, highlighting its infrastructural deficiencies.

Topic 8: Global Environmental Frameworks: Rio Earth Summit & Agenda 21 (Geography)

Assigned to: Roll Numbers 36, 37, 38, 39, 40

Student Task: Create a historical and analytical research report on global institutional efforts toward resource conservation and environmental protection.

Assessment Milestones:

Document the background, year, and core objectives of the first United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro.

Deconstruct the principles of Agenda 21, explaining why combatting environmental damage, poverty, and disease requires local governments to draft their own local Agenda 21.

Analyze the role of Arid and Forest soils in global desertification, explaining how global climate goals impact local land management.

Rubrics Main (50 Marks)

Content and Factual Accuracy (15 Marks)

Critical Thinking and Analysis (15 Marks)
Presentation, Structure, and Map/Visual Work (15 Marks)
Punctuality and Completeness (5 Marks)

FRENCH

Question 1 – Mes amis/My Friend Circle (Leçon 1) (10 Marks)

Dans cette leçon, les amis se rencontrent et parlent ensemble.

Faites une petite recherche sur l'amitié chez les adolescents aujourd'hui. (In Retrouvons nos amis, friends meet and talk about their lives.)

Task: Research and write about friendship among teenagers today. Include:

- Quelles activités les amis font ensemble (What activities friends do together)
- Comment les amis s'aident (How friends help each other)
- Pourquoi l'amitié est importante dans la vie des élèves (Importance of friendship in student life)

Q2 Communication entre amis/Communication between Friends (Leçon1)(10 Marks)

Aujourd'hui, les élèves communiquent avec WhatsApp, Instagram, les appels téléphoniques et les conversations directes. (Today students communicate in many ways such as WhatsApp, Instagram, phone calls, and face-to-face conversations.)

Task: Find out which communication method is most popular among teenagers. Write:

- Quel moyen de communication vous utilisez le plus. (Which method you use most)
- Pourquoi les élèves l'aiment ? (Why do students like it?)
- Un avantage et un inconvénient. (One advantage and one disadvantage of it)

Question 3 – Mon futur métier/Career Choices (Leçon 2) (10 Marks)

Dans cette leçon, les élèves parlent de leurs études et de leur carrière future. (In Après le bac, students think about their future studies and careers.)

Task: Research any one career you may like in future. Include:

- Le nom du métier (Name of the career)
- Les compétences nécessaires (Skills needed)
- Pourquoi vous aimez ce métier? (Why do you like this career?)
- Les matières importantes pour ce métier? (Which subjects are important for it?)

Q4 – Étudier en Inde ou en France ? Study in India or Abroad? (Leçon2) (10 Marks)

Beaucoup d'élèves rêvent d'étudier dans une autre ville ou un autre pays après l'école. (Many students dream of studying in another city or country after school.)

Task: Find information about one famous university or college in India or France. Write:

- Le nom de l'université (Name of the university)
- Les cours proposés (Courses offered)
- Pourquoi les étudiants aiment étudier là-bas? (Why students like to study there?)

You may paste a picture or logo.

Q5 – Mes projets d'avenir /My Future Plans (Leçon 2) (10 Marks)

Chaque élève a des rêves et des objectifs pour l'avenir. (Every student has dreams and goals for the future.)

Task: Write about your future plans. Include:

- Ce que vous voulez devenir. (What you want to become)
- Où vous voulez étudier? (Where do you want to study?)

Comment vous allez atteindre votre objectif ? (How you will achieve your goal?)

Rubrics

Criteria	Marks	Description
Content & Research	4 marks	Information is correct, relevant, and well researched.
French Language	2 marks	Proper French vocabulary, grammar, and sentence formation.
Creativity & Presentation	2 marks	Neat work, attractive presentation, pictures/logos used properly.
Completion of Task	2 marks	All points/questions are answered completely.

SKILL SUBJECTS

**PHYSICAL
ACTIVITY
TRAINER
(PAT)**

RESEARCH PROJECT TOPIC:-

- **Impact of Exercise on Mental Health** – Study how regular physical activity reduces stress, anxiety, and depression among students. (Roll N0-1-5)
- **Role of Yoga in Physical Fitness** – Explore yoga's contribution to flexibility, strength, and relaxation. (Roll N0-6-10)

- **Nutrition and Athletic Performance** – Investigate how diet influences stamina, recovery, and overall performance. **(Roll N0-1`-15)**
- **Technology in Fitness Training** – Examine fitness apps, wearables, and online coaching in modern training. **(Roll N0-16-20)**
- **Injury Prevention in Sports** – Research warm-ups, cool-downs, and protective gear to reduce injuries. **(Roll N0-21-25)**
- **Physical Activity and Academic Achievement** – Analyze the link between exercise and concentration, memory, and grades. **(Roll N0-26-30)**
- **Gender Differences in Physical Fitness** – Compare male and female responses to training programs. **(Roll N0-31-36).**
- **Traditional Games and Modern Fitness** – Study how indigenous games (like kabaddi, kho-kho) contribute to physical development. **(Roll N0-37-45)**

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
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4. Index
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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

TOURISM

Question 1

(10 Marks)

Imagine you are a Guest Relations Executive at a heritage resort in Rajasthan. A group of international tourists arrive after a long, exhausting journey, only to find that their luxury suites are not ready due to

a technical glitch in the property management system. The group leader is extremely frustrated and speaks loudly at the reception desk.

Task: Draft a comprehensive step-by-step conflict resolution strategy utilizing specific soft skills (such as empathy, active listening, and emotional intelligence) to diffuse the situation, ensure guest satisfaction, and preserve the hotel's reputation. Categorize your response into immediate actions, compensatory gestures, and long-term relationship management.

Question 2 (10 Marks)

Personal grooming, deportment, and body language are considered the silent ambassadors of a tourism professional.

Task: Analyse how non-verbal soft skills influence a tourist's first impression and overall experience during a guided city tour. Provide three distinct scenarios where positive body language can enhance customer delight, and conversely, three scenarios where poor deportment or grooming could lead to a negative review of the tour agency.

Question 3 (10 Marks)

Teamwork and cultural sensitivity are critical soft skills when managing diverse groups in MICE (Meetings, Incentives, Conferences, and Exhibitions) tourism.

Task: You are appointed as the Event Coordinator for an international medical conference with delegates attending from Japan, France, and the USA. Detail how you will practice cultural adaptability and collaborative teamwork to manage the diverse expectations of these delegates. Identify two potential cross-cultural misunderstandings that could arise and explain how proactive soft skills can prevent them.

Question 4 (10 Marks)

Effective communication is often hindered by various barriers, which can be catastrophic in a service-oriented industry like tourism.

Task: Critically evaluate the impact of Physical, Psychological, and Language/Cultural barriers in a busy airport tour-desk environment. For each barrier, provide a realistic tourism-based example and propose a highly effective, practical strategy that an employability-conscious professional should implement to overcome it.

Question 5 (10 Marks)

The choice between oral, written, and non-verbal communication channels depends heavily on the context, audience, and urgency of the message.

Task: Compare and contrast the effectiveness of Written Communication (e.g., sending an itinerary via email) versus Oral Communication (e.g., explaining the itinerary over a phone call) when finalizing a luxury holiday package for a family. Structure your analysis by evaluating both channels against parameters such as clarity, legal accountability, feedback speed, and personal touch. Recommend a hybrid communication model that ensures zero errors.

Rubrics

Criteria	Marks	Description
Content Knowledge	3	Demonstrates clear understanding of tourism concepts, soft skills, communication methods, and professional Practice.
Application & Analysis	3	Applies concepts to real-life tourism situations with logical explanations and examples.
Organization & Presentation	2	Answer is well-structured with headings, points, and proper sequencing ideas.
Creativity & Critical Thinking	1	Shows originality, problem-solving ability, and Thoughtful suggestions.
Language & Grammar	1	Uses correct grammar, professional vocabulary, and clear sentence

DATA SCIENCE

1. Draw a graph to represent Standard deviation of 4.6 Teacher's Note: The teacher should ask the students to draw the graph of standard deviation. If required, the teacher can take references from the chapter on how to represent the standard deviation.
2. Calculate the mean of this data set - [56, 89, 76, 58, 58, 65] Teacher's Note: The teacher should ask the students to calculate the mean of given data set using the formula for calculating the mean.

3. Calculate the median of this data set - [56, 89, 76, 58, 58, 65] Teacher's Note: The teacher should ask the students to calculate the median of given data set using the formula for calculating the median.
4. Consider that you have a food event in your residential society. Perform detailed analysis and interpret what should be the top five cuisines that most people in society prefer for this event.

AI

Prepare a Lab manual with all these 15 python codes.

1. Write a Python program to calculate the area of a rectangle , sides are entered by the user.
2. Write a Python program to find the largest of two numbers.
3. Write a Python program to display the multiplication table of a number.
4. Write a Python program to print numbers from 1 to 10 using a loop.
5. Write a Python program to create a simple calculator using arithmetic operators.
6. Write a Python program to count the number of vowels in a string.
7. Write a Python program to store five fruits in a list and display them one by one.
8. Write a Python program to find the factorial of a number.
9. Write a Python program to reverse a string.
10. Write a Python program to find the maximum number in a list.

Each code carries 5 marks.

PHARMA & BIOTECH.

Introduction - Sales and marketing are important skills in every field, including science-based products such as medicines, sanitary items, fertilizers, household cleaners, and food products. This task helps students understand how a product is presented, priced, promoted, and sold in the market.

Part A: Product Analysis

Choose one science-related product from the list below:

Toothpaste

Handwash

Mosquito repellent

Nutritional drink

Soap

Detergent

OR any other daily-use science-based product

Write the following details:

1. Name of the product.
2. Brand name.
3. Type of product.
4. Price and quantity.
5. Main ingredients or features.
6. Target customers.
7. Usefulness in daily life.
8. Why people prefer this product over others.

Marks: 8

Part B: Advertisement Analysis

- Collect or paste one advertisement of the same product and answer:
- What is the main message of the advertisement?
- Which words or visuals attract customers?
- Does the ad give useful information or only try to sell the product?
- Is the advertisement honest and believable? Give reasons.

Marks: 4

Part C: Label Study

Study the product label carefully and answer:

- MRP
- Net quantity
- Manufacturing date
- Expiry date

- Batch number
- Ingredients or composition
- Instructions for use
- Safety warnings, if any

Marks: 3

Task 2: Local Market Survey

Introduction- A market survey helps us understand consumer choice, pricing, packaging, and availability. It also shows how businesses compete to attract buyers.

Survey Table

Visit a nearby shop or use online shopping platforms and collect information about any five products from the same category.

S. No.	Product Name	Brand	Price	Quantity	Main Feature	Customer Preference
1						
2						
3						
4						
5						

Analysis Questions

1. Which product is the most expensive and why?
2. Which product is the cheapest, and why do people buy it?
3. Which brand appears most popular?
4. How does packaging affect buying decisions?
5. Which features matter most to customers: price, quality, brand, or quantity? Explain.
6. Which product would you recommend and why?

Marks: 12

Task 3: Creative Marketing Project

Introduction - Marketing is not only about selling; it is also about communicating value clearly. A good product campaign should be attractive, informative, and ethical.

Option A: Create a Poster

Design a colorful poster for the chosen product with:

Product name

Slogan

Price

Best features

Suitable picture or drawing

A short promotional message **OR**

Option B: Create a Mini Campaign

- Prepare a short campaign plan with:
- Product name
- Logo idea
- Slogan
- Target audience
- 3 promotional points
- 1 honest claim that the product can make

Answer the following:

1. What is the difference between sales and marketing?
2. Why is customer satisfaction important?
3. What makes a product attractive to buyers?
4. Why should advertisements be truthful?
5. How do science-based products help daily life?

Presentation Guidelines

- Use neat handwriting and proper headings.
- Paste pictures, labels, or advertisements neatly.
- Use coloured pens or pencils for charts and posters.
- Keep the project creative, clean, and well-organised.

Write original answers in your own words.

Marking Scheme

Criterion	Marks
Product analysis	8
Advertisement analysis	4
Label study	3
Market survey table and questions	12
Creative marketing project	10
Presentation and neatness	8
Timely submission	5
Total	50

CLUB SUBJECTS**GAMIFICATION**

Activity 1: Develop a game by using pictoblox on dodge ball game.
Activity 2: Develop a game by using pictoblox on easy chase game

MECHATRONICS**PROJECT – 1****Diodes in Daily Life: Exploring Electronic Components****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****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

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

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

Topic: Rectifiers and Diodes

Total Marks: 50

**AI
EMBROIDER
Y**

Make Project file make 15 simple stitch and write about it in brief

**3D
EMBEDDED
TEC.ROBOTI
CS**

Activity 1: Self balancing robot

Materials Required:

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

Instructions:

- This project is completely research, survey, and assessment based.
- Students must complete the work neatly in a project file/scrapbook.
- Use newspaper articles, advertisements, screenshots, graphs, and interview responses wherever required.
- Both tasks are compulsory.

TASK 1 – RESEARCH, CASE STUDY & REPORT WRITING (25 Marks)

Activity: Exploring Mass Communication

Research the following topics:

1. Meaning and importance of mass communication
2. Types of media:
 - a. Print Media
 - b. Electronic Media
 - c. Social Media
 - d. Digital Journalism
3. Role of media in democracy and public opinion
4. Advantages and disadvantages of mass communication
5. Impact of fake news and misinformation

Case Study Analysis:

Choose any one recent media-related incident:

- Viral fake news
- Social media campaign
- Breaking news event
- Online awareness campaign
- Digital advertisement trend

Analyze:

1. What happened?
2. Which media platform was involved?
3. Positive and negative impacts on society
4. How people reacted to the information
5. Measures to control misinformation

Interview Task:

Interview any one person:

- Teacher
- Parent
- Content creator
- Journalist
- Business owner

Ask:

1. How does the media influence people's thinking?
2. Is social media more powerful than traditional media?
3. How can responsible journalism help society?

Task:

- Prepare the interview in the report format.
- Write your conclusion on:

"The Power and Responsibility of Media"

TASK 2 – SURVEY, DATA ANALYSIS & PRESENTATION (25 Marks)

Activity: Media Influence Survey

Conduct a survey of **10–15 people**.

Ask the following questions:

S.No	Questions
1	Which media platform do you use the most?

- 2 Did you verify the news before sharing it?
- 3 Has social media changed people’s opinions?
- 4 Which medium spreads information the fastest?
- 5 Can media influence elections, trends, and public thinking?

Task:

1. Record responses in the table form.
2. Calculate:
 - a. Percentages
 - b. Most common responses
 - c. Total participants
3. Prepare:
 - a. One bar graph
 - b. One pie chart
4. Write 5 observations from the survey.
5. Write a paragraph on:

“Positive and Negative Impact of Social Media on Teenagers” Assessment Sheet

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

Algorithm

- 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 odd.
 5. Write a Python program to find the largest of two numbers.
 6. Write a Python program to find number is odd or even.
 7. Write a Python program to find number is positive or negative.
- Question 1 carries 2 marks and remaining are of 8 marks each.

MOVIE MAKING

Holiday Homework – Movie Making
 Class 10th
 Topic: Camera Angles & Movement
 Write Short Notes on:
 Dolly Shot
 Tracking Shot
 Low Angle Shot
 Over the Shoulder Shot
 Mid Shot
 Practical Work:
 Make a 2–3 minute short film on Motivation or Discipline using:
 1 Dolly Shot
 1 Low Angle Shot
 1 Over the Shoulder Shot