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# HOLIDAY HOMEWORK

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CLASS XI, SESSION: 2025-26



HANSRAJ PUBLIC SCHOOL  
SECTOR-6, PANCHKULA

## Message from the Principal



Dear Children

**Success is no accident, it is hard work, perseverance, learning, studying, sacrifice and most of all love for what we are doing or learning to do**

**Hansraj** has once again proved this with the outstanding result exhibited by class X and XII students. It gives me an immense sense of pride and satisfaction to see all Hansarians consistently display excellence in multiple fields be it academics, sports extra curriculums or innovation. I take up this opportunity to congratulate all the stakeholders of the school for this noteworthy success. It is their positive and collaborative partnership that has led the school to scale higher goals .

The last few weeks saw the country go through unprecedented upheavals. The lesson to be learnt from the experience is to face sudden challenges posed by life with a strength of mind and belief in ourselves. And then nothing can stop us from achieving success.

The present session began eventfully and now it is time for much awaited summer vacations. As we embark on our well-deserved break, I encourage you to utilize these holidays productively. Here are some suggestions:

**Read:** Explore new books, authors, or genres.

**Learn:** Acquire new skills or hobbies.

**Reflect:** Think about your goals and aspirations.

**Relax:** Recharge and rejuvenate.

**Give back:** Engage in community service or volunteer work.

**Explore:** Travel to new places with your family, explore unfamiliar cuisines, customs and cultures.

**Family time:** Visit your grandparents, spend quality time with them and your family.

**Exercise:** Go for nature walks, do Yoga and practice a sport.

The Holiday Homework has been planned for you, with much thought so as to help you enjoy putting in practice what you have learnt. The projects included are research based with the aim to extend your knowledge, thinking skills and creativity. As always, the holiday homework will be assessed and the best ones will receive recognition. I wish you all the luck for it.

Make the most of your break and return refreshed and motivated!

**Jai Hind**

**Jaya Bhardwaj**  
**Principal**

## ACCOUNTANCY

Topic: Project Work in Accountancy

Imagine of opening a Sole- proprietary business of your choice. Frame the transactions you enter into in the first year of its formation (minimum 30), right from introducing capital. Later prepare the journal for recording the transactions.

Note: Use loose A4 size sheets.

## BUSINESS STUDIES

Topic: Lesson 1&2

Prepare 20 objective type questions from each chapter. The questions framed must comprise of Assertion- Reasoning, Match the following, Case- based and Competency-based typologies (with solution).

Note: To be done in Business Studies notebook.

- Prepare a business quiz comprising of minimum 10 and maximum 20 questions under 2-5 rounds for example; pictorial identification, tagline, expansion of acronyms etc. It can be prepared using audio visual aid and in a group of 4-6 students. OR
- Prepare a PPT/ Scrap file of any five global ions and icons in the world of business and their contribution OR any five successful Indian start ups. (To be done by student individually)

## ECONOMICS (030)

The primary purpose of homework is to reinforce and expand learning, maintain academic momentum and provide opportunities for deeper exploration of economic concepts.

### PART A

Attempt the following questions in economics notebook.

1. Which of the following methods give better results and why?  
(a) Census  
(b) Sample
2. Explain the 'exclusive' and 'inclusive' methods used in classification of data.
3. What is a variable? Distinguish between a discrete and a continuous variable.
4. What kind of diagrams are more effective in representing the following?  
(a) Monthly rainfall in a year

- (b) Composition of the population of Delhi by religion
- (c) Components of cost in a factory.

5. “An economy always produces on, but not inside, a PPC”, Defend or refute the statement.

### **Part B**

Complete project work according to CBSE guidelines

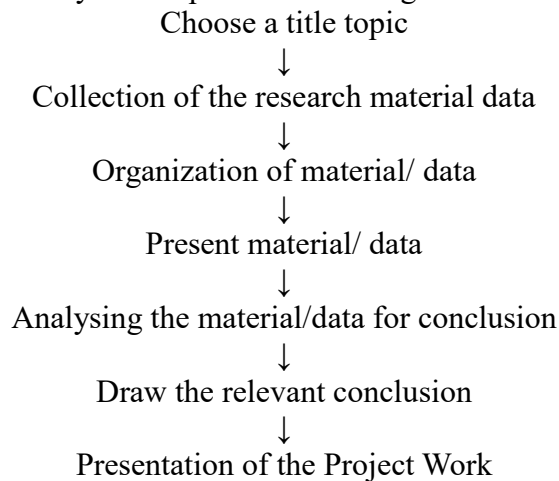
The objectives of the project work are to enable learners to:

- probe deeper into theoretical concepts learnt in class
- 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), hand-written.

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



#### **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.

**Suggestive List of Projects topics:**

- Effect on PPC due to various government policies
- Invisible Hand (Adam Smith)
- Opportunity Cost as an Economic Tool (taking real life situations)
- Effect of Price Change on a Substitute Good (taking prices from real life visiting local market)
- Effect on Equilibrium Prices in Local Market (taking real life situation or recent news)
- Effect of Price Change on a Complementary Good (taking prices from real life visiting local market)
- Solar Energy, a Cost-Effective Comparison with Conventional Energy Sources
- Bumper Production- Boon or Bane for the Farmer
- Any other newspaper article and its evaluation on basis of economic principles
- Any other topic

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

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence

Cover page should include:

- Title of the Project, student information, school and year.
- List of contents
- Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
- Introduction.
- Topic with suitable heading.
- Planning and activities done during the project, if any.
- Observations and findings of the visit.
- Conclusions (summarized suggestions or findings, future scope of study).
- Photographs (if any).
- Appendix
- Teacher's observation, Signatures of the teachers.

## ENGLISH

**IMPORTANT INSTRUCTIONS:**

- # Answers to all the questions have to be done in the notebooks.
- # Only ANSWERS should be written.

**READING:**

Q1. Read the passage given below.

### **Donated Organs and their Transportation**

1. Once an organ donor's family gives its consent and the organs are matched to a recipient, medical professionals are faced with the onerous challenge of transporting organs while ensuring that the harvested organ reaches its destination in the shortest possible time. This is done in order to preserve the harvested organs and involves the police and especially the traffic department.
2. The traditional method of transporting organs by road is referred to as a 'green corridor'. This process entails police escorting an ambulance, so is chosen and all signals on the route stay green to ensure it reaches its destination in the shortest possible time. A green corridor is a route cleared and cordoned off by the traffic police to ensure the smooth and steady transportation of harvested organs, on most occasions, to those awaiting a life saving transplant. Organs tend to have a very short preservation time, such as the heart, which has to be harvested and transplanted within four hours or the lungs, which can be preserved for only six hours once they are harvested.
3. The first green corridor in India was created by the Chennai Traffic Police in September 2008 when they accomplished their task of enabling an ambulance to reach its destination within 11 minutes during peak hour traffic. That organ saved a nine-year-old girl whose life depends on the transplant.
4. Similarly, such green corridors have been created by traffic police of various cities such as Pune, Mumbai, Delhi NCR, etc. Personnel are stationed at selected point to divert, control and clear the traffic giving way to the ambulance. Apart from this, a motorcade of police vehicles accompanies the ambulance ensuring that it does not face any problems. Delhi Traffic police provided a green corridor from IGI Airport to the Institute of Liver and Biliary Sciences in Vasant Kunj for transportation of a liver. The distance of 14 kms was covered in 11 minutes.
5. Experts points out the lack of a robust system to transport organs to superspeciality hospitals in least possible time. The National Organ and Tissue Transplant Organisation (NOTTO), the country's apex organ donation agency, is now framing a proposal to airlift cadaver organs and will send a report to the Union Health Ministry. "Cadaver organs have a short life and so transplant should be done within a few golden hours," Director (NOTTO) expressed. "Therefore, we are preparing a proposal for airlifting organs at any given moments."
6. Most States do not have enough well-trained experts to retrieve or perform transplant procedures. Also, there is an acute shortage of advanced healthcare facilities to carry out a transplant. So, it is referred to other big centers in metropolitan cities. Organs retrieved from Aurangabad, Indore, Surat, Pune are sent to Mumbai as these cities do not have super-specialty healthcare centers, informed officials.

7. "In Indian about fifty thousand to one lakh patients are suffering from acute heart failure and need heart transplant at any point of time. In a private set-up, a heart transplant costs rupees 15 – 20 lakh, which is followed up by post-operative medication of about rupees 30,000 per month lifelong."

**1.1 On the basis of your understanding of the above passage. Answer any five of the following questions by choosing the most appropriate option:**

**(1x5=5)**

(a) The first green corridor in India was created in

- (i) New Delhi                      (ii) Chennai                      (iii) Mumbai                      (iv) Pune

(b) The organization which is framing a proposal to airlift cadaver organs is

- (i) Union Health ministry  
(ii) Regional Organ and Tissue Transplant Organisation  
(iii) National Organ and Tissue Transplant Organisation  
(iv) State Organ and Tissue Transplant Organisation

(c) The onerous task that the author is talking about in para 1 is

- (i) finding organ donors.  
(ii) finding doctors capable of performing transplants.  
(iii) to carry the harvested organ in the shortest possible time.  
(iv) to arrange the requisite facilities for the transplant.

(d) Most of the people do not go for heart transplant as

- (i) it is very risky.  
(ii) it is very painful.  
(iii) it may cause death of the recipient.  
(iv) the cost is prohibitive.

(e) Most states refer organ transplant cases to big hospitals because

- (i) they don't have well-trained experts.  
(ii) the patients don't trust local doctors.

(iii) the state hospitals are very crowded.

(iv) they don't have a pool of harvested organs.

(f) Heart retrieved from a body is alive only for \_\_\_\_\_ hours.

(i) two

(ii) three

(iii) four

(iv) five

**1.2 Answer the following questions briefly:**

**(1x5=5)**

(a) What is a 'green corridor'?

(b) Why is smooth transportation of the retrieved organ necessary?

(c) What opinion do you form of the Chennai Police with regard to the transportation of a harvested heart?

(d) What does the author mean by 'a few golden hours'?

(e) How much does a heart transplant cost a patient in a private hospital?

**1.3 Pick out the words from the passage which mean the same as the following: (1x2=2)**

(a) Save (para 1)

(b) Achieved/carried out (para 3)

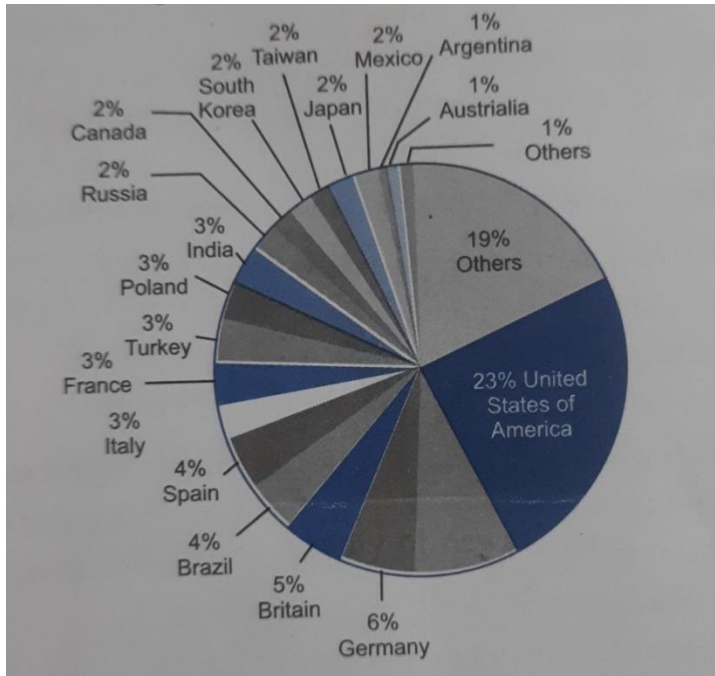
**Q2. Read the passage given below and answer the questions that follow:**

**(8 marks)**

Cybercrime is a criminal activity that either targets or uses a computer, a computer network or a networked device. Most, but not all, cybercrime is committed by cybercriminals or hackers who want to make money. Cybercrime is carried out by individuals or organisations. Some cybercriminals are organised, use advanced techniques and are highly technically skilled. Others are novice hackers.

The sole aim of carrying out cybercrime is to earn phenomenal profit. These ill motives could be political or personal. It has become a global crime and most of the countries are affected by it. With everything trending towards digitalisation, it has become easier for hackers to deceive people.





Though the cyber cops are engaged in constant efforts to get the better of this problem, they find it impossible to control and prevent this reality. By its very nature, the proliferating phenomenon is unpredictable and often untraceable. A hacker has no concern about time and distance as he can break into a system at the other end sitting at one end of the globe. There are common methods used by these hackers of targeting people with various kinds of crimes.

Major types of crimes
Debit/Credit card frauds (vishing)
Job fraud
Card skimming
Gifts and loan offers
Social media cases
Other advance fee scams
Business opportunity fraud

Over 59% of Indian adults fell victim to the growing number of cyber-crimes in the past year. said a report by cybersecurity software company, Norton Lifelock. The company surveyed over 10,000 adults in 10 countries Australia, France, Germany, India, Italy, Japan, the Netherlands, New

Zealand, the United Kingdom (UK) and the United States (US). Of these 1,000 adults were Indian adults were from India.

According to the report, a whopping 27 million Indian adults were victim to identity theft in past 12 months, and 52% of adults in the country do not know how to protect themselves from cyber-crime. "In a year of lockdowns and restrictions, cyber criminals have not been deterred. More Indian adults fell victim to identity theft in the past 12 months and most are concerned about data privacy," said Ritesh Chopra, director sales and field marketing, India & SAARC Countries, Norton Life Lock

The internet has become an integral part of today's life as it has touched every aspect of a modern living from travelling to shopping, from internet banking to paying to a street vendor, everything is being influenced by it. These transactions are either done through a computer or our phones A computer which doesn't have a good security control is vulnerable to be controlled by these hackers.

A computer data can be stolen by opening an email attachment with virus, clicking on malicious links and downloading an unsecure data. Briefly, it can be concluded that one needs to have this security wall known as cyber security to keep data, confidential information and documents secured against any theft or illegal access.

**On the basis of your understanding of the above passage, answer the following questions:**

(i) Who is a 'hacker' as general understanding of the term?

(ii) Complete the following statement:

Digitalisation refers to \_\_\_\_\_)

(iii) Choose the correct statement:

- (a) Vishing entices people to get indulged into online shopping.
- (b) Vishing is a practice that befools people to make online payment.
- (c) Many victims of vishing are the people who are not tech-savvy.
- (d) Tech-savvy people can never fall prey to vishing.

(iv) What do you understand by the term 'card skimming'?

- (a) To skim the debit or credit card and make it invalid.
- (b) Illegal collection of data from the magnetic stripe of a credit, debit card through a device

- (c) Illegal copy of a debit or credit card.
- (d) Blocking of card to make it redundant.
- (v) Why did cybercrime reach its all-time high during a period of lockdown restrictions? (2 marks)
- (vi) Social media crime may include:
- (a) stalking                      (c) cyber bullying                  (b) vacation robberies    (d) All of the above
- (vii) Which of the following is an example of fee scam?
- (a) Ticket scams where the customer ends up buying fake tickets for an event.
- (b) Creation of fake profiles.
- (c) Online threads.
- (d) All of the above.
- (viii) Novice hackers' means \_\_\_\_\_
- (a) hackers who are experts    (c) coach hackers
- (b) hackers who are beginners    (d) young hackers

**WRITING:**

Q1. Some people in your area have been unkind to stray animals. You often see them hitting or mistreating the animals. Create a poster in not more than 50 words informing the people in your colony about a fundraising event to build an animal shelter. Mention relevant details.

2. Indian restaurant industry is driven by the growing eating out factor. This calls for quick services, variety in cuisine and value for money. Restaurants and eat outs are gearing for a massive expansion in seating capacity for the consumers. Being in the same business, you wish to open an eating point in DDA market, Vikas Puri. Draft an advertisement in 50 words for publication in The Hindustan Times for purchase of a small space (10 ft × 12 ft) in the market under the Classified Column 'Property'.

## GRAMMAR:

**Q1. Complete the passage given below by choosing the correct alternatives.**

The house **(a)**..... Which we were to live was **(b)**..... one end of the village. It was **(c)**..... behind a screen of mango and orange trees **(d)**..... bushes of hibiscus full **(e)**..... enormous scarlet flowers. The house was adequate without **(f)**..... luxurious. We had just **(g)** ..... unpacking when we were greeted by the housekeeper **(h)** .....name was Paula.

- |    |           |              |                  |              |
|----|-----------|--------------|------------------|--------------|
| a) | i) on     | ii) at       | iii) in          | iv) by       |
| b) | i) at     | ii) in       | iii) on          | iv) by       |
| c) | i) hide   | ii) hid      | iii) hiding      | iv) hidden   |
| d) | i) with   | ii) or       | iii) and iv) but |              |
| e) | i) of     | ii) from     | iii) with        | iv) by       |
| f) | i) be     | ii) was      | iii) being       | iv) been     |
| g) | i) finish | ii) finished | iii) finishing   | iv) finisher |
| h) | i) what   | ii) who      | iii) which       | iv) whose    |

**Q4. Rearrange the following words or phrases to make meaningful sentences.**

- I. the/ on/ forests/ the/ industry/ oil/depends
- II. do/ get/ the/ forests/ from/ what/ we/products/?
- III. the/Indian/English/exploited/the/farmers
- IV. pay/the/had to/poor farmers/hightaxes/very
- V. characterized / labyrinth of / decision / is / by / a / student life / choices, / and /conflicts
- VI. academic performance / a toll / course options / juggling / often takes / between/on youngsters/and
- VII. often aid / final decision / peers / you / a / can / in making
- VIII. listening / more / their / students are / peers / prone to / to
- IX. where you want / typically / where you are / to head next / as peers / coming from / know / and

**Q4.Given below are some instructions. Use then to complete the paragraph that follows.**

**HOW TO MAKE ORANGE AND GINGER CAKE**

- o Mix the butter and sugar until fluffy.
- o Add the eggs gradually
- o Add the flour, baking powder, milk powder and candied ginger
- o Add the vanilla extract with milk and mix well.
- o Pour into baking dish greased and lined with baking paper
- o Bake at 180`C for about 20-25 minutes.

# To make a delicious orange and ginger cake first of all, **(a)**.....until fluffy. Then **(b)**..... gradually. Flour, baking powder, milk powder and candied ginger are added after that. Vanilla extract **(c)**..... And **(d)** ..... for peculiar flavour. Baking dish **(e)** ..... with baking paper and material **(f)**..... it. The material **(g)** ..... for about 20-25 minutes and a sumptuous and fluffy cake is ready to eat.

## PROJECT:

Make a project as per the given specifications. This project will be an integration of your ALS project for term 1. Details are as follows:

PAGE 1	Particulars of the student in the order – Name, Class, Stream, Roll No, Subject, Session
PAGE 2	Choose a famous personality who has impacted the world in a positive way (from any area). Aesthetically decorated poster highlighting the contribution of the personality. It should be pictorial. Size should be half chart.
PAGE 3	Write a set of dialogues exchanged between that personality and a teenager like you. Size should be half chart. Decorate it befittingly.
PAGE 4	Paste a picture of yourself with your father/mother and write up in around 80 words describing your one of the fondest memories with him/ her.

## HISTORY

### PART A

#### ATTEMPT THE FOLLOWING QUESTIONS:

**Q1.Compare the urbanization process in Mesopotamia with modern urbanization trends. What similarities and differences can you identify?**

**Q2.“The Roman Empire was as much a cultural empire as a political one.” Discuss this statement with reference to Roman law, language, and architecture.**

**Q3.After recognition from the quirltai, discuss the military achievements of Genghis Khan.**

### PART B

#### Project work

History is one of the most important disciplines in school education. It promotes the acquisition and understanding of historical knowledge in depth across cultures.

The course of history in senior secondary classes is to enable students to know that history is a critical discipline, a process of enquiry, a way of knowing about the past rather than just a collection

of facts. The syllabus helps them to understand the process, through which a historian collects, chooses, scrutinizes and assembles different types of evidence to write history.

The syllabus in class-XI is organized around some major themes in world history. CBSE has decided to introduce a project in History as a part of regular studies in the classroom, as project work gives students an opportunity to develop higher cognitive skills. It takes students to a life beyond text books and provides them a platform to refer materials, gather information, analyse it further to obtain relevant information and decide what matter to keep and hence understand how history is constructed.

## **OBJECTIVES:**

### **Project work will help students:**

- To develop the skill to gather data from a variety of sources, investigate diverse viewpoints and arrive at logical deductions.
- To develop skill to comprehend, analyse, interpret, evaluate historical evidence, and understand the limitation of historical evidence.
- To develop 21st century managerial skills of coordination, self-direction, and time management.
- To learn to work on diverse cultures, races, religions, and lifestyles.
- To learn through constructivism-a theory based on observation and scientific study. To inculcate a spirit of inquiry and research.
- To communicate data in the most appropriate form using a variety
- To understand contemporary issues in context to our past.
- To develop a global perspective and an international outlook.
- To grow into caring, sensitive individuals capable of making informed, intelligent, and independent choices.
- Project reports should be Handwritten only. (Eco-friendly materials can be used by students)
- The Project Work needs to enhance cognitive, affective, and psychomotor domains in the learners.
- Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

### **Essential elements of project work:**

A good project includes the following sections:

•**Title page:** Centre the project title, and put your name, address and school.

•**Aim / Objective:** The introduction sets the Stage for your project. The aim includes an explanation of the topic you have chosen for the project and what you hoped to achieve.

•**Method:** This section describes how you did the study. Describe in detail the methodology used to collect your data or make your observations. Your report should include photographs or drawings ,newspaper cuttings, pie charts, tables of comparison.

•**Discussion:** This is the essence of your project The results and conclusions Should flow smoothly and logically from your data. •**Conclusion:** This section describes the findings and conclusion of the project. Briefly summarize your results. Be specific, do not generalize. Never introduce anything in the conclusion that has not been discussed.

► **Case study:** Students have to collect minimum 2-3 real life case studies.

► **Different forms of art :** Drawing, photographs ,collage of newspaper cuttings, articles, posters etc.

► **Acknowledgement:** You should always give credit to those who assisted you; they may be individuals, educational or research institutions.

► **Reference list:** Your reference list should include any documentation that is not your own (i.e. books, journal articles, include specific internet URLs).

► \*All the photographs and sketches should be labeled and related to the theme.

•Eco-friendly materials can be used by students

•Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

► **Teacher's Report**

► **Important Note: The project should be handwritten only (35-40 pages)**

**Every student has to compulsorily undertake any one of the following topic for the Project:**

### **SUGGESTIVE TOPICS FOR PROJECTS**

1. Facets of Industrialization in the sixteenth- eighteenth centuries.

2. Crusades: causes; rationale; events; outcomes; Holy Alliance

- 3.Ancient History in depth: Mesopotamia
- 4.Greek Philosophy and City States
- 5.Contributions of Roman Civilization
- 6.The spirit of Renaissance: Manifestation in art; Literature; Sculpture; Influence on Trading Community; Social Fabric; Philosophy; Political Values; Rational Thinking; Existentialism
- 7.Aspects of Development -South American States /Central American States
- 8.Different schools of thoughts- Realism: Humanism: Romanticism
- 9.Piecing together the past of Genghis Khan
- 10.Myriad Realms of Slavery in ancient, medieval, and modern world
- 11.History of Aborigines — America /Australia
- 12.Facets of Modernization — China /Japan/Korea

## MATHEMATICS

### PROJECT-

Every student will prepare one art integration project compulsorily as per following instructions-

(a) Students from roll no. 1 to 8 are required to create a colorful art integrating project on any one of the following topics:

"Sets,Relation And Function, , trigonometry linear inequalities geometric progression" based on real life situation with the help of neat diagrams on the chosen topic

(b) Students from roll no. 9 to 20 are required to create project on one of the following topics:

Permutation combination ,binomial theorem ,straight line ,conic section, 3 dimensional geometry ,probability

based on real life situation by drawing straight lines with the help of wires or sticks or threads "

(c) Students need to mention their name, class, roll number on first page, acknowledgement on second page and minimum three pages based on the project.

### Assertion and reason questions



In the following questions of Assertion (A) is followed by the statement of reason (R). Pick the correct option:

- Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
  - Both Assertion and reason are true but reason is not the correct explanation of R.
  - Assertion is true but reason is false.
  - Assertion is false but reason is true.
- Assertion: Number of non-empty subsets of the set  $\{2, 3, 5, 7, 11\}$  is 31.  
Reason: number of proper subsets of the set A with  $n(A) = k$  is  $2^k - 1$
  - Assertion: If A, B, C are respectively sets of parallelograms, rectangles and Squares. Then, B is subset of A and A is subset of C.  
Reason: A set A is called subset of another set B if all the elements of A are also in B.

### CASE BASED QUESTIONS

- Read the following and answer the questions given below :  
Leonhard Euler was the first mathematician to introduce the symbol  $i$  for the square root of  $-1$  with property  $i^2 = -1$ . He also called  $i$  as the imaginary unit.

By taking different powers of  $i$  answer the following questions :

(1) Find conjugate of  $i$ .

(ii) Find the sum of four consecutive integral powers of  $i$ .

(iii) Find the value of  $1 + i^2 + i^4 + i^6 + i^8 + \dots + i^{2n}$ , where  $n$  is an odd natural number. Also calculate  $i^{-169}$

- If A and B are two sets such that  $A = \{1, 2, 3\}$ ,  $B = \{3, 4, 5, 7, 8\}$   $U = \{1, 2, \dots, 10\}$

i) Find  $A \times B$

ii) Find  $A - B$  and Prove that  $A - B = A \cap B'$

iii) state and prove demorgan's law

iv) Find  $A \cup B$

- If  $A = \{1, 2, \{3, 4\}, 5\}$   $B = \{3, 4, 5, 6\}$  and  $U = \{1, 2, 3, \dots, 10\}$

i) find all subsets of A

- ii) Find all proper subsets of A
  - iii) Find elements that belong to A.
  - iv) prove distributive properties.
- 6) If  $B=3+7i$   $A=5-2i$
- i) Find multiplicative inverse of A and B.
  - ii) Find modulus of A and B
  - iii) Represent them in Argand plane
  - iv) Find their conjugate.

## PHYSICAL EDUCATION

1. Make a Scrap file of your game.

## PHYSICS

**TASK A:** Investigatory Project / Working Model / Activity

**Objective:** To apply scientific concepts learned in Physics to real-world scenarios by creating a project, working model, or hands-on activity. The work must demonstrate understanding, creativity, and application of Physics principles as per your class.

### **Important Dates:**

- Last Date to Submit Project Name for selection: 7 June 2025 (Share via

[https://docs.google.com/forms/d/e/1FAIpQLSctfqMlv3OnTlJnlKDfcsETmZ6vILypJc\\_28lddnEGK3MI0iQ/viewform?usp=sharing&ouid=111518018179510373975](https://docs.google.com/forms/d/e/1FAIpQLSctfqMlv3OnTlJnlKDfcsETmZ6vILypJc_28lddnEGK3MI0iQ/viewform?usp=sharing&ouid=111518018179510373975) )

- Approval/Rejection of Topic: By 10 June 2025

- Final Submission: 7 July 2025

### **Instructions:**

1. You must select ONE of the following formats:

- Investigatory Project (experiment-based)
- Working Model (demonstrable concept)
- Activity (interactive and conceptual)

2. Your submission must include a handwritten report of at least 3–4 pages, neatly presented.
3. You will receive feedback/approval on your chosen topic by 10 June 2025. Start working only after approval.
4. The report should follow the structure given below.

### **Report Format:**

Your handwritten report should include the following:

1. Title – Clear and concise
2. Index – Table of contents
3. Objective / Problem / Principle / Hypothesis
  - Define what you are investigating or building.
  - Mention the Physics principle involved.
4. Materials Required – List of all tools/items used
5. Procedure – Step-by-step explanation
6. Observations – Table/chart of results (if applicable)
7. Conclusion – What did you learn/confirm? Any calculations?
8. (Optional) Bibliography – Any sources referred

If you need help choosing a topic or developing your project idea, feel free to ask!

### **TASK B**

B 1. Prepare a formula sheet of lesson 2.

B2. Complete NCERT exercises 1 and 2 in numerical note book.

B3. Answer following questions in physics numerical note book

1. A car moving along a straight highway with a speed of 126 Km /h is brought to a stop within a distance of 200 m. What is the retardation of the car and how long does it take for a car to stop? (2)
2. On a two-lane road, Car A is travelling with a speed of 36 Km /h. Two cars B and C approach car A in opposite directions with a speed of 54 Km /h each. At a certain instant when the distance AB is equal to AC, both being 1 Km, B decides to overtake A before C does. What minimum acceleration of car B is required to avoid an accident? (2)

3. Choose  $x = 0$  m and  $t = 0$  s as the location and time of ball at the highest point, vertically downward direction to be the positive direction of  $x$  axis and give the signs of position, velocity and acceleration of the ball during its upward and downward motion. (2)
4. True or False  
A particle in 1 D with positive acceleration must be speeding up. (1)
5. Draw a displacement time graph for two trains moving in same direction with same speed on two parallel tracks. (1)
6. Assertion and Reason Question  
In following questions read both the statements and choose  
A. Both assertion and reason are true and reason is correct explanation of assertion.  
B. Both assertion and reason are true and reason is not correct explanation of assertion.  
C. Assertion is true and reason is not correct explanation of assertion.  
D. Assertion is true and reason is false. (1X2)
1. **Assertion** A body can move on a circular path without having acceleration.  
**Reason** In a uniform circular motion the linear speed of the body is not constant.
2. **Assertion** A body can move on a circular path without having acceleration.  
**Reason** In a uniform circular motion the linear speed of the body is not constant.

## INFORMATICS PRACTICES

### ***Basic Input / Output Programs***

- WAP to display HELLO on screen.
- Learning the concept of a **variable and constant**. Store a given value in a variable.
- WAP to join the value with the text given as a string.
- Write a program that asks the user for his name and then welcomes him. The output should look like this:  
*Enter your name : Saksham*  
*Hello Saksham*
- Write a program to take an integer value at run time and apply mathematical operations on it.
- Write a program to display the types of each variable to learn various **data types** in python.  
*Help: Print(type(name of the variable))*
- WAP to add, multiply, divide, subtract, integer division, raise to the power, modulus of two given numbers. (**Mathematical operators**)
- Write a program that prompts the user to input the length and the width of a rectangle and outputs the area and circumference of the rectangle. The formula is:  
Area = Length x Width  
Circumference =  $2 \times (\text{Length} + \text{Width})$
- WAP to calculate simple interest.  $P \times R \times T / 100$

10. Write a program which prompts the user to input principle, rate and time and calculate compound interest. The formula is :  

$$CI = P(1+R/100)^T - P$$
11. Write a program that prompts the user to input a Celsius temperature and outputs the equivalent temperature in Fahrenheit. The formula to convert the temperature is:  $F = 9/5 C + 32$  where F is the Fahrenheit temperature and C is the Celsius temperature

### ***If Clause***

12. Write a program to display the use of all relational operators.
13. WAP to print the greatest of two given numebrs.
14. WAP to print the greatest of three given numbers.
15. WAP to display the grades of the students with respect to the marks obtained by them in five different subjects also display their percentage and grades accordingly

Percentage	Grade
$\geq 90$	A+
$\geq 80$ & $< 90$	A
$\geq 70$ & $< 79$	B

16. Write a program to check whether a given number is odd or even
17. Write a program to print whether a given number is negative or positive
18. Write a program that prompts the user to input a year and determine whether the year is a leap year or not.  
 Leap Years are any year that can be evenly divided by 4. A year that is evenly divisible by 100 is a leap year only if it is also evenly divisible by 400.

*Example :*

1992	Leap Year
2000	Leap Year
1900	NOT a Leap Year
1995	NOT a Leap Year

### ***While loop & For Loop (all questions to be done using both looping methods)***

19. Write a program to print first n natural numbers
20. Write a program to print table of a given number
21. Write a program to accept an integer and display the factorial of that number. Eg: if the number is 3 then 3! is 6.
22. Write a program to accept an integer and check whether it is a prime number or not and display proper messages.
23. Write a program to accept an integer and check whether it is palindrome or not and display proper messages.
24. Write a program to accept an integer and check whether it is an Armstrong number or not and display proper messages.

25. Write a program to accept an integer and find the sum of digits of that number and display it
26. Write a program to accept an integer and display the reversed integer (store the reversed number in a variable). Eg: If the number is 267 then the reversed number is 762

**Note: Kindly do the work neatly in Practical File with the output to be drawn on blank side.**

## CHEMISTRY

Note: Do the homework in chemistry notebook.

- Do back exercise questions of Lesson 1 (Basic Concepts Of Chemistry)
- Do back exercise questions of Lesson 2 (Structure of Atom)
- Attempt all types of Objective Questions from NCERT Exemplar Class 11 (Chemistry)