



Rukmani Birla Modern High School

Session 2026-27

SUMMER ASSIGNMENT

Dear Students,

*Summer holidays bring thoughtful days,
Where learning blooms in gentle ways.
Do your assignments, spark your mind,
Read books too—new worlds you'll find.*

*Explore near and wide with purpose true,
Spend time with family, friends by you.
Help birds and strays with caring hands,
Kindness nurtures across the lands.*

*Return rejuvenated, relaxed, refreshed, revived,
recharged,*

Hearts aglow, with wisdom enlarged.

*Summer's lessons, soft and slow,
Will help your knowledge to grow.*

Complete your class-specific assignments mindfully during this enriching break.

Tasks follow on the next pages.

Submit on the first day back.

Happy Holidays



RUKMANI BIRLA MODERN HIGH SCHOOL
SESSION 2026-27
SUMMER ASSIGNMENT
CLASS XII

Subject	Assignment
English	<p>Project Question How do the themes of silence (introspection), nature’s beauty, and escapism in Pablo Neruda’s ‘Keeping Quiet’, John Keats’ ‘A Thing of Beauty’, and Jack Finney’s ‘The Third Level’ help us understand and respond to modern issues such as mental health problems, environmental destruction, and the suffering caused by conflicts like the 2026 US-Iran conflict? Guidelines for the Research File</p> <p>Project Structure</p> <p>1. Cover Page</p> <ul style="list-style-type: none">➤ Title of the Project➤ Student Name➤ Class & Section➤ Roll Number➤ Session➤ Submitted To➤ Submitted By <p>2. Acknowledgement</p> <p>3. Certificate</p> <p>4. Index</p> <p>5. Project Topic</p> <p>6. Objectives of the Project</p> <p>Main Sections of the Project</p> <p>1. Introduction</p> <ul style="list-style-type: none">• Introduce the three chapters and their major themes:• Introspection in Keeping Quiet• Nature’s beauty in A Thing of Beauty• Escapism in The Third Level• Relevance to present-day global issues. <p>2. Thematic Analysis</p> <p>A. Mental Health Challenges</p> <p>Discuss:</p> <ul style="list-style-type: none">➤ Stress, anxiety, and pressure among youth➤ Impact of social media and busy lifestyles➤ Mindfulness, meditation, and silence as healing practices➤ Relevance of Keeping Quiet today <p>You may include:</p> <ul style="list-style-type: none">➤ Statistics or survey findings

- Examples of mindfulness apps or wellness practices

B. Environmental Concerns and Nature's Beauty

Discuss:

- Nature as a source of peace and healing
- Pollution, climate change, deforestation, and industrialization
- Environmental damage caused by wars and conflicts
- Relevance of A Thing of Beauty today

You may include:

- Newspaper clippings
- Charts or pictures related to climate change and nature

C. Escapism and the Search for Meaning

Discuss:

- Escapism as a response to stress and dissatisfaction
- Use of social media, movies, games, travel, fantasy, and nostalgia
- Whether escapism is helpful or harmful?
- Relevance of The Third Level in modern life

You may include:

- Real-life examples
- Survey responses on screen time and entertainment habits

3. Present World Conditions

- Relate the themes to current global issues such as:
- The 2026 Iran- US conflict and its impact on people
- Fear, trauma, and displacement during war
- Environmental and economic damage caused by conflicts
- Increasing mental health concerns and dependence on technology

4. Real-Life Connections (Research Component)

- Conduct short interviews or surveys on:
- Stress and mental health
- Meditation or nature walks
- Social media usage and escapism
- Opinions on global conflicts and their impact

Present findings through:

- Pie charts, bar graphs
- Tables or percentages

5. Suggestions and Solutions

- Suggest practical ways youth can apply these themes in daily life, such as:
- Practicing mindfulness and self-reflection
- Reducing screen time
- Spending time in nature
- Promoting environmental awareness
- Balancing entertainment with responsibilities

	<p>6. Personal Reflection Write what you learned from the three texts & how they changed your understanding of life, nature, mental health, and global issues.</p> <p>7. Bibliography General Instructions</p> <ul style="list-style-type: none"> • Length: 15 and above handwritten pages • Use neat handwriting and proper headings • Add pictures, newspaper clippings, charts, drawings, or creative artwork • Use coloured pens/highlighters for presentation • Maintain originality and avoid copying directly from websites • Include real-life examples and current issues for better analysis.
<p>Physics</p>	<p>Investigatory Project: As per CBSE syllabus, the students have to prepare an investigatory project. The project must be based on some concept of physics of standard class XII. The students will have to submit a report on the project comprising scientific investigations involving laboratory testing and collecting information from other sources.</p> <p>Guidelines to be followed:</p> <p>(a) The students will get the topic of investigation from the concerned subject teacher.</p> <p>(b) Brief report (Investigation file)</p> <p>Mention following details:</p> <ul style="list-style-type: none"> • Cover Page • Index • Certificate • Acknowledgement • Content: <ol style="list-style-type: none"> 1. Aim (name of investigatory project) 2. Apparatus and material used 3. Theory (concept, diagram etc.) 4. Procedure 5. Experiments and Observations 6. Result/Conclusion 7. Application of project in daily life • Bibliography <p>Suggested Investigatory project:</p> <ol style="list-style-type: none"> 1. To study various factors on which the internal resistance/EMF of a cell depends. 2. To study the variations in current flowing in a circuit containing an LDR because of a variation in: <ol style="list-style-type: none"> (a) the power of the incandescent lamp, used to ‘illuminate’ the LDR (keeping all the lamps at a fixed distance). (b) the distance of an incandescent lamp (of fixed power) used to ‘illuminate’ the LDR.

	<p>3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.</p> <p>4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.</p> <p>5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.</p> <p>6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.</p> <p>7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.</p> <p>8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer. Various factors on which the internal resistance of a cell depends.</p> <p>9. To investigate the phenomenon of total internal reflection.</p> <p>10. To Study the Changing the Speed of Light</p> <p>11. To Study the Long and Short Wavelength Colours</p> <p>12. To Study the Single Slit Diffraction and Double Slit Interference</p> <p>13. Determining the Type of Particle in an Air Sample by Using Laser Light Scattering</p> <p>14. By Using Laser Light Scattering Determine the type of Particle in an Air Sample</p> <p>15. Investigate whether different frequencies of light contain different amounts of energy</p> <p>16. Finding refractive indices of water and oil using a plane mirror and lens of known indices</p> <p>17. To Study the Lenz law of Electromagnetic Induction</p> <p>18. To study the resonance condition of an LCR Series circuit.</p> <p>19. To Study the Phenomenon of Electromagnetic Induction</p> <p>20. To Study the Eddy Current Effect in the Transformers Windings</p> <p>Note. Submit report of the project with spiral binding support .</p>
<p>Chemistry</p>	<p>Investigatory Project: Scientific investigations involving laboratory testing and collecting information from other sources.</p> <p>Project must cover the following:</p> <ul style="list-style-type: none"> • Cover Page • Index • Certificate • Acknowledgement • Objective of Project • Content • Experiments

	<ul style="list-style-type: none"> • Bibliography <p>Few suggested projects: Some suggestive Investigatory projects</p> <ul style="list-style-type: none"> • Presence of Oxalate Ions in Guava Fruit and Different Stages of Ripening • Sterilization of Water Using Bleaching Powder • Analysis of Fertilizer • Effect of Potassium Bisulphate as a Food Preservative • Quantity of Presence of Casein in Different Samples of Milk • Extraction of various essential oils present in Ajwain (Carum), Illaichi (Cardamom), and Saunf (Fennel Seeds) • Chemistry in black and white photography • Effects of Dye on different types of fabric • Comparative study of the rate of fermentation in the following substances- <ul style="list-style-type: none"> • Potato juice, wheat flour, carrot juice, gram flour, etc. • Measure the amount of acetic acid in vinegar • Determination of contents in cold drinks • Removal of alcohol from the body through Esterification • Study of diffusion of solids in liquids • Compare the rate of evaporation of different liquids • Check the ions present in a toothpaste • Study the effects of metal coupling on the rate of corrossions • Determining caffeine in tea samples • Presence of pesticides and insecticide in fruits and vegetables • Common food adulterants in fat, butter, oil, turmeric powder, pepper, chilli Powder, sugar, etc. • Measuring solubility of saturated solutions
Mathematics	<p>Do the following Activities in the Mathematics Activity File:</p> <ol style="list-style-type: none"> 1. To verify that the relation R in the Set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive. 2. To draw the graph of $\sin^{-1}x$, using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$). 3. To sketch the graphs of a^x and $\log_a x$, $a > 0$, $a \neq 1$ and to examine that they are mirror images of each other. 4. To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of the number x. 5. To verify that for a function f to be continuous at given point x_0, $\Delta y = f(x_0 + \Delta x) - f(x_0)$ is arbitrarily small provided, Δx is sufficiently small. 6. To understand the concepts of decreasing and increasing functions. 7. To understand the concepts of local maxima, local minima and point of inflection.
Biology	<p>Investigatory Project: As per CBSE guidelines, the students have to prepare an investigatory project on a topic. They have to submit the project file comprising the scientific investigations done by him//her and the information</p>

collected from appropriate sources. The work should be done only on A4 size sheets.

Presentation of the project

- Index
- Certificate
- Acknowledgement
- Objective of Project
- Introduction
- Content
- Discussion and Conclusion
- Bibliography

Few suggested topics:

- Biomimicry
- Amniocentesis
- Diabetes and Exercise
- Pedigree- X Linked Traits
- Human Embryo Development
- Anthropogenic action and environment (evidences from present conditions)
- Biopiracy
- Pollination
- Evolutionary time line
- Chromosomal disorder
- Sickle cell anaemia
- Evolutionary evidences
- Population interaction
- Conservation strategies for animals in your city
- DNA fingerprinting
- Harmful effects of mobile radiations
- Microbes to control pollution
- Biofertilizers
- Population explosion and control
- Effect of smoking during pregnancy
- IVF
- Genetic engineering for Indian Farmers
- Techniques in biotechnology
- Possible effect of maternal behavior on fetal development
- Role of recombinant DNA technology in modern medicine
- Algal bloom and preventive measures
- Twins: monozygotic and dizygotic
- Erythroblastosis fetalis

Geography	<p>Complete first three chapters in your practical file. Chapter 1- Data- Its source and composition Chapter 2 – Data Processing Chapter 3- Graphical Representation of Data. Make notes of the chapters taught till date. Prepare a folder of Map work as per CBSE syllabus 2026-27.</p>
History	<p>PROJECT WORK Guidelines for History Project Work: 20 Marks One Project to be done throughout the session, as per the existing scheme. 1. Steps involved in the conduct of the project: Students may work upon the following lines :</p> <ul style="list-style-type: none"> • Choose a Title/Topic • Need of the Study, Objective of the Study • Hypothesis • Content -Timeline, Maps, Mind maps, Pictures, etc. • (Organization of Material/Data Present Material/Data) • Analysing the Material/Data for Conclusion <p>• Draw the Relevant Conclusion • Bibliography</p> <p>2. Expected Checklist for the Project Work:</p> <ul style="list-style-type: none"> • Introduction of topic/title • Identifying the causes, events, consequences and/or remedies • Various stakeholders and effect on each of them • Advantages and disadvantages of situations or issues identified • Short-term and long-term implications of strategies suggested during research • Validity, reliability, appropriateness, and relevance of data used for research work and for presentation in the project file • Presentation and writing that is succinct and coherent in project file • Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc. <p>FEW SUGGESTIVE TOPICS FOR PROJECTS - CLASS XII</p> <ol style="list-style-type: none"> 1. The Indus Valley Civilization-Archaeological Excavations and New Perspectives 2. The History and Legacy of Mauryan Empire 3. “Mahabharat”- The Great Epic of India 4. The History and Culture of the Vedic period 5. Buddha Charita 6. A Comprehensive History of Jainism 7. Bhakti Movement- Multiple interpretations and commentaries. 8. “The Mystical Dimensions of Sufism 9. Global legacy of Gandhian ideas 10.The Architectural Culture of the Vijayanagar Empire 11.Life of women in the Mughal rural society

	<p>12. Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India</p> <p>13. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity</p> <p>14. The Philosophy of Guru Nanak Dev</p> <p>15. The Vision of Kabir</p> <p>16. An insight into the Indian Constitution</p> <p>17. Comparative study of Stupas and Pillar edicts</p> <p>18. Comparative study of Mughal and Vijayanagar architecture</p> <p>Students to pick any one topic after a thorough discussion with the subject teacher.</p> <p>In the research project, students can go beyond the textbook and explore the world of knowledge. They can conceptualize under the embedded themes. Forms of rubrics are a significant aspect and to be discussed in the classroom itself for clear understanding of concept and for assessment.</p>
<p>Business Studies</p>	<p>Students are supposed to select one unit out of four and are required to make only ONE project from the selected unit.</p> <p>Project One: Elements of Business Environment</p> <ol style="list-style-type: none"> Changes witnessed over the last few years on mode of packaging and its economic impact. Changing role of the women in the past 25 years relating to joint families, nuclear families, women as a bread earner of the family, changes in the requirement trend of mixers, washing machines, micro wave and standard of living. The changes in the pattern of import and export of different Products. The trend in the changing interest rates and their effect on savings etc. <p>Project Two: Principles of Management</p> <p>The students are required to visit any one of the following:</p> <ol style="list-style-type: none"> A departmental store. An Industrial unit. A fast food outlet. <p>They are required to observe the application of the general Principles of management advocated by Fayol.</p> <p style="text-align: center;">OR</p> <p>They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited. The observations could be on the basis of-</p> <ul style="list-style-type: none"> ❖ The different stages of division of work resulting to specialization. ❖ Following instructions and accountability of subordinates to higher authorities. ❖ Visibility of order and equity in the unit. ❖ Communication levels and pattern in the organization. ❖ Methods and techniques followed by the organization for unity of direction and Coordination amongst all etc. <p>Project Three: Stock Exchange</p> <p>The students are expected to:</p> <ol style="list-style-type: none"> Develop a brief report on History of Stock Exchanges in India. Prepare a list of at least 25 companies listed on a Stock Exchange. To make an imaginary portfolio totaling a sum of Rs. 50,000 equally in any of the 5 companies of their choice listed above over a period of twenty working days. <p>The students are required to report the prices of the stocks on daily basis and present it diagrammatically on the graph paper.</p>

	<p>Project Four: Marketing</p> <p>Identify any one product/service which the students may like to manufacture/provide. The students are required to make a project on the identified product/service keeping in mind why they selected the product, 5 competitive brands, permission and licenses, USP, Logo, Tagline, Pricing of the product/ service, social message, promotion etc.</p> <p><u>Presentation and Submission of Project Report</u></p> <p>At the end of the stipulated term, each student will prepare and submit his/her project report.</p> <p>Following essentials are required to be fulfilled for its preparation and submission.</p> <ol style="list-style-type: none"> 1. The total length of the project will be of 25 to 30 pages. 2. The project should be handwritten. 3. The project should be presented in a neat folder. 4. The project report should be developed in the following sequence- <ul style="list-style-type: none"> <input type="checkbox"/> Cover page should include the title of the Project, student information, school and year. <input type="checkbox"/> List of contents. <input type="checkbox"/> Acknowledgements and preface <input type="checkbox"/> Introduction. <input type="checkbox"/> Topic with suitable heading. <input type="checkbox"/> Planning and activities done during the project, if any. <input type="checkbox"/> Observations and findings of the visit. <input type="checkbox"/> Conclusions (summarized suggestions or findings, future scope of study). <input type="checkbox"/> Photographs (if any). <input type="checkbox"/> Appendix
<p>Sociology</p>	<p>PROJECT WORK</p> <p>As per the CBSE guidelines each student has to prepare a research project. The project must involve actual first hand research done by the students in close consultation with the teacher. Students can take any topic of their choice emphasizing the importance/effects/role of society.</p> <p>PREPARATION AND SUBMISSION OF PROJECT REPORT</p> <p>Each report must fulfill the following requirements:</p> <ol style="list-style-type: none"> 1. The body of the Project Report will be of approximately 15-20 A4/A3 Pages excluding additional appendices, questionnaires etc. 2. The project report will be written in the student's own hand; though they may include other illustrative material that is not hand - written 3. The project report will contain the following matter: <ol style="list-style-type: none"> a) Cover page showing project title, student's information, school and session b) List of contents c) Acknowledgements and preface d) Introduction e) Rationale Purpose) -The reason for the choice of the subject and its social significance. f) Methodology Technique - Mention the methodology e.g. questionnaire, case study, ethnographic description The students may use any method which is appropriate for the topic selected. Detailed steps and procedures adopted must be given. g) Presentation of evidence - There must be a major section formally presenting the evidence gathered as a part of the project. This can be in the form of tables, extracts from interviews, reports on case studies or discussion of documentary

	<p>data (newspapers, articles, magazines, diaries, photographs). However, there should be value addition by the student and it must not be a simple reproduction of the original material.</p> <p>h) Analysis of evidence & conclusions - Each project should summarize its conclusions in a separate section. This can be brief but should be clearly and carefully stated. If possible, some suggestions can be given for further enhancement in the areal subject studied. This section can also include a statement describing the limitations of the study.</p> <p>i) Bibliography/ Appendix or other supporting material - This should include the references to relevant books and other sources used for the study. The appendix will include questionnaires, list of interviews, documents or any other material used in the study.</p>
<p>Accountancy</p>	<p><u>Project Work as per C.B.S.E. Guidelines: SPECIFIC PROJECT</u></p> <p>Objective: To develop the competence of reading accounting data from quarterly or half yearly or annual reports of corporate sector and interpreting the information on the basis of given guidelines to present the desirable information in required format in the Project File for specific project.</p> <ul style="list-style-type: none"> • Students have to collect the quarterly or half yearly or Annual Audited Consolidated Financial Statements of Public ltd . Companies which are listed on stock exchange (NSE/ BSE) from newspapers , magazines or from the websites of the companies . Financial Statements should be of (2024-25 ; 2025-26) • Financial Statements (2025-26) will include – Statement of Profit and Loss, Statement of Balance Sheet , Cash flow Statement and Segment Report of Revenue , Profit and Capital employed. • Students will prepare a Project File(A3 Size and ruled white sheets) to record their work related to the problems attempted by them in the following format <p><input type="checkbox"/> Cover Page- First page of the file should describe title of work, identity of student, Name of school and Name of the teacher concerned. The cover page should be designed properly.</p> <p><input type="checkbox"/> Acknowledgement</p> <p><input type="checkbox"/> Certificate</p> <p><input type="checkbox"/> List of contents- Index to indicate columns for title of work, page no., source, teacher's remarks and signature.</p> <p><input type="checkbox"/> Introduction of the Company - Pictures of product, brief description of company , organizational structure etc.</p> <p><input type="checkbox"/> Print outs /Cuttings of all the financial statements(2025-26) of the company to be pasted.</p> <p><input type="checkbox"/> Few suggestive Companies for specific project:</p>

	<ol style="list-style-type: none"> 1. Bata India Ltd. 2. Bajaj Auto Ltd. 3. Bombay Dyeing Ltd. 4. Godrej Industries Ltd. 5. Hindustan Unilever Ltd. 6. Infosys Ltd. 7. ITC Ltd. 	<ol style="list-style-type: none"> 8. Reliance Industries Ltd. 9. Asian Paints Ltd. 10. Maruti Suzuki Ltd. 11. BHEL LTD. 12. TCS Ltd. 13. Sun Pharma Ltd. 14. Bharti Airtel Ltd. 	<ol style="list-style-type: none"> 15. Pidilite Ltd. 16. Tata Motors Ltd. 17. Tata Steel Ltd. 18. Larsen Turbo Ltd. 19. Wipro Ltd. 20. NTPC Ltd. 21. Ultratech Cement Ltd.
<p>Political Science</p>	<ul style="list-style-type: none"> • Each child need to take separate company for the project work. • Project File should be neatly handwritten and presentable with page numbers. <p>To enable the students to know about the inventions of new concepts in world politics and constitution of India. - To develop 21st century managerial skills of co ordination, self-direction and time management. - To understand contemporary political issues in context to our past. To develop a global perspective and an international outlook. Research Activity: - Research and collect the information on recent revolution of political ideas on the Topics.</p> <p>Assignment: - Project Work Project Ideas (LIST OF PROJECTS TOPICS), STUDENTS CAN CHOOSE ANY ONE TOPIC AS THEIR PROJECT WORK</p> <ul style="list-style-type: none"> • Various media platforms used during political campaigns. • Strategic planning of Indian Policy Makers. • Human Rights acts and its ratification in India. • Political Impact on Indian Legislations. • Political Impact on India’s international standing. • Indian political stand on United Nations General Assembly 2022. • Relevance of SAARC as a forum of regional cooperation. • Division of Germany with special focus on the construction and dismantling of the Berlin wall. • CIS- Central Asian Republics. • Arab Spring • Crisis in Middle East with special focus on Operation Desert Storm, Operation • Iraqi Freedom, • Iraq today. • European Union and BREXIT. • BRICS • India’s Nuclear Policy. • U.S. dominance in World politics in the Post-Cold War era. • India’s role in Non-Aligned Movement. • Civil Society Movements - Role and participation in India. • Relevance of the United Nations in a Unipolar World. • Understanding Resource Geopolitics and Environment degradation 		

	<ul style="list-style-type: none"> • India’s external relations -Critical analysis of the foreign policy of India especially with its immediate neighbours (Pakistan, China, Srilanka, Nepal, Myanmar) • Popular movements in the post-Independence era and their outcomes. • Project on the role played by the regional aspirations in backing the secessionist and insurgency movement in India • India’s response to ASEAN as a dialogue partner <p>GUIDELINES FOR THE PROJECTS:</p> <ul style="list-style-type: none"> • It must be emphasized that the process of doing the project is as important as the final project. • Once the project/projects are chosen, there should be a process of brainstorming to make out a draft/structure for the project before embarking on research. • Internet sites could be referred, but care must be taken in selecting, using and citing these sites. • Avoid plagiarism • Marks to be awarded for content and originality and not for decorative elements and embellishments. • Projects must be the original work of the student. • Project may be supported by- Data, fact sheets, maps, articles, newspaper clips. • The project work has to be done on A- 4 sheet only. • Originality of work and hand made maps and bar graph will be liked and appreciated.
Economics	<p>The students are required to prepare a project as per the guidelines issued by the CBSE (available on www.cbse.nic.in). There is a list of suggested topics for the same on this website.</p> <p>After conducting research work on the selected topic, each student will prepare and submit his/her project report in a file. Following essentials are required to be fulfilled for its preparation and submission.</p> <ol style="list-style-type: none"> 1. The total length of the project will be of 25 to 30 pages. 2. The project should be handwritten. 3. The project should be presented in a neat folder/file. <p>The project file must contain the following details:</p> <ul style="list-style-type: none"> • Cover page • Certificate and Acknowledgement • Introduction of topic/title • Identifying the causes, consequences and/or remedies • Various stakeholders and effects on each of them • Advantages and disadvantages of situations or issues identified • Short-term and long-term implications of economic strategies suggested. • Using appropriate research methodology • Conclusion and Project Report • Bibliography
Applied Mathematics	NOTE: Do the following activities in the mathematics activity file.

	<ol style="list-style-type: none"> 1. To sketch the graphs of a^x and $\log_a x$, $a > 0$, $a \neq 1$ and to examine that they are mirror images of each other. 2. To verify that for a function f to be continuous at given point x_0, $\Delta y = f(x_0 + \Delta x) - f(x_0)$ is arbitrarily small provided, Δx is sufficiently small. 3. To understand the concepts of local maxima, local minima and point of inflection. 4. Using the following keywords – Shares , face value , Market Value , Brokerage , Types of shares , Debentures ... take an appropriate example to understand the given words and represent it by using graph . 5. In a spread sheet or excel, matrices are referred to as arrays of numbers or functions. To perform matrix operations using spread sheet- Show addition, subtraction and multiplication of matrices. <p>Prepare a project from anyone of the following topics:</p> <ol style="list-style-type: none"> i) Analysis of population migration data – positive and negative influence on urbanization. ii) Analysis of career graph of a cricketer (batting average for a batsman and bowling average for a bowler). Conclude the best year of his career. It may be extended for other players also – tennis, badminton, athlete. iii) Vehicle registration data – correlating with pollution and the number of accidents. iv) Visit a village near Jaipur and collect data of various crops over the past few years from the farmers. Also, collect data about temperature variation and rain over the period for a particular crop. Try to find the effect of temperature and rain variations on various crops. v) Weather prediction (prediction of monsoon from past data). vi) Visit Kirana shops near your home and collect the data regarding the sales of certain commodities over a month. Try to figure out the stock of a particular commodity which should be in the store in order to maximize the profit. vii) Stock price movement. viii) Risk assessments by insurance firms. ix) Predicting stock market crash. x) Predicting the outcome of an election – exit polls. xi) Predicting mortality of infants.
Psychology	<p>Psychological Analysis of a Film</p> <p>Objective: To apply psychological theories, concepts, and principles to analyze the characters and themes in a selected movie. Instructions:</p> <ol style="list-style-type: none"> 1. Choose a movie from the suggested list or select another film that offers rich material for psychological analysis. (Suggested movies: -Silver linings -Dear Zindagi -A beautiful mind -Goodwill hunting -28 days) 2. Watch the movie attentively, taking note of key scenes, character interactions, and recurring themes.

	<p>3. Conduct research on relevant psychological theories and concepts that you plan to apply to your analysis. Consider aspects such as personality, motivation, behavior, cognition, emotion, and social influence.</p> <p>4. Write a comprehensive analysis paper that includes the following components:</p> <ul style="list-style-type: none"> • Introduction: Provide a brief overview of the movie and its relevance to psychological analysis. • Character Analysis: Select two or more main characters and analyze their personalities, motivations, and behavior using psychological theories. • Theme Analysis: Identify and discuss major themes or psychological motifs present in the movie, such as identity, love, power, morality, or mental illness. Explore how these themes contribute to the overall narrative and character development. • Psychological Dynamics: Examine interpersonal relationships, conflicts, and dynamics within the movie, applying concepts of psychology. • Ethical Considerations: Reflect on any ethical issues portrayed in the movie, such as psychological manipulation, stigma, or boundary violations, and discuss their implications from an ethical standpoint. • Conclusion: Summarize your findings and insights, highlighting the psychological significance of the movie and its potential real-world applications or implications.
Computer Science	<p>Use these instructions while writing Python programs in your practical copy:</p> <ol style="list-style-type: none"> 1. Bring a practical copy with ruled (lined) pages on the right and blank pages on the left. 2. On each program page: <ul style="list-style-type: none"> • Write the problem statement with black pen on the ruled side. • Write the Python code with blue pen on the ruled side. • Write the output neatly with black pen on the blank side. 3. Only one program on one page. Do not write more than one program per page. 4. On every open spread: <ul style="list-style-type: none"> • Left side (blank page): Draw or write the sample output. • Right side (lined page): Write the program heading, problem, and code. 5. Keep your handwriting neat and clean; leave proper margins and spacing between programs. 6. Use proper comments in every program to explain what the code is doing (e.g. # input marks, # calculate total, # print result). <p>Q1. Write a program to find the side of a square whose perimeter is read from user.</p> <p>Q2. An athlete is taking rounds of a triangular park with sides 30 m, 25 m and 35 m. The athlete has run 560 m till now. Write a program to print how many rounds of park the athlete has completed?</p> <p>Q3. Write a program that prints a table on two columns: on left the integer temperatures between 0 and 100 (Fahrenheit) and in the right column the corresponding Celsius values.</p> <p>Q4. Write a program that inputs a word as a string and prints back the word without the vowels, like this:</p> <p style="padding-left: 40px;">If input is “nectarine” the output should be ‘nctrn’.</p> <p style="padding-left: 40px;">If input is “blueberry” then output should be ‘blbrry’.</p> <p>Q5. Write a program that accepts a list and removes the value at index 0 from the list. The program must actually modify the list passed in, and not just create a second list with the first item removed. You may assume the list is given and list have atleast one element.</p> <p>For example: for input word is a= [1, 2, 3, 4], the output should be [2, 3,4]</p>

	<p>Q6. Write a program that inputs two tuples and creates a third tuple that contains all elements of the first followed by all elements of the second.</p> <p>Q7. Arrays in Python are implemented through lists. Write a program that sorts an array of integers in ascending order.</p> <p>Q8. Write code to create a Python dictionary. Add two entries to the dictionary: Associate the key 'name' with the value 'Amar', and associate the key 'phone' with '85000-00003'. Add two more names and their phones in the dictionary after getting the input from user. Then ask the user a name and print its corresponding phone.</p> <p>Q9. Write a Python program to input the names and marks of 5 students to store them in a dictionary and print all students with their marks in ascending order of marks (lowest to highest).</p> <p>Q10. Write a Python program that takes a sentence as input and demonstrates different string operations on it (like length, changing case, counting, finding, replacing, splitting, checking properties, and slicing). Display the result of each operation clearly on separate lines.</p>
<p>Entrepreneurship</p>	<p style="text-align: center;"><u>PROJECT 2 - 'BUSINESS PLAN'</u> <u>(Product will be same as taken in Project-1)</u></p> <p>The Separate project file will be developed for project -2 in the following sequence-</p> <ul style="list-style-type: none"> • Cover page • Certificate • Acknowledgement • Index • Executive Summary about your own product with photo designed by you • Objectives or Features of your own product • Why you have chosen this product? • Type/ Forms of your product (if any) • Chemical Composition of your product • Research Methodology • Marketing Plan (Meaning) • Marketing Mix (4P's) <ul style="list-style-type: none"> ✓ Product (Brand name, Logo, Colour, Tagline, USP designed by you, Packaging, Labelling, Licensing, warehousing, Transportation, Target Market, SWOT Analysis of your own product with photos. ✓ Price (Meaning, Price of your product, Methods of pricing selected for your product) with photo ✓ Place (Meaning and Channel of distribution selected for your product) with photo ✓ Promotion (Meaning and technique of sales promotion selected for your product) with photo • Production Plan • Financial Plan (with start- up cost, Fixed cost, Variable cost, Statement of Profit and loss) • Break-even point • Conclusion • Bibliography • Performa page print out from NCERT Book

Informatics Practices	<p>Write following programs in Python Practical File. Make an interleave Practical notebook , write programs on rule page and outputs on left page.</p> <ol style="list-style-type: none"> 1. Write python code to create a Series object using a list . Assume that pandas is imported as alias name pd. 2. Write a program to create a Series object using individual vowel characters. Assume that Pandas is imported as alias name pd. 3. Write a program to create a series object using an ndarray that has 5 elements in the range 24 to 64. 4. Write a program to create a series object using a dictionary that stores the number of students in each section of class 12 in your school. 5. Write a program to create a Series object that stores the initial budget allocated (50000 each) for the four quarters of the year : Qtr1, Qtr2, Qtr3, Qtr4. 6. A python list namely section stores the section names of class 12 in your school. Another list contri stores the contribution made by these students to a charity fund endorsed by the school. Write code to create a series object that stores the contribution amount as the values and the sections name as the indexes. 7. Create a series S1 that stores the contribution of each section. <ol style="list-style-type: none"> i Write code to modify the amount of section ‘A’ as 7600. ii Write code to modify for sections ‘C’ and ‘D’ as 7000. iii Display the contribution made by section A and C. iv Display the contribution wherever more than 5500. 8. Create and display a DataFrame from a 2D dictionary , Sales, which stores the quarter wise sales as inner dictionary for two years. 9. Write a program to create a dataframe from a list containing dictionaries of the sales performance of four zonal offices. Zone names should be the row labels. 10. Write a program to create a dataframe from a 2D list. Specify own index labels. 11. Write a program to create a dataframe object from a 2D ndarray as shown below. 12. Consider two series objects staff and salaries that store the number of people in various office branches and salaries distributed in these branches, respectively. Write a program to create another series object that stores average salary per branch and then create a Dataframe object from these series objects.
Physical Education	<p>Practical 1 Make a project file on sports /game from the list as given Running track, Cricket, Football, Hockey Grounds, Kho-Kho, Kabaddi, Handball, Volleyball, Basketball, Badminton.</p> <ol style="list-style-type: none"> 1 History of the game 2 Skills 3 Terminology 4 Important Tournaments 5. Famous Sports Personalities 6. Injuries And Treatment <p>Practical 2</p> <ul style="list-style-type: none"> • Yoga • History of yoga • Yoga as an Indian heritage

<p>Commercial Arts</p>	<p>1. Make illustrations based on subjects given in your syllabus.</p> <ul style="list-style-type: none"> • No. of Sheets: 07 • Medium: Poster colours/ pencil colours/ charcoal/ Pencil shading/ inks • Size of the Sheet- 11” x 14” • Type of Sheet- Ivory / Cartridge /Any other as per requirement <p>Subjects-</p> <table border="0"> <tr> <td>1. Family and Friends in Daily life</td> <td>2. Professionals/ Profession</td> </tr> <tr> <td>3. Games and Sports</td> <td>4. Nature</td> </tr> <tr> <td>5. National events and celebrations</td> <td>6. Religious events and celebrations</td> </tr> <tr> <td colspan="2">7. Culture- Dance, Drama Music and Art</td> </tr> </table> <p>2. Make Posters based on the subjects given in your syllabus.</p> <ul style="list-style-type: none"> • No. of Sheets: 07 • Medium: As per discussion (poster colors/ water colours/ pencil colours/ inks) • Size of the Sheet- ½ imperial (22x14 inches) • Type of Sheet- Italian Mount Board (20x15 inches) / ivory or cartridge (22x14 inches) as per the requirement <p>Subjects-</p> <table border="0"> <tr> <td>1. Excursion/Tourism</td> <td>2. Cultural Activities</td> </tr> <tr> <td>3. Community and nature Development</td> <td>4. Ideas –Social, National, International</td> </tr> <tr> <td colspan="2">5. Commercial Products</td> </tr> </table> <p>3. Choose any one folk art and draw and paint it using Acrylic colours on any one of the objects- Cloth Bag, Wooden utensils, Mobile Covers, Face Mask, Lamp Shade, Terracotta Object, Tea Coasters etc.(Any other object of your choice) Kindly make sure that the reference of folk art you select should be an authentic one. Folk Arts of India for reference- Warli/ Kalamkari/ Madhubani/ Mandana/ Alpona/ Gond/ Cheriya/ Pattachitra/ Any other</p> <p>Note: Students will first make layouts and after taking the approval will make the final artwork. Students are required to follow the guidelines as briefed during the class.</p> <p>4. Prepare a poster on the theme- Australia –India Relations- A Partnership for the Future</p> <ul style="list-style-type: none"> • Size A2 or A3 • Medium- Hand Drawn (pencil, watercolours, acrylic, pastels) 	1. Family and Friends in Daily life	2. Professionals/ Profession	3. Games and Sports	4. Nature	5. National events and celebrations	6. Religious events and celebrations	7. Culture- Dance, Drama Music and Art		1. Excursion/Tourism	2. Cultural Activities	3. Community and nature Development	4. Ideas –Social, National, International	5. Commercial Products	
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