Month of June brought long, hot days and now we have our summer holidays school is closed and no set rules waking up late and going to pool. Little homework, easy to be done playing with friends and lots of fun, beautiful time comes once in a year, summer holidays are best days ever!!

Dear students,

Every year we look forward to the exciting summer vacation to spend time with family and friends. This summer, apart from having a lot of fun, we expect you to try to develop new skills, enhance your knowledge and read a lot of books. To resonate with the Experiential Learning Approach and to make learning more fun and fruitful the Art- Integrated Projects are specially designed to ignite a passion for discovery and experimentation among the learners, while utmost care has been taken to ensure a safe and healthy learning experience for our most treasured learners.

GUIDELINES FOR STUDENTS

1. Ensure timely submission of holiday homework after the reopening of the school.
2. Try to incorporate creativity and innovation.
3. Revise all the topics that have been taught by your subject teachers in the new session.
4. Take up an activity at home which you enjoy for example sketching, dancing, gardening etc.

GENERAL GUIDELINES FOR GRADE 11TH STUDENTS

1. The total length of the project will be of 30 to 40 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder on A4 size sheet.
4. The project report should be developed in the following sequence-
5. Cover page should include the title of the Project, student information, school and year.
6. List of contents.
7. Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
8. Introduction.
9. Topic with suitable heading.
10. Observations and findings of the visit.
11. Conclusions (summarized suggestions or findings, future scope of study).
12. Appendix
13. Teacher's observation.

GENERAL GUIDELINES FOR GRADE 12TH STUDENTS

NOTE-KINDLY MAKE THE PROJECT IN THE PROJECT FILE PROVIDED BY SCHOOL.AS PER THE CBSE GUIDELINES.

- Title page.
- Certificate from guide.
- Acknowledgement.
- Abstract (1–2 page)
- Contents.
- Appendix (if required)

ACCOUNTANCY

A

Project Work CLASS-XI

- Collect original samples of all source documents and paste them in file.
- Write one hypothetical transaction for each source document (source voucher and accounting voucher) and pass journal entry in proper format.
- Prepare all source documents formats for each transaction.

Guidelines:
1. The total length of the project will be of 30 to 40 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder on A4 size sheet.
4. The project report should be developed in the following sequence-
5. Cover page should include the title of the Project, student information, school and year.
6. List of contents.
7. Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
8. Introduction.
9. Topic with suitable heading.
10. Observations and findings of the visit.
11. Conclusions (summarized suggestions or findings, future scope of study).
12. Appendix
13. Teacher's observation.

CLASS-XII

GUIDELINES FOR PROJECT WORK IN ACCOUNTING

The Board has introduced Project Work in Accounting for Class-XII in the Optional Part B : 'Financial Statement Analysis'. It is expected that the Project Work will help the students in developing the skills to comprehend, analyse and interpret accounting data of the business firms and make it meaningful for taking business decisions.

Objectives

☆ To enable a student to complete the accounting process in real life business situations and apply the tools of analysis as per the syllabus for a comprehensive project.

☆ To develop the competence of reading accounting data from quarterly or half yearly or annual reports of business firms and interpreting the information on the basis of given guidelines to present the desirable information in required format in the Project File for Specific Projects.

Guidelines for Teachers

During the academic session the students will work on at least three types of projects out of which one will be of Comprehensive nature. The comprehensive project will involve the students from the initial stage of accounting to the preparation and analysis of financial statements. The data provided or the Project Statement will be as close to the real life situations as possible. The project statement should cover all important aspects like investments, financing, operating, adjustments to final accounts, etc. in a condensed form. The situations given in these problems will require a student to derive meaningful conclusion for taking decisions for the purposes of investment, expansion, financing, etc.

Two projects will be of specific nature using atleast one tool of analysis in each. The data for these will be drawn mainly from quarterly or half yearly or annual reports of corporate sector. Students will analyze the information given in the financial statements as follows :

a) Performance of Segments keeping in mind their three parameters Revenue, Net Profit and Capital Employed of companies on quarterly or half yearly or annual basis. This is widely

published and reported by the companies. It can be picked up either from the newspapers or from the websites of the companies.

b) Comparison of Revenue, Net Profit and Earning Per Share (EPS) on quarterly or half yearly or annual basis with the help of comparative or common size statements.

The Projects given in these guidelines are on sample areas of business activities like Segment Reporting, etc. The teachers and students are free to explore more such areas of business activities for specific projects.

There are four tools of analysis given in the syllabus for the analysis of Financial Statements, namely (i) Comparative Statement, (ii) Common Size Statements, (iii) Ratios and (iv) Cash Flow Statement. Any one or more of these tools are to be used to derive conclusions. No project is to be prepared on the tools, but these tools are to be used to achieve the object of the project. For instance, there will not be any project on the 'Ratios' as such, but ratios will be used in the development of the project to reach a conclusion.

Scope

For the purpose of Project Work, the following ratios will be included :

Liquidity Ratios : Current Ratio, Liquidity Ratio.

Solvency Ratios : Debt to Equity; Total Assets to Debt, Proprietary Ratio.

Activity Ratios : Inventory Turnover, Debtors Turnover, Payables Turnover, Working Capital Turnover, Fixed Assets Turnover, Current Assets Turnover.

Profitability Ratio : Gross Profit Ratio, Operating Ratio, Net Profit Ratio, Return on Investment, Earning Per Share – Price Earnings Ratio.

A few projects have been given in detail at the end of the guidelines for practice. The student is expected to analyze the facts, and present the information in a meaningful manner for interpretation. Teachers are expected to discuss these problems thoroughly with the students and encourage them to come out with solutions. They are also expected to collect the quarterly or half yearly or annual Segment reports and Revenue and Net Profit reports of companies from newspapers or from the websites of the companies and formulate their own problems for Project Work.

UNIT-1: PROJECT FILE

Students will prepare a Project File to record their work related to the problems attempted by them in the following format :

1. First page of the file should describe title of work, identity of student, school, and the teacher concerned.

2. Index to indicate columns for title of work, page no., date, teacher's remarks and signature.

3. The format for Project Work will be :

    ★ Statement of the problem/Name of the Project

    ★ Objectives

    ★ Period of Study

    ★ Source Material

    ★ Tools of Analysis used

    ★ Processing and Tabulation of data

    ★ Diagrammatic/graphic presentation- pie-diagrammes, bar diagrammes and graphs.

    ★ Derivations, Interpretation and Conclusion.

    ★ Assumptions (if any)

Project File should be neatly handwritten and presentable with page numbers. Each step of the solution needs to be highlighted. Conclusions drawn should be placed in boxes at the end.

BUSINESS STUDIES
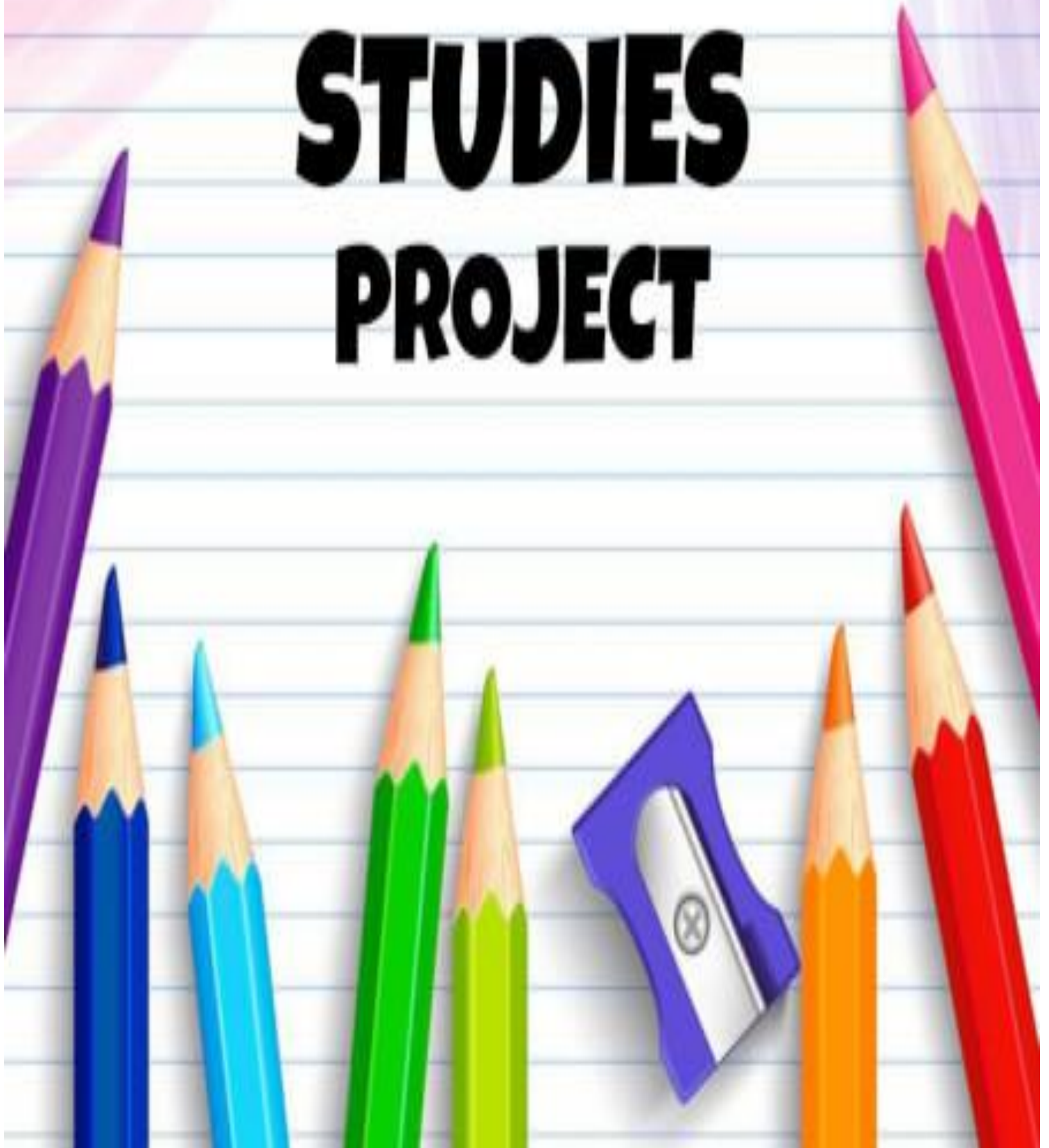
PROJECT

FIELD VISIT

The objective of introducing this project among the students is to give a first hand experience to them regarding the different types of business units operating in their surroundings, to observe their features and activities and relate them to the theoretical knowledge given in their text books. The students should select a place of field visit from the following: – (Add more as per local area availability.)

Project 1: Visit to a Handicraft Unit

The purpose of visiting a Handicraft unit is to understand nature and scope of its business, stake holders involved and other aspects as outlined below

a) The raw material and the processes used in the business: People /parties/firms from which they obtain their raw material.
b) The market, the buyers, the middlemen, and the areas covered.
c) The countries to which exports are made. d) Mode of payment to workers, suppliers etc.
d) Working conditions.
e) Modernization of the process over a period of time.
f) Facilities, security and training for the staff and workers.
g) Subsidies available/ availed.

Project II: Visit to a whole sale market: vegetables/fruits/flowers/grains/garments etc.
The students are required to observe the following:
a) Sources of merchandise.
b) Local market practices.
c) Any linked up businesses like transporters, packagers, money lenders, agents, etc.
d) Nature of the goods dealt in.
e) Types of buyers and sellers.
f) Mode of the goods dispersed, minimum quantity sold, types of packaging employed.
g) Factors determining the price fluctuations.
h) Seasonal factors (if any) affecting the business.
i) Weekly/ monthly non-working days.
j) Strikes, if any- causes thereof.
k) Mode of payments.
l) Wastage and disposal of dead stock.
m) Nature of price fluctuations, reason thereof.
n) Warehousing facilities available\availed.

Project III: Visit to an Industry.

The students are required to observe the following:
a) Nature of the business organisation.
b) Determinants for location of business unit.
c) Form of business enterprise: Sole Proprietorship, Partnership, Undivided

Hindu Family, Joint Stock Company (a Multinational Company).

d) Different stages of production/process
e) Auxiliaries involved in the process.
f) Workers employed, method of wage payment, training programmes and facilities available.
g) Social responsibilities discharged towards workers, investors, society, environment and government.
h) Levels of management.
i) Code of conduct for employers and employees.
j) Capital structure employed- borrowed v/s owned.
k) Quality control, recycling of defective goods.
l) Subsidies available/availed. m) Safety Measures employed.
n) Working conditions for labour in observation of Labour Laws.
o) Storage of raw material and finished goods.
p) Transport management for employees, raw material and finished goods.
q) Functioning of various departments and coordination among them (Production, Human Resource, Finance and Marketing)
r) Waste Management.
s) Any other observation.

Project IV: Visit to a Departmental store

The students are required to observe the following:

A. Different departments and their lay out.
B. Nature of products offered for sale.
C. Display of fresh arrivals.
D. Promotional campaigns.
E. Spaces and advertisements.
F. Assistance by Sales Personnel.
G. Billing counter at store – Cash, Credit Card/ Debit Card, swipe facility. Added attractions and facilities at the counter.

Guidelines:

1. The project should be done on A4 SIZE sheet.
2. Ackowledgement and certificate is already sent in class groups. Hard copy of the same should be attached in the project work.
3. Project file should be prepare individually in legible handwriting.
4. Students should refrain from outsourcing their projects.
5. Students should prepare the project on the topics allotted. It is as follows:

ROLL NO.	TOPIC
1-10	Visit to a Handicraft Unit
11-20	Visit to an Industry
21-30	Visit to a whole sale market: vegetables/fruits/flowers/grains/garments etc
31-40	Visit to a Departmental store
40-54	Visit to a Mall

6. Select a suitable day free from rush/crowd with lean business hours.
7. Students may carry their cameras (at their own risk) with prior permission for collecting evidence of their observations.
8. Maximum pages-40 , Minimum Pages-30

Worksheet

Question 1. For which of the following types of business do you think a sole proprietorship firm of organization would be more suitable, and why?

(i)   Grocery store
(ii)   Medical store
(iii)   Legal consultancy
(iv)   Craft centre
(v)   Internet cafe
(vi)   Chartered accountancy firm

Question 2. For which of the following types of business do you think a partnership firm of organization would be more suitable, and why?

(i)   Grocery store
(ii)   Medical store
(iii)   Legal consultancy
(iv)   centre
(v)   Internet cafe
(vi)   Chartered accountancy firm Question

3. Explain the following terms in brief:
(i) Perpetual succession
 (ii) Common seal
(iii) Karta
(iv) Artificial person

Question 5. If registration is optional, why do partnership firms willingly go through this legal formality and get themselves registered? Explain.

CLASS-XII-INVESTIGATORY PROJECT TOPICS B.STD

Marketing Management

, The students can consider the following products and conduct research to gather information about the various aspects concerning the marketing of the product. **Some of the most prominent and sought-after products are mentioned in the table below:**

Adhesives	Mobile Phones	Inverters	Wallet
Butter	Toys	Microwave	Newspaper
Coffee	Hair Oil	Chocolate	Sauces
Cutlery	Lipstick	**Cosmetics**	Washing Machine
Bread	Jewellery	Moisturizer	Noodles
Bathing Soap	Handbags	Cheese	Music System
Hair Dye	Jeans	Eraser	Pencil

The students can choose either of the aforementioned or any of the products permissible by the teacher for their Business Studies Project. **Taking any one of the products into consideration, the students will have to gather information on the following parameters.**

- Profit margin in percentage to the manufacturer, wholesaler and retailer
- Packaging of the product
- Selling price to the consumer
- Promotion or marketing of the product
- Identify the USP
- Type/category of product
- Labelling
- Tagline
- Grading and standardization
- Channels of distribution

Elements of Business Environment

In this topic of the Business Studies class 12 project, given below are the important elements of the business environment:

- Changes witnessed in packaging and economic impact over the last few years in relation to products like fruits and vegetables, plastic/wooden furniture, milk, reuse of packages, packages as a means of advertisement, etc.
- Reasons behind the changes in "*Coca Cola and Fanta in the 70s decade to Thums up and Campa Cola in the 80s decade to Pepsi and Cola in the 90s.*"
- Changes in the patterns of export and import of different products.
- The law, effects and implementation of the anti-plastic campaign.
- Social factors affecting acceptance and rejection of an identified product (atta maker, dishwasher)
- Effect of changes in the technological environment on employee behaviour.

Principles of Management Project in Business Studies

Under this subject of the Business Studies class 12 project, the students are required to visit any departmental store, fast food outlet or any industrial unit and perceive if applications like **Fayol's General Principles of Management** or **F.W. Taylor's Scientific Management Techniques** are applied or not. **For clarification, have a look at the principles and techniques advocated by both the administrative gurus:**

Fayol's General Principles of Management	Division of Work; Unity of Command; Unity of Direction; Scalar Chain; Espirit de corps; Fair Remuneration; Order; Equity; Discipline; Subordination of Individual Interest to General interest; Centralization and Decentralization; Stability of Tenure
F.W. Taylor's Scientific Management Techniques	Functional Foremanship; Standardization and Simplification of Work; Method Study; Motion Study; Time Study; Fatigue Study; Differential Piece-rate Plan

Stock Exchange

The students who opt for the third option in the business studies class 12 project will have to learn various aspects of the stock market, monitor the stock market trends and how calculate profit or loss in relation to stock. Through this topic, the students will be able to learn about the capital market and the sources of business finance along with a deep understanding of the concepts used in the stock exchange.

- Create a brief report on the history of stock exchanges in India.
- Prepare a hypothetical portfolio with a sum of INR 50,000 in any 5 top companies over a period of 20 working days.
- Identify the reasons for fluctuations in prices, for example, change of seasons, strikes and accidents, political environment, the spread of an epidemic, international events, etc.
- Find the value of the investments and update the portfolio accordingly through various graphical representations.

Important Guidelines

Here are the official CBSE guidelines for the Class 12 Business Studies project:

- The entire project must be completed between 25 to 30 pages
- It is compulsory for class 12th students that the project must be handwritten
- The project must be clubbed inside a neat and tidy transparent folder
- While crafting your project, you must follow this specified format:
    - Cover Page: Student information, School name and year
    - Index (List of Contents)
    - Acknowledgement and Preface
    - Introduction
    - Topic with a Unique Title/Heading
    - List of activities and planning done to gather information about the project (If any)
    - Observations from the places of visit
    - Conclusions
    - Photographs (if any)
    - Appendix
    - Teacher's remarks
    - Signature of the teachers
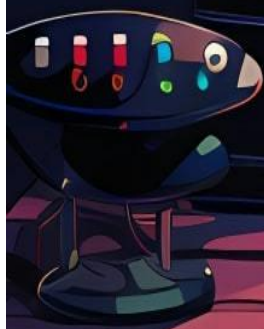
ECONOMICS(30)CLASS-XI

Project work – The student who has been given the individual project topic, will collect material information on that topic.

Students are required to keep following essentials in mind while preparing the project.
1. Explanation of the concept
2. Meaning and definition
3. Application of the concept
4. Diagrammatic explanation
5. Numerical explanation related to the concepts etc., if any
6. Students' own views/perception/opinion and learning from topic.

Guidelines:
1. The project should be done on A4 SIZE sheet.
2. Ackowledgement and certificate is already sent in class groups. Hard copy of the same should be attached in the project work.
3. Project file should be prepare individually in legible handwriting.
4. Students should refrain from outsourcing their projects.
5. Students should prepare the project on the topics allotted. It is as follows:

ROLL NO.	TOPIC
1-08	● Effect on PPC due to various government policies
09-16	● Opportunity Cost as an Economic Tool
17-24	● Goods and Services Tax Act
25-32	● Human Development Index
33-40	● Self-help group
41-48	● Solar Energy,a Cost-Effective Comparison with Conventional Energy Sources
49-60	• Bumper Production-Boon or Bane For the farmer

CLASS-XII

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

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

The **expectations** of the project work are that:
- learners will complete only **ONE** project in each academic session
- project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written
- it will be an independent, self-directed piece of study

Scope of the project:

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

Choose a title/topic

↓

Collection of the research material/data

↓

Organization of material/data

↓

Present material/data

↓

Analysing the material/data for conclusion

↓

Draw the relevant conclusion

↓

Presentation of the Project Work
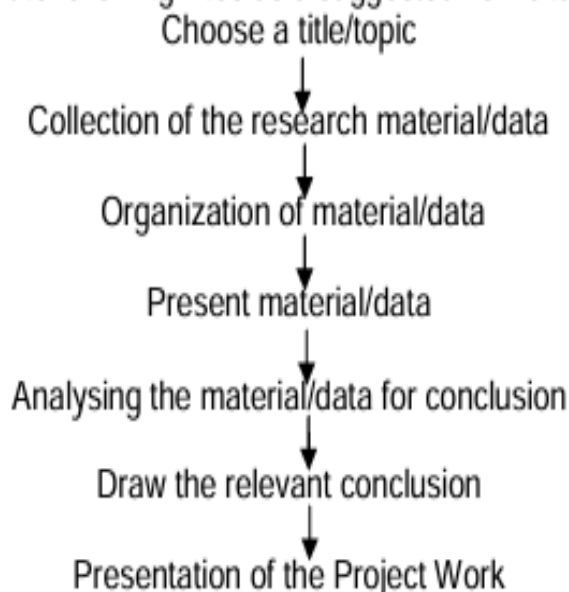
Expected Checklist:

- Introduction of topic/title
- Identifying the causes, consequences and/or remedies
- Various stakeholders and effect on each of them
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of economic strategies suggested in the course of research
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file
- Presentation and writing that is succinct and coherent in project file
- *Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.*

Mode of presentation/submission of the Project:

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

Marking Scheme :

Marks are suggested to be given as –

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

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary policy committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarwa Siksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – a solution to water crises
• Vertical Farming – an alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• Any other newspaper article and its evaluation on basis of economic principles	• **Any other topic**

A.PROJECT WORK

Suggest topics

➢ Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)

➢ CWSN (Children With Special Needs – Divyang): Bocce/Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goal ball, Floor ball, Wheel Chair Races and Throws, or any other Sport/Game of choice

➢ Children with Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

*Record Project File shall include:

➢ 1: Fitness tests administration. (SAI Khelo India Test)

➢ 2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.

➢ 3: Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

Including games basketball,handball,hockey,cricket, kabaddi, kho-kho,volleyball

Guidelines:

1. The project should be done on A4 SIZE sheet.
2. Hard copy of the Project file should be prepare individually in legible handwriting.
3. Project should not be less than 30 pages
4. Students should prepare the project on the topics allotted.

INVESTIGATORY PROJECT WORK CLASS 12 PHYSICAL EDUCATION

Practical   **Max. Marks 30**

01. Physical Fitness Test   - 6 Marks
02. Proficiency in Games and Sports (Skill of any one Game of choice from the given list*)- 7 Marks
03. Yogic Practices   - 7 Marks
04. Record File **   - 5 Marks
05. Viva Voce (Health/ Games & Sports/ Yoga)   - 5 Marks

*   Basketball, Football, Kabaddi, Kho-Kho, Volleyball, Handball, Hockey, Cricket, Bocce & Unified Basketball [CWSN (Children With Special Needs - Divyang)]

**Record File shall include:

Practical-1: Fitness tests administration for all items.

Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.

Practical-3: Any one game of your choice out of the list above. Labelled diagram of field & equipment (Rules, Terminologies & Skill)

History
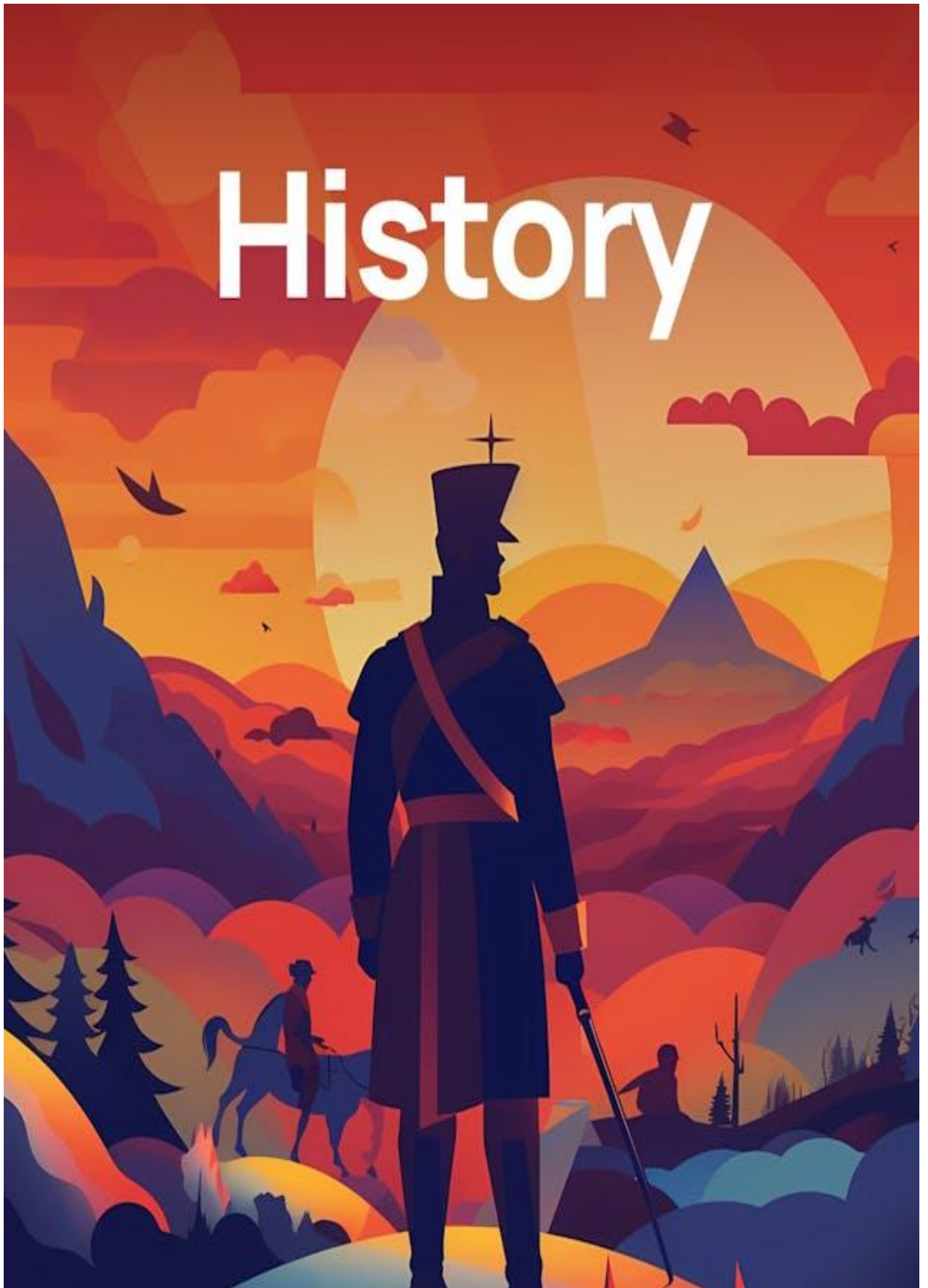
CLASS-XI

The students should make a project file on Evolution of Humans or Roman Empire (any one aspect).

The project should consist of the following:

1. Title page

2. Acknowledgment

3. Table of contents

4. Introduction

5. The body of the project should have description of the selected topic, pictures,   data and other relevant information

6. Conclusion should have students' observations on the topic

7. Bibliography and references

History Project Work
Class XII
Few Suggestive topics for Project Work (Examples)

1. The mysteries behind the mound of dead – Mohenjo-Daro
2. An In-depth study to understand Spiritual Archaeology in the Sub-Continent
3. Buddha's Path to Enlightenment
4. Insight and Reflection of Bernier's notions of The Mughal Empire
5. An exploratory study to know the women who created history
6. "Mahatma Gandhi" – A legendary soul
7. To reconstruct the History of Vijaynagar through the Archaeology of Hampi
8. The emerald city of Colonial Era – BOMBAY
9. Vision of unity behind the first war of Independence
10. Divine Apostle of Guru Nanak Dev
11. Help, Humanity and Sacrifices during Partition
12. Glimpses inside Mughals Imperials Household
13. The process behind the framing of the Indian Constitution
14. The 'Brahm Nirupam' of Kabir – A journey to Ultimate Reality

political science

an introductory text

POLITICAL SCIENCE -XI

WRITTEN ASSIGNMENT :-

1. Explain in detail the following fundamental rights (with their Articles) –

RIGHT TO EQUALITY - - - - -

RIGHT TO LIBERTY AND PERSONAL FREEDOMS

 RIGHT TO FREEDOM OF RELIGION

 RIGHT AGAINST EXPLOITATION

CULTURAL AND EDUCATIONAL RIGHTS OF MINORITY GROUPS

 RIGHT TO CONSTITUTIONAL REMEDY

2. Explain the Directive principles of state policy ?write about their relationship with fundamental rights ?

 3. Which of the fundamental right is in your opinion the most important right ?summarise its provisions and give arguments to show why it is most important.

 4. Write a short note on fundamental duties. ACTIVITY : - Find out about the articles, parts and schedules of Indian constitution

1. At the time of independence

2. In today's scenario

INVESTIGATORY PROJECT WORK CLASS-12 POLITICAL SCIENCE

Details of Project Work
1. The Project work will be implemented in class XII   of 20 marks, 10 marks are to be allotted to viva voce and 10 marks for project work
2. For class XII, only external assessment is to be done.
3. The project can be individual/pair/group of 4-5 each. The Project can be made on any of the topics given in the syllabus of a particular class.
5. The suggestive list of activities for project work is as follows:- -   -   Role Play, Skit, Presentation, Model, Field Survey, Mock Drills/Mock Event etc.
 6. The topics for Project Work already allotted by the teacher in classroom.

Sociology-XI

Sociology Project

Prepare a rough draught on any one of the following topics the rough draft should have complete and detailed information along with the critical analysis of the topics.

(1) Sociology and Society

(2) Relationships between Sociology and other social science (3) Role of Family in Society

(4) Marriage

(5)Social Groups

(6) Social Stratification

(7) Kinship

(8) Socialization

(9) Dimension of Culture

10.Rural and Urban Societies.

Particulars	Marks
A. Project (undertaken during the academic year at the school level) i) Statement of the purpose - 2 mark ii) Methodology/Technique - 2 marks iii) Conclusion - 3 marks	07
D. Viva based on the project work	05
E. Research design i) Overall - 1 mark ii) Research Question - 1 mark iii) Choice of technique - 2 marks iv) Detailed procedure for implementation of technique - 2 marks v) Limitations of the above technique - 2 marks	08
Total	20

2. Expected Checklist for the Project Work:
- Introduction of topic/title
- Identifying the causes, events, consequences and/or remedies
- Various stakeholders and the 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 the project file
- Citation of the materials in the file in the footnotes, resources section, bibliography, etc.

. Here are some general categories and specific topics that you could consider for your Sociology project:

1. **Social Institutions**:
   - Impact of globalization on traditional social institutions
   - Changing dynamics of the family structure in urban societies
   - Role of religion in shaping social institutions
2. **Social Stratification**:
   - Inequality in education and its impact on social mobility
   - Gender-based income disparities in the workforce
   - Caste system and its influence on social stratification in India
3. **Social Movements**:
   - Analysis of a recent social movement and its impact on society
   - Role of social media in mobilizing and sustaining social movements
   - Comparison of historical and contemporary social movements
4. **Culture and Society**:
   - Impact of popular culture on society
   - Cultural appropriation and its implications
   - Subcultures and their significance in society
5. **Social Change**:
   - Technological advancements and their impact on social change
   - Environmental movements and their role in promoting sustainable living
   - Political movements and their influence on social change
6. **Global Issues**:
   - Refugee crisis and its impact on host societies
   - Globalization and its effects on local cultures and economies
   - Climate change and its social implications

7. **Health and Society**:
   - Social determinants of health and their impact on different populations
   - Mental health stigma and its effects on individuals and society
   - Healthcare disparities and access to healthcare services
8. **Crime and Deviance**:
   - Juvenile delinquency and its causes
   - White-collar crime and its consequences
   - Rehabilitation programs for offenders and their effectiveness

Remember to narrow down your topic based on your interests, available resources, and the scope of the project. It's also important to conduct thorough research and analysis to create a well-rounded and informative project.

हिंदी

1. छुट्टी का कार्य हस्तलिखित होना चाहिए।

2.चित्रों, दृष्टान्तों आदि का प्रयोग आवश्यक है।

आपके हिंदी विषय अध्यापिका के द्वारा आप को सौंपे गए विषय पर एक परियोजना(प्रोजेक्ट) बनाएं।

अपना परियोजना (प्रोजेक्ट) कार्य तैयार करते समय निम्नलिखित पहलुओं को ध्यान में रखा जाना चाहिए:-

1. परियोजना(प्रोजेक्ट)15 से 25 A4 आकार के पृष्ठों से अधिक का नहीं होना चाहिए और इसमें शामिल होना चाहिए

अगले:-

●कवर पृष्ठ

●प्रमाण पत्र पृष्ठ

●पावती

●अनुक्रमणिका / सामग्री

●परिचय

●उप-विषय अनुक्रमणिका के अनुसार

●ग्रंथ सूची

परियोजना(प्रोजेक्ट)को एक फोल्डर में रखा जाना चाहिए और गर्मी के अवकाश के बाद कक्षा में लाया जाना चाहिए।

सभी छात्रों को व्यक्तिगत रूप से इस परियोजना को प्रस्तुत करने के लिए तैयार करना चाहिए।

2.हिंदी विषय के अध्यायों को भी अच्छी तरह से पढ़ें और इनमें से कम से कम 10 प्रश्न तैयार करें

(1) कवि/ लेखक के जीवन पर प्रकाश डालते हुए एक प्रोजेक्ट फाइल तैयार कीजिए।

(जीवन परिचय, कृतियाँ, सम्मान एवं पुरस्कार) उनकी किसी भी एक कृति की समीक्षा करें।

अपनी रचनात्मकता का प्रयोग करते हुए भिन्न -2 चित्रों का प्रयोग करें।

3.अपने क्षेत्र का एक समाचार पत्र तैयार करिए जिसमें विभिन्न समाचारों के साथ साथ आपके क्षेत्र में शीघ्र ही आयोजित होने वाले कवि सम्मेलन , कवि गोष्ठी की सूचना भी प्रकाशित हो। (रंगीन चित्रों का प्रयोग करें)

CLASS-XII

 निम्नलिखित में से किसी एक के जीवन पर आधारित परियोजना तैयार कीजिए
सूर्यकांत त्रिपाठी "निराला"
महादेवी वर्मा
हरिवंश राय बच्चन
धर्मवीर भारती
आचार्य हजारी प्रसाद द्विवेदी

तुलसीदास

INFORMATION PRACTICES

HOLIDAY HOMEWORK- SUMMER VACATION- CLASS XI- INFORMATICS PRACTICES

I. Create a PowerPoint presentation on **any two** topics from the given list (minimum 6 slides, 1st slide containing topic name and name, class and section of the student, rest 5 slides of content):

1) Application of computers
2) Input and output devices
3) Types of Software
4) Computer Memory/ Memory Devices
5) Operating Systems
6) Evolution of computing devices
7) Generation of Computers

II. Being a Computer Science student, it is important for you to know about different inventors/ developers in the world of technology. Research on **any two** of the following mentioning their achievements and contributions in the field of technology. Create a biography through PowerPoint presentation (minimum 6 slides, 1st slide containing topic name and name, class and section of the student, rest 5 slides of content):

a. Charles Babbage
b. Steve Jobs
c. Bill Gates
d. Steve Wozniak
e. Bjarne Stroustrup

I. Complete the documentation work of the project.

II. Answer the following questions:

1. Create a horizontal bar graph of following data. Add suitable labels.

City	Population
Delhi	23456123
Mumbai	20083104
Bangalore	18456123
Hyderabad	13411093

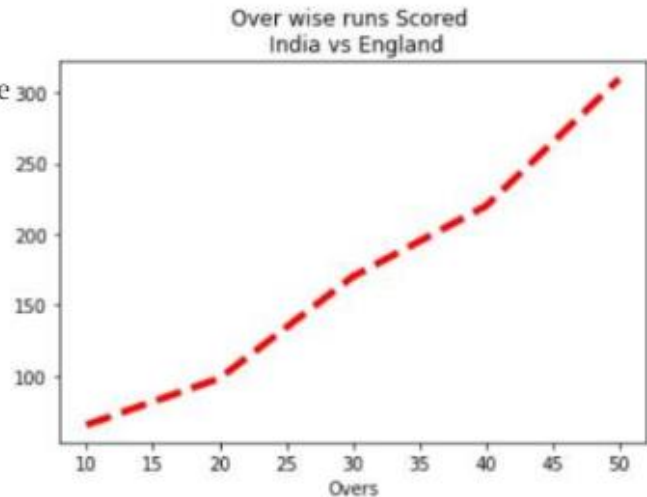2. Write one python program to find the following from the given dataframe DF

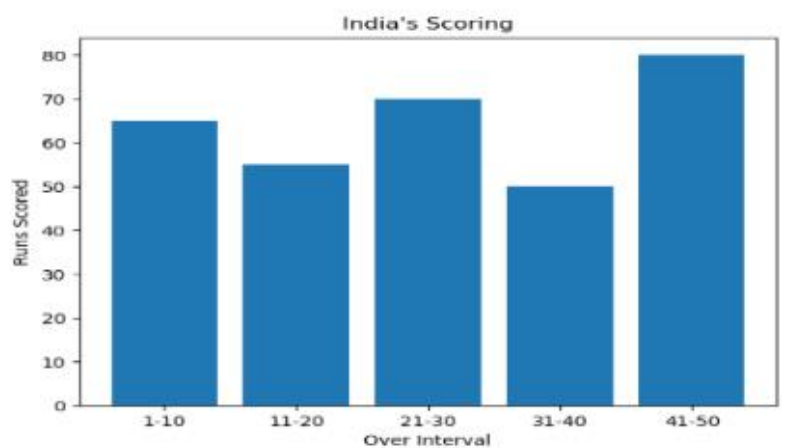| Rollno	Name	Age	Marks
1	Arun	18	68
2	Mohit	14	47
3	Karan	13	78
4	Lalit	16	87
5	Ravi	14	60

a) Maximum marks   b) sum of all the marks   c) Mean of age of the students

3. Write a python code to create the following line graph (color of line graph is red):

4. Write a python code to create the give bar graph:

5. What will be the output of the following code:

```
import matplotlib.pyplot as plt
age=[22,32,35,45,55,14,26,19,44,48,33,38,28]
years=[0,10,20,30,40,50,60]
plt.hist(age, bins=years, color='magenta', histtype='bar', edgecolor='black')
plt.xlabel("Emp. Age")
plt.ylabel("No. of Emp.")
plt.title("ABC Company")
plt.show( )
```

6. Mr. Ankit is working in an organisation as data analyst. He uses Python Pandas and Matplotlib for the same. He got a dataset of the passengers for the year 2010 to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions given below:

	Year	Month	Passengers
0	2010	Jan	25
1	2010	Mar	50
2	2012	Jan	35
3	2010	Dec	55
4	2012	Dec	65

Code to create the above dataframe:

```
import pandas as _____ #Statement 1
data={"Year":[2010,2010,2012,2010,2012],"Month":["Jan","Mar","Jan","Dec","Dec"] ,"Passengers":
[25,50,35,55,65]}
df=pd._____(data) #Statement 2
print(df)
```

a. Choose the right code from the following for statement 1.

    i.   pd   ii.   df   iii.   data   iv.   p

b.   Choose the right code from the following for the statement 2.

    i.   Dataframe   ii.   DataFrame   iii.   Series   iv. Dictionary

c. Choose the correct statement/ method for the required output: (5,3)

    i.   df.index   ii.   df.shape( )   iii.   df.shape   iv.   df.size

d. He wants to print the details of "January" month along with the number of passengers, as shown:

	Month	Passengers
0	Jan	25
2	Jan	35

Identify the correct statement:

i.   df.loc[['Month','Passengers']][df['Month']=='Jan']
ii.   df[['Month','Passengers']][df['Month']=='Jan']
iii.   df.iloc[['Month','Passengers']][df['Month']=='Jan']
iv.   df(['Month','Passengers']][df['Month']=='Jan')

Worksheet: Logarithmic Function

1. Find the value of y.

    (1) $\log_5 25 = y$ (2) $\log_3 1 = y$ (3) $\log_{16} 4 = y$ (4) $\log_2 \dfrac{1}{8} = y$

    (5) $\log_5 1 = y$ (6) $\log_2 8 = y$ (7) $\log_7 \dfrac{1}{7} = y$ (8) $\log_3 \dfrac{1}{9} = y$

    (9) $\log_y 32 = 5$ (10) $\log_9 y = -\dfrac{1}{2}$ (11) $\log_4 \dfrac{1}{8} = y$ (12) $\log_9 \dfrac{1}{81} = y$

2. Evaluate.

    (1) $\log_3 1$ (2) $\log_4 4$ (3) $\log_7 7^3$ (4) $b^{\log_b 3}$ (3) $\log_{25} 5^3$ (4) $16^{\log_4 8}$

3. Write the following expressions in terms of logs of x, y and z.

    (1) $\log x^2 y$ (2) $\log \dfrac{x^3 y^2}{z}$ (3) $\log \dfrac{\sqrt{x}\,\sqrt[3]{y^2}}{z^4}$ (4) $\log xyz$

    (5) $\log \dfrac{x}{yz}$ (6) $\log \left(\dfrac{x}{y}\right)^2$ (7) $\log (xy)^{\frac{1}{3}}$ (8) $\log x\sqrt{z}$

    (9) $\log \dfrac{\sqrt[3]{x}}{\sqrt[3]{yz}}$ (10) $\log \sqrt[4]{\dfrac{x^3 y^2}{z^4}}$ (11) $\log x\sqrt{\dfrac{\sqrt{x}}{z}}$ (12) $\log \sqrt{\dfrac{xy^2}{z^8}}$

4. Write the following equalities in exponential form.

(1) $\log_3 81 = 4$ (2) $\log_7 7 = 1$ (3) $\log_{\frac{1}{2}} \frac{1}{8} = 3$ (4) $\log_3 1 = 0$

(5) $\log_4 \frac{1}{64} = -3$ (6) $\log_6 \frac{1}{36} = -2$ (7) $\log_x y = z$ (8) $\log_m n = \frac{1}{2}$

5. Write the following equalities in logarithmic form.

(1) $8^2 = 64$ (2) $10^3 = 10000$ (3) $4^{-2} = \frac{1}{16}$ (4) $3^{-4} = \frac{1}{81}$

(5) $\left(\frac{1}{2}\right)^{-5} = 32$ (6) $\left(\frac{1}{3}\right)^{-3} = 27$ (7) $x^{2z} = y$ (8) $\sqrt{x} = y$

6. True or False?

(1) $\log\left(\frac{x}{y^3}\right) = \log x - 3\log y$ (2) $\log(a-b) = \log a - \log b$ (3) $\log x^k = k \cdot \log x$

(4) $(\log a)(\log b) = \log(a+b)$ (5) $\frac{\log a}{\log b} = \log(a-b)$ (6) $(\ln a)^k = k \cdot \ln a$

(7) $\log_a a^a = a$ (8) $-\ln\left(\frac{1}{x}\right) = \ln x$ (9) $\ln_{\sqrt{x}} x^k = 2k$

7. Solve the following logarithmic equations.

(1) $\ln x = -3$ (2) $\log(3x - 2) = 2$

(3) $2\log x = \log 2 + \log(3x - 4)$ (4) $\log x + \log(x - 1) = \log(4x)$

(5) $\log_3(x + 25) - \log_3(x - 1) = 3$ (6) $\log_9(x - 5) + \log_9(x + 3) = 1$

(7) $\log x + \log(x - 3) = 1$ (8) $\log_2(x - 2) + \log_2(x + 1) = 2$

8. Prove the following statements.

    (1) $\log_{\sqrt{b}} x = 2\log_b x$ (2) $\log_{\frac{1}{\sqrt{b}}} \sqrt{x} = -\log_b x$ (3) $\log_{b^4} x^2 = \log_b \sqrt{x}$

9. Given that $\log 2 = x$, $\log 3 = y$ and $\log 7 = z$, express the following expressions in terms of x, y, and z.

    (1) $\log 12$ (2) $\log 200$ (3) $\log \dfrac{14}{3}$ (4) $\log 0.3$

    (5) $\log 1.5$ (6) $\log 10.5$ (7) $\log 15$ (8) $\log \dfrac{6000}{7}$

10. Solve the following equations.

    (1) $3^x - 2 = 12$ (2) $3^{1-x} = 2$

    (3) $4^x = 5^{x+1}$ (4) $6^{1-x} = 10^x$

    (5) $3^{2x+1} = 2^{x-2}$ (6) $\dfrac{10}{1+e^{-x}} = 2$

    (7) $5^{2x} - 5^x - 12 = 0$ (8) $e^{2x} - 2e^x = 15$

11. Draw the graph of each of the following logarithmic functions, and analyze each of them completely.

    (1) $f(x) = \log x$ (2) $f(x) = \log -x$

    (3) $f(x) = -\log(x-3)$ (4) $f(x) = -2\log_3(3-x)$

    (5) $f(x) = -\ln(x+1)$ (6) $f(x) = 2\ln\dfrac{1}{2}(x+3)$

    (7) $f(x) = \ln(2x+4)$ (8) $f(x) = -2\ln(-3x+6)$

12. Find the inverse of each of the following functions.

  (1) $f(x) = \log_2(x - 3) - 5$ (2) $f(x) = 3\log_3(x + 3) + 1$

  (3) $f(x) = -2\log 2(x - 1) + 2$ (4) $f(x) = -\ln(1 - 2x) + 1$

  (5) $f(x) = 2^x - 3$ (6) $f(x) = 2 \cdot 3^{3x} - 1$

  (7) $f(x) = -5 \cdot e^{-x} + 2$ (8) $f(x) = 1 - 2e^{-2x}$

13. 15 000\$ is invested in an account that yeilds 5% interest per year. After how many years will the account be worth 91 221.04\$ if the interest is compounded yearly?

14. 8 000\$ is invested in an account that yeilds 6% interest per year. After how many years will the account be worth 13709.60\$ if the interest is compounded monthly?

15. Starting at the age of 40, an average man loses 5% of his hair every year. At what age should an average man expect to have half his hair left?

16. A bacteria culture starts with 10 00 bacteria and the number doubles every 40 minutes.

  (a) Find a formula for the number of bacteria at time t.
  (b) Find the number of bacteria after one hour.
  (c) After how many minutes will there be 50 000 bacteria?

CHAPTER 3

MATRICES

MULTIPLE CHOICE TYPE QUESTIONS

1. If $A = (a_{ij})_{m\times n}$ is a scalar matrix, if
   A) $a_{ij} = 0, for\ all\ i \neq j$
   B) $a_{ij} = some\ constant\ k, for\ all\ i = j\ and\ a_{ij} = 0, for\ all\ i \neq j$
   C) $a_{ij} = 0, for\ all\ i = j$
   D) $a_{ij} = constant, for\ all\ i = j\ and\ a_{ij} = 0, for\ some\ i \neq j$

2. If $A = (a_{ij})_{m\times n}$ with $a_{ij} = \frac{(i-j)^2}{2}$ then $A =$
   A) $\begin{pmatrix} 0 & 1/2 \\ 1/2 & 0 \end{pmatrix}$ B) $\begin{pmatrix} 0 & -1/2 \\ -1/2 & 0 \end{pmatrix}$ C) $\begin{pmatrix} 1/2 & 0 \\ 0 & 1/2 \end{pmatrix}$ D) $\begin{pmatrix} -1/2 & 0 \\ 0 & -1/2 \end{pmatrix}$

3. If A and B are matrices with $AB = 0$ and $BA = 0$, then
   A) $A = 0\ or\ B = 0$ B) $either\ A = 0\ or\ B = 0$
   C) $A = 0\ and\ B = 0$ D) None

4. If $A(x) = \begin{pmatrix} cosx & -sinx & 0 \\ sinx & cosx & 0 \\ 0 & 0 & 1 \end{pmatrix}$, then $A(x).A(y) =$
   A) $A(x.y)$ B) A(x+y)   C) A(x-y)   D) None

5. The principal diagonal elements of a skew symmetric matrix are
   A) 1   B) 0   C) 0 or 1   D) None

6. What is the order of the matrix $(x\ \ y\ \ z)\begin{pmatrix} a & h & g \\ h & b & f \\ g & f & c \end{pmatrix}\begin{pmatrix} x \\ y \\ z \end{pmatrix}$

   A) 3x1   B) 1x1   C) 1x3   D) 3x3

7. The number of all possible matrices of order 3x3 with each entry 0 or 1 is:
   A) 27   B) 81   C) 18   D) 512

8. If $A = \begin{pmatrix} 2 & 1 & 3 \\ 4 & 5 & 6 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & 3 \\ 4 & 2 \\ 1 & 5 \end{pmatrix}$, then
   A) Only AB is defined   B) Only BA defined
   C) AB and BA both are defined   D) AB and BA both are not defined

9. The matrix $\begin{pmatrix} 0 & -2 & 4 \\ 2 & 0 & 6 \\ -4 & -6 & 0 \end{pmatrix}$ is
   A) Diagonal matrix   B) Symmetric matrix
   C) Skew symmetric matrix   D) Scalar matrix

10. If $A = \begin{pmatrix} 1 & 2 \\ 2 & 3 \end{pmatrix}$ and $A^2 - kA - I_2 = 0$, then $k =$
    A) 4   B) -4   C) 8   D) -8

11. If A is a 2x3 matrix and AB is 2x5 matrix, then B must be a
    A) 3x5 matrix   B) 5x3 matrix   C) 3x2 matrix   D) 5x2 matrix

12. If $A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$, then A^4

A) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ B) $\begin{pmatrix} 1 & 1 \\ 0 & 0 \end{pmatrix}$ C) $\begin{pmatrix} 0 & 0 \\ 1 & 1 \end{pmatrix}$ D) $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$

13. $(AB)^T =$

   A) $A^T . B^T$ B)$B^T A^T$ C) $(BA)^T$ D) None

14. If $A = (a_{ij})_{m \times n}$ is a square matrix, then

   A) $m < n$ B) $m > n$ C) $m = n$ D) None

15. If A is a square matrix such that $A^2 = I$, then $(A - I)^3 + (A + I)^3 - 7A =$

   A) A B) I-A   C) I+A   D) 3A

16.Choose the correct option

(A) Every scalar matrix is an identity matrix

(B) Every square matrix whose each element is 1 is an identity matrix

(C) Every scalar matrix is a diagonal matrix

(D) Every diagonal matrix is a scalar matrix

17.Assume X, Y, Z, W and P are matrices of order 2 × n, 3 × k, 2 × p, n × 3 and p × k, Respectively. The restriction on *n, k* and *p* so that PY + WY will be defined are

(A)k = 3, p = n

(B) k is arbitrary, p = 2

(C) p is arbitrary, k = 3

(D) k = 2, p = 3

18.The number of all possible matrices of order 2 × *3* with each entry 3 or 4.

(A) 24

(B) 20

(C) 64

(D) 36

19. Order of matrices A, B and C are $2 \times 3, 3 \times 4$ and 4×4 respectively then the order of matrix (AB)C is

(A)2 × 4

(B)3 × 3

(C)2 × 3

(D)3 × 4

20. If a matrix is symmetric as well as skew-symmetric then it must be a

(A) Square matrix

(B) Diagonal matrix

(C) Null matrix

(D) Identity matrix

21. If matrix $\begin{bmatrix} 6 & x+5 \\ 2x+3 & 3x+3 \end{bmatrix}$ is symmetric, then value of x is

(A) 3

(B) 2

(C) 4

(D) x may take any real value

22. If A is square matrix, then $A - A^T$ is

(A) Null matrix

(B) Square matrix

(C) Symmetric matrix

(D) Skew symmetric matrix

23. The matrix $\begin{bmatrix} 5 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{bmatrix}$ is

(A) Square matrix

(B) Diagonal matrix

(C) Scalar matrix

(D) All of these

24. If $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then A^n is equals to

(A) $\begin{bmatrix} n & 0 & 0 \\ 0 & n & 0 \\ 0 & 0 & n \end{bmatrix}$

(B) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

(C) $\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$

(D) None of these

25. If $A = \begin{bmatrix} cosx & -sinx \\ sinx & cosx \end{bmatrix}$ and $A + A^T = I$, then value of x is

(A) $\pi/6$

(B) $\pi/3$

(C) 2π

(D) $3\pi/2$

26. Choose the correct option

(A) If diagonal elements of a square matrix are 0 then it is skew symmetric

(B) If all the elements of a matrix are same then it is a scalar matrix

(C) Matrix denotes a number

(D) none of above

27. If $\begin{bmatrix} 3 & 1 \\ 2x-3 & x-3 \end{bmatrix}$ is a singular matrix then the value of x is

(A) 0

(B) 3

(C) 3/2

(D) 6

28. If $\begin{bmatrix} 6 & 0 \\ x-3 & x+3 \end{bmatrix}$ is a scalar matrix then value of x is

(A) 3

(B) -3

(C) 0

(D) 2

29. The matrix A = $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 4 \end{bmatrix}$

(A) symmetric matrix

(B) skew-symmetric matrix

(C) diagonal matrix

(D) none of these

30. If A = $\begin{bmatrix} 5 & x \\ y & 0 \end{bmatrix}$ and A = A^T, then

(A) x = 0, y = 5

(B) x + y = 5

(C) x = y

(D) none of these

31. If a matrix has 18 elements, then the number of its possible order is

(A) 2

(B) 4

(C) 6

(D) 8

32. If A is a matrix having 3 rows and 2 columns, then number of elements in matrix A is

(A) 5

(B) 6

(C) 18

(D) 1

33. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$, then $A^2 - 4A =$

(A) 2I

(B) 3I

(C) 4I

(D) 5I

34. If A and B are two matrices such that AB = B and BA = A, then $A^2 + B^2$ is

 equal to

(A) 2AB

(B) 2 BA

(C) A+ B

(D) AB

35. If A is of order $m \times n$ and B is of order $p \times q$, then AB is defined only if

(A) $m = q$

(B) $m = p$

(C) $n = p$

(D) $n = q$

CHAPTER 3
MATRICES

CASE STUDY BASED QUESTIONS

I. On her birthday, Seema decided to donate some money to children of an orphanage home. If there were 8 children less, everyone would have got Rs.10 more. However, if there were 16 children more, everyone would have got Rs.10 less. Let the number of children be x and the amount distributed by Seema for one child be y (in Rs.)

Based on the information in terms x and y are

1. The equation in terms x and y are
   A) 5x-4y = 40, 5x-8y= -80   B) 5x-4y = 40, 5x-8y= 80
   C) 5x-4y = 40, 5x+8y= -80   D) 5x+4y = 40, 5x-8y= -80

2. Which of the following matrix equations represent the information given above?

   A) $\begin{bmatrix} 5 & 4 \\ 5 & 8 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 40 \\ -80 \end{bmatrix}$ B) $\begin{bmatrix} 5 & -4 \\ 5 & -8 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 40 \\ 80 \end{bmatrix}$

   C) $\begin{bmatrix} 5 & -4 \\ 5 & -8 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 40 \\ -80 \end{bmatrix}$ D) $\begin{bmatrix} 5 & 4 \\ 5 & -8 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 40 \\ -80 \end{bmatrix}$

3. The number of children who were given some money by Seema, is
   A) 30   B) 40   C) 23   D) 32

4. How much amount is given to each child by Seema?
   A) Rs.32   B) Rs.30   C) Rs.62   D) Rs.26

5. How much amount Seema spends in distributing the money to all the students of Orphanage?
   A) Rs.609   B) Rs.960   C) Rs.906   D) Rs.690

II. The monthly incomes of two brothers Rakesh and Rajesh are in the ratio 3:4 and the monthly expenditures are in the ratio 5:7. Each brother saves Rs. 15000 per month.

Read the above instruction and answer the following questions.

1. If monthly income of Rakesh and Rajesh are 3x and 4x and their expenditure are 5y and 7y respectively, then identify the system of linear equations for the above problem.
   A) x-y=15000, x+ y=15000   B) 3x+ 5y=15000, 4x+ 7y=15000
   C) 3x-5y=15000, 4x-7y=15000   D) 5x-3y=15000, x-4y=15000

2. Identify the matrix equation for question (6)

   A) AX=B, where A = $\begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}, X = \begin{pmatrix} x \\ y \end{pmatrix}, B = \begin{pmatrix} 15000 \\ 15000 \end{pmatrix}$

   B) BX=A, where A = $\begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}, X = \begin{pmatrix} x \\ y \end{pmatrix}, B = \begin{pmatrix} 15000 \\ 15000 \end{pmatrix}$

   C) AB=I, where A = $\begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}, X = \begin{pmatrix} x \\ y \end{pmatrix}, B = \begin{pmatrix} 15000 \\ 15000 \end{pmatrix}$

   D) AB=X, where A = = $\begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}, X = \begin{pmatrix} x \\ y \end{pmatrix}, B = \begin{pmatrix} 15000 \\ 15000 \end{pmatrix}$

3. If AX = B, where A, X, B matrices then X should be
   A) X = AB   B) X = A⁻¹B   C) X = AB⁻¹   D) X = BA

4. If $A = \begin{pmatrix} 3 & -5 \\ 4 & -7 \end{pmatrix}$, then A⁻¹

   A) $\begin{pmatrix} 7 & 5 \\ 4 & 3 \end{pmatrix}$ B) $\begin{pmatrix} -7 & 5 \\ 4 & 3 \end{pmatrix}$ C) $\begin{pmatrix} -7 & 5 \\ 4 & 3 \end{pmatrix}$ D) $\begin{pmatrix} 7 & -5 \\ 4 & -3 \end{pmatrix}$

5. Monthly incomes of Rajesh and Rajesh respectively are
   A) 90,000 each   B) 90,000 and 1,20,000   C) 1,20,000 and 90,000
          D) None

III. Read the passage given below and answer the following questions

Two business persons Rampal and Guru manufactures three types of products namely table, chair and benches. The sale (in rupees) of these products by both in the month of September and October are given by the following matrices A and B

September sales (in Rupees)   table   chair   benches

$$A = \begin{bmatrix} 5000 & 10000 & 15000 \\ 10000 & 13000 & 20000 \end{bmatrix} Rampal/Guru$$

October sales (in Rupees)   table   chair   benches

$$B = \begin{bmatrix} 15000 & 18000 & 10000 \\ 15000 & 20000 & 25000 \end{bmatrix} Rampal \; /Guru$$

1. The total sales in September and October for each farmer in each variety can be represented as

a. A+B

b. A-B

c. AB

d. none

2. What is the value of A_{23} and what does it represents

a. 10000, sales of benches by Guru

b. 20000, sales of benches by Guru

c. 30000, sales of table by Rampal

d. 20000, sales of chair by guru

3. The decrease in sales from September to October is given by _____ .

a. A+B

b. A-B

c. AB

d. none

4. If Rampal receives 2% profit on gross sales, compute his profit for each type of product sold in October.

a. Rs. 100, Rs. 200 and Rs. 120

c. Rs. 300, Rs. 360 and Rs. 200

d. Rs. 110, Rs. 200 and Rs. 120

IV. Three schools A, B and C organised a mela for collecting funds for helping the rehabilitation of earthquake victims. They sold hand made quilt, clothes and mats from recycled material at a cost of Rs. 25, Rs. 100 and Rs. 50 each. The number of articles sold by school A, B, C are given below.

School/Article	A	B	C
Quilts	20	30	25
Clothes	40	25	50
Mats	50	40	40

Based on the above information, answer the following questions.

1. If P be a 3x3 matrix represent the sale of handmade quilt, clothes and mats by three schools A, B and C, then

(A)
$$P = \begin{matrix} & \text{Quilts} & \text{Clothes} & \text{Mats} \\ A \\ B \\ C \end{matrix} \begin{bmatrix} 20 & 40 & 50 \\ 25 & 25 & 40 \\ 30 & 50 & 40 \end{bmatrix}$$

(B)
$$P = \begin{matrix} & \text{Quilts} & \text{Clothes} & \text{Mats} \\ A \\ B \\ C \end{matrix} \begin{bmatrix} 20 & 40 & 50 \\ 30 & 25 & 40 \\ 25 & 50 & 40 \end{bmatrix}$$

(C)
$$P = \begin{matrix} & \text{Quilts} & \text{Clothes} & \text{Mats} \\ A \\ B \\ C \end{matrix} \begin{bmatrix} 20 & 40 & 50 \\ 25 & 20 & 40 \\ 30 & 50 & 40 \end{bmatrix}$$

(D)
$$P = \begin{matrix} & \text{Quilts} & \text{Clothes} & \text{Mats} \\ A \\ B \\ C \end{matrix} \begin{bmatrix} 20 & 40 & 50 \\ 25 & 25 & 30 \\ 30 & 50 & 40 \end{bmatrix}$$

2. If Q be 1x3 matrix represent the sale price(in Rs.) of given product per unit, then

(A) $Q = \begin{bmatrix} 25 \\ 50 \\ 100 \end{bmatrix} \begin{matrix} \text{Quilts} \\ \text{Clothes} \\ \text{Mats} \end{matrix}$

(B) $Q = \begin{bmatrix} 25 \\ 100 \\ 50 \end{bmatrix} \begin{matrix} \text{Quilts} \\ \text{Clothes} \\ \text{Mats} \end{matrix}$

(C) $Q = \begin{matrix} \text{Quilts} & \text{Clothes} & \text{Mats} \\ [25 & 100 & 50] \end{matrix}$

(D) $Q = \begin{matrix} \text{Quilts} & \text{Clothes} & \text{Mats} \\ [25 & 50 & 100] \end{matrix}$

3. The fund collected by school A by selling the given articles is

(A) Rs. 7000   (B) Rs. 6125   (C) Rs.8525   (D) Rs. 8000

4. The fund collected by school B by selling the given articles is

(A) Rs. 5250   (B) Rs. 3750   (C) Rs. 7125   (D) Rs. 8125

5. The total funds collected for the required purpose is

(A) Rs. 20000   (B) Rs. 21000   (C) Rs. 30000   (D) Rs. 19875

V. A manufacturer produces three types of bolts X, Y and Z which he sells in two markets. Annual sales (in Rs) are indicated below :

Markets Products

	X	Y	Z
1	10000	2000	18000
2	6000	20000	8000

If unit sales prices of X, Y and Z are Rs 2.50, Rs 1.50 and Rs 1.00 respectively, then answer the following questions using the concept of matrices.

1. Find the total revenue collected from the Market-I.

(A) Rs 44000

(B) Rs 48000

(C) Rs 46000

(D) Rs 53000

2. Find the total revenue collected from the Market-II.

(A) Rs 51000

(B) Rs 53000

(C) Rs 46000

(D) Rs 49000

3. If the unit costs of the above three commodities are Rs 2.00, Rs 1.00 and 50 paise respectively, then find the gross profit from both the markets.

(A) Rs 53000

(B) Rs 46000

(C) Rs 64000

(D) Rs 67000

CASE BASED QUESTIONS

1. Manjit wants to donate a rectangular plot of land for a school in his village. When he wasasked to give dimensions of the plot, he told that if its length is decreased by 50 m andbreadth is increased by 50m, then its area will remain same, but if length is decreased by10mand breadth is decreasedby20m, then itsareawill decreaseby5300m^2
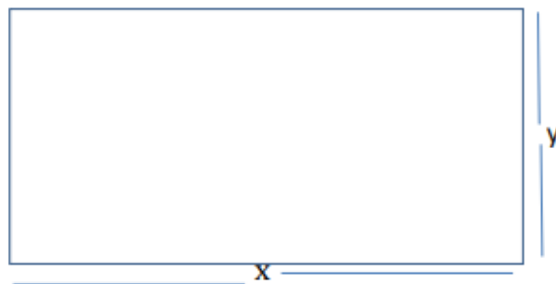
Basedontheinformationgivenabove,answerthefollowingquestions:

i) Thevalue ofx(length ofrectangularfield)is

      150 m   b)400 m c) 200m d) 320 m

ii) Thevalueofy(breadthof rectangularfield)is

150 m   b)200 m   c) 430 m d) 350 m

iii) How much is the area of rectangular field?

a)60000 sq m b)30000 sq m c) 3000 sq m d) 30000 m

iv) The equations in terms of x and y are

a. x+y =50, 3x-y = 550

    b.x-y=50,2x+y=550

    c.x+y= 50, 2x+ y=550

d.x+y= 50,2x+y=550

2. Three shopkeepers Ujjwal, Lohith, and Kundan are using polythene bags, handmade bags and newspaper's envelope as carry bags. It is found that the shopkeepers Ujjwal, Lohith, and Kundan are using (20, 30, 40), (30, 40, 20), and (40, 20, 30) polythene bags, handmade bags, and newspapers envelopes respectively. They spent ₹250, ₹270, and ₹200 on these carry bags respectively. Let the cost of polythene bag, handmade bag and newspaper envelope costs are x,y and z respectively.

i) What is the Linear equation representing amount spent by Lohith on carry bags?

a.20x +30y+40z=250

b.30x +40y+20z=270

c.40x +20y+30z=270

d. 250x +270y+200z=0

ii) Whatisthecostof one newspaper bag?

a. ₹1   b.₹2 c.₹3   d.₹5

iii) Find the total amount spent by Ujjwal for

handmade bags ?

a.100   b.200   c.150   d.250.

3. Two schools A and B want to award their selected students on the values of Honesty, Hard work and Punctuality. The school A wants to award Rs.x each, Rs. y each and Rs. z each for the three respective values to its 3, 2 and 1 students respectively with a total award money of Rs.2200. School B wants to spend Rs.3100 to award its 4, 1 and 3 students on the respective values (by giving the same award money to the three values as school A). The total amount of award for one prize on each value is Rs.1200.

Using the concept of matrices and determinants, answer the following questions.

(i) What is the award money for Honesty?

(a) Rs.350   (b) Rs.300   (c) Rs.500   (d)Rs.400

(ii) What is the award money for Punctuality?

(a) Rs.300   (b) Rs.280   (c) Rs.450   (d) Rs.500

(iii) What is the award money for Hard work?

(a) Rs 500   (b) Rs.400   (c) 0   (d) none of these

4. Gaurav purchased 5 pens, 3 bags and 1 instrument box and pays Rs. 16. From the same shop, Dheeraj purchased 2 pens, 1 bag and 3 instrument boxes and pays Rs.19, while Ankur purchased 1 pen, 2 bags and 4 instrument boxes and pays Rs.25.

Using the concept of matrices and determinants, answer the following questions.

(i) The cost of one pen is

(a) Rs.2 (b) Rs.5   (c) Rs.1(d) Rs.3

(ii) What is the cost of one pen and one bag?

(a) Rs.3 (b) Rs.5   (c) Rs.7(d) Rs.8

(iii) What is the cost of one pen and one instrument box?

(a) Rs.7 (b) Rs.6   (c) Rs.8(d) Rs.9

(iv) Which of the following is correct?

(a) Determinant is a square matrix.   (b) Determinant is a number associated to a matrix

(c) Determinant is a number associated to a square matrix (d) All of the above

(v) From the matrix equation AB = AC, it can be concluded that B = C provided

(a) A is singular   (b) A is non-singular   (c) A is symmetric   (d) A is square

5. A total amount of Rs. 7000 is deposited in three different saving banks accounts a with annual interest rates of 5%,8% and 81/2% respectively. The total annual interest from these accounts is Rs 550, Equal amounts have been deposited in the 5% and 8% savings accounts.

Using Rs x, Rs y, and Rs z be invested in saving accounts

Using the concept of matrices and determinants, answer the following questions.

i) Which of the following is true?

(a) x +y +z=7000   (b) 10x+16y+17z=110000   (c) x-y=0   (d)All of these

ii) The system of given equations can be written as AX=B here A=$[a_{ij}]$ and A_{ij} is co-factor of a_{ij} so A_{32} is

(a) 7   (b) -7 (c) -1   (d) 0

iii) The value of z is

(a) 9000   (b) 38000   (c) 4750   (d) 1125

iv) If A and B be the square matrices of same order such that AB=8I=BA then which one is true

(a) A⁻¹=B/8   (b) B⁻¹=A/8   (c) A⁻¹=B   (d) a and b both

6. Two organizations A and B want to award their selected employees on the values of Honesty, Hard work and Punctuality. The organization A wants to award $Rs. x$ each, $Rs. y$ each and $Rs. z$ each for the three respective values to its 3, 2 and 1employees respectively with a total award money of $Rs. 2000$. Organization B wants to spend $Rs. 3000$ to award its 4, 1 and 3 employees on the respective values (by giving the same award money to the three values as organization A). The total amount of award for prizes on each value is $Rs. 900$.

On the basis of above information, answer the following questions.

(i) What is the award money for Honesty?

 (a) $Rs. 350$(b) $Rs. 300$ (c) $Rs. 500$ (d) $Rs. 400$

(ii) What is the award money for Punctuality?

(a) $Rs. 300$(b) $Rs. 280$ (c) $Rs. 500$ (d) $Rs. 450$

(iii) What is the award money for Hard work?

(a) $Rs. 300$(b) $Rs. 100$ (c) $Rs. 500$ (d) $Rs. 550$

(iv) If a matrix B is both symmetric and skew-symmetric, then $|B|$ is   equal to

 (a) 1   (b) -1 (c) 0   (d) 2

(v) If P and Q are two $matrices$ $such$ $that$ $PQ = Q$ and $QP =$ $P, then$ $|Q^2|$ is equal to

 (a) $|Q|$ (b) $|P|$ (c) 1   (d) 0

7. Three friends rahul ,ravi and rakesh went to a vegetable market to purchase vegetable . from a   vegetable shop Rahul purchased 1 kg each olf potato, onion and brinjal for a total of 21rs. Ravi purchaserd 4 kg of potato , 3 kg of onion and 2kg of brinjal for 60rs. While rakesh purchased 6 kg potato , 2kg onion and 3 kg brinjal for 70rs.

Based on the above informations answer the following.

(i)If the cost of Potato, Onion and Brinjal are Rs.x, Rs.y and Rs.z per kg respectively, then algebraic representation of given situation of problem is

(A). $x + y + z = 6, x + y + 3z = 11, 3x + 2y + z = 21$

(B). $x + y + z = 21, 4x + 3y + 2z = 60, 6x + 2y + 3z = 70$

(C). $2x + 3y + z = 21, x + y + z = 60, x + 2y + z = 70$

(D). $x + y + z = 70, 4x + 2y + 2z = 21, 6x + 2y + 3z = 6$

(ii)Matrix equation of above situation is

(A). $\begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 2 \\ 6 & 2 & 3 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 21 \\ 60 \\ 70 \end{bmatrix}$

(B). $\begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 2 \\ 6 & 2 & 3 \end{bmatrix} \begin{bmatrix} 21 \\ 60 \\ 70 \end{bmatrix} = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$

(C). $\begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 2 \\ 6 & 2 & 3 \end{bmatrix} \begin{bmatrix} 21 \\ 60 \\ 70 \end{bmatrix} = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$

(D). $\begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 2 \\ 6 & 2 & 3 \end{bmatrix} = \begin{bmatrix} 21 \\ 60 \\ 70 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$

(iii)If A=$\begin{bmatrix} 1 & 1 & 1 \\ 4 & 3 & 2 \\ 6 & 2 & 3 \end{bmatrix}$

(A). 0

(B).1

(C).-5

(D).5

(iv)The cost of Potato, Onion and Brinjal are
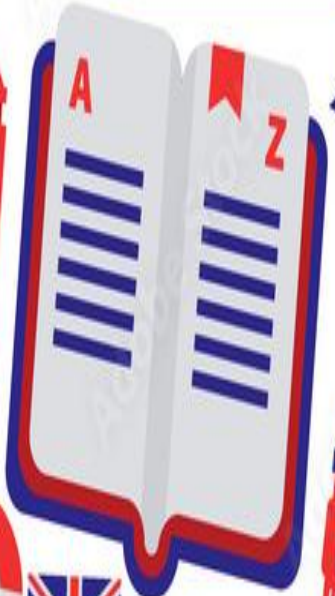
(A).Rs.5,Rs.8 and Rs.8

(B). Rs.4,Rs.8 and Rs.11

(C). Rs.5,Rs.11 and Rs.10

(D). Rs.5,Rs.8 and Rs.15

ENGLISH

CLASS-XII

Topic (POSTER MAKING)	Roll no.
Inspirational thoughts with the picture of any great personality.	01-10
Indian culture	11-20
Write any 5 success mantra	21-30
India's achievemnets from 1947-2024	31-onwards

PRODUCTIVE ZONE

Topic	Roll no.
• Write any 4 formal invitation and replies on a chart paper	All
• Write 4 letters to editor on a chart paper	All
• Write an article on "Importance of education" on a chart paper	1-13
Write an article on "Importance of sports" on a chart paper	14-26
Write an article on "Importance of discipline" on a chart paper	27-ONWARDS

Note-The work must be neat and clean.

CLASS-XI

CREATIVE ZONE

Topic	Roll no.
Make charts on Educational Thought	01-07
Make collage on Seven Wonders	08-15
Make collage on "Fit India Hit India"	16-22
Write the biography of any author/poet you have in your syllabus	23-30

PRODUCTIVE ZONE

Topic	Roll no.
• Write the rules of "clauses on a chart.	01-10
• Write any 15 words with their antonyms on a chart.	11-20
• Read English news paper regularly and write any 20 words with their synonyms on a chart.	21-ONWARDS

Note-The work must be neat and clean.

CERTIFICATE

This is to certify that (student's name) of class XI has completed his/her (subject name) project titled (title of the project) under the guidance of (teacher's name) for the academic year (school year). The certified student has been dedicated throughout his/her research and completed her/his work before the given deadline without missing any important details from the project. It is also certified that this project is the individual work of the student and can be submitted for evaluation.

Teacher's signature   **Student's signature**

ACKNOWLEDGEMENT

I want to thank everyone who has helped and supported me throughout my School project, [Project name].

First and foremost, a big thank you to my subject (your subject) teacher, [Teacher's Name], for giving me valuable guidance and pointing me in the right direction.

I am also grateful to our wonderful principal, [Principal's Name], who has created a nurturing and creative environment in our college.

I owe a special debt of gratitude to my parents, whose constant encouragement, patience, and understanding have been the foundation of my success.

I would also like to acknowledge my friends who contributed their ideas and perspectives, which greatly enriched the project.

I appreciate each and every one of you for shaping this project and enhancing my learning experience. Thank you all!