



**MOUNT COLUMBUS SCHOOL**

**DAKSHINPURI, NEW DELHI-62**

**SESSION: 2025-26**

**WINTER VACATION HOLIDAY HOMEWORK**

**CLASS: IX**

**SUBJECT-ENGLISH**

**Q-1. Read the extract carefully and answer the questions that follow:**

“The strength of the tree exposed,  
The source, white and wet,  
The most sensitive, hidden  
For years inside the earth.”

- The word “*strength*” usually suggests firmness and stability. Explain why the poet deliberately presents strength as something vulnerable here.
- How does the contrast between “*strength*” and “*white and wet*” deepen the poem’s meaning?
- Identify **two poetic devices** used in the extract and explain how they intensify the theme of destruction.

**Q-2. Answer the following questions. Avoid narration; focus on interpretation.**

- In *The Fun They Had*, how does the absence of human interaction in future schools reflect a criticism of over-dependence on technology?
- The Snake and the Mirror* appears humorous on the surface. Explain how humour is used to expose the narrator’s vanity and fear.
- In *The Lost Child*, why does the child’s desire for material objects disappear once he is separated from his parents?

**Q-3. Answer the following questions in detail.**

- The Little Girl* explores emotional distance within families. Discuss how Kezia’s understanding of her father evolves and what this reveals about parental authority.
- Compare the journeys of Santosh Yadav and Maria Sharapova, focusing on how discipline, sacrifice, and determination shape their success.
- In *If I Were You*, analyse how Gerrard uses psychological intelligence to overpower a criminal without physical force.

**Q-4. Each sentence contains one grammatical error. Identify and correct it.**

- Neither of the two arguments are convincing enough.
- She said that she will inform me once she reaches home.
- Hardly had the teacher entered the class when the students stood already.

**Q-5. Use appropriate determiners, modals, or verb forms.**

- Very \_\_\_ people are capable of questioning their own beliefs.
- She behaves as if she \_\_\_ (possess) absolute authority.
- You \_\_\_ have trusted him without verification.
- There is \_\_\_ little hope of reconciliation after such betrayal.
- By the time we arrived, the train \_\_\_ already \_\_\_ (depart)

**Q-6. Rewrite the following sentences in indirect speech.**

- He said, “Had I realised the danger, I would not have acted so carelessly.”
- She said to him, “Why were you ignoring my advice?”
- The teacher said, “Do not submit your assignments after Monday.”
- He said, “I was planning to leave when you interrupted me.”
- She said, “What a rare opportunity this is!”

**Q-7. Choose the correct verb.**

- A number of students \_\_\_ absent today.
- Each of the players \_\_\_ responsible for the defeat.
- The quality of these products \_\_\_ deteriorated over time.
- More than one solution \_\_\_ been suggested.
- The news \_\_\_ shocking to everyone.

## SUBJECT-HINDI

निम्नलिखित प्रश्नों के उत्तर लिखिए

1. लेखक कुँ से चिट्ठी निकालने का काम टाल सकता था, परन्तु उसने ऐसा नहीं किया। 'स्मृति' कहानी से उसके चरित्र की कौन-सी विशेषताएँ उभरकर आती हैं?
2. टीलियामुरा कस्बे में लेखक का परिचय किन दो प्रमुख हस्तियों से हुआ? समाज-कल्याण के कार्यों में उनका क्या योगदान था?
3. रैदास के प्रभु में वे कौन-सी विशेषताएँ हैं जो उन्हें अन्य देवताओं से श्रेष्ठ सिद्ध करती हैं?
4. वाद्ययंत्रों की ध्वनियों के अध्ययन के द्वारा रामन् क्या करना चाहते थे?
5. पाठ के संदर्भ में उनाकोटी में स्थित गंगावतरण की कथा को अपने शब्दों में लिखिए।
6. कवि मनुष्य से क्या अपेक्षा करता है? 'अग्नि पथ' कविता के आधार पर लिखिए।
7. दुख के अधिकार पाठ के आधार पर बताइए कि लेखक ने उस रोती हुई महिला के दुख का अनुमान कैसे लगाया?
8. सर चंद्रशेखर वेंकट रामन् को समय-समय पर किन-किन पुरस्कारों से सम्मानित किया गया?
9. कभी-कभी दृढ़ संकल्प के साथ तैयार की गई योजना भी प्रभावी नहीं हो पाती है। कुँ से चिट्ठी निकालने के लिए लेखक द्वारा बनाई गई पूर्व-योजना क्यों सफल नहीं हुई? 'स्मृति' पाठ के आधार पर बताइए।
10. त्रिपुरा के घरेलू उद्योगों पर प्रकाश डालते हुए अपनी जानकारी के कुछ अन्य घरेलू उद्योगों के विषय में बताइए?
11. अपने मित्र के पिता के सीमा पर शहीद हो जाने एक समाचार प्राप्त होने पर अपनी भावनाएँ व्यक्त करते हुए मित्र को संवेदना पत्र लिखिए।
12. अपनी बहन को पत्र लिखकर योगासन करने के लिए प्रेरित कीजिए।
13. गाँव से कुछ दूरी पर रेलगाड़ी दुर्घटनाग्रस्त हो गई है, दो मित्र वहाँ पीड़ितों की सहायता के लिए जाना चाहते हैं। उनके मध्य हुए संवाद का लेखन कीजिए।
14. अपने-अपने जीवन लक्ष्य के बारे में दो मित्रों की बातचीत को संवाद रूप में लिखिए।
15. 'महानगरीय जीवन-एक वरदान या अभिशाप' और 'बदलती दुनिया में पीछे छूटते जीवन मूल्य' निम्न विषयों पर ८० शब्दों में अनुच्छेद लिखिए।

## SUBJECT-MATHEMATICS

Q 1. The area of a rectangular cardboard sheet is  $(3x^2 + x - 2)$  square units. If width is  $(1 + x)$  units, then what is the length of the cardboard?

Q 2. Two students in class of IX named Riya and Ravya were assigned a polynomial by their maths teacher. The polynomial was  $p(x) = x^2 - 5x + 6$ .

They were asked to express this polynomial as product of factors. Both applied factorisation by splitting the middle term and got different answers.

Riya's answer:  $(x - 3)(x - 2)$

Ravya's answer:  $(x + 3)(x - 2)$

(i) Find out whose answer is correct and show factorisation.

(ii) Find the value of  $p(-1)$ .

Q 3. Factorise each of the following expressions by splitting the middle term:

(i)  $m^2 - 7m - 30$

(ii)  $7x^2 + 25x - 12$

(iii)  $1 - 18y - 63y^2$

(iv)  $x(12x + 7) - 10$

Q4. Find the value of  $k$ , if  $x=1, y=1$  is a solution of  $9kx+11ky=20$ .

Q5. The cost of book ( $x$ ) exceeds twice the cost of pen ( $y$ ) by 10 rupees. Express this statement as linear equation.

Q6. Ravi took a cab to go to his office, The cab fare is as follows:

For the first kilometre, the fare is ₹50 and for the subsequent distance it is ₹10 per kilometre. Take the distance covered as  $x$  km and total fare as  $y$ .

Form a linear equation in two variables. If Ravi covered 7 km then how much fare he has to pay?

Q7. A conical tent is 10 m high and the radius of its base is 24 m. Find:

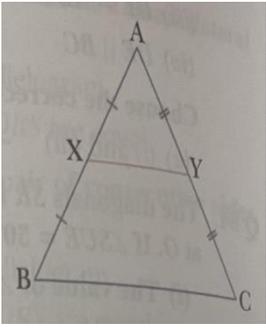
(i) slant height of the tent

(ii) cost of the canvas required to make the tent, if the cost of  $1 \text{ m}^2$  canvas is ₹70.

Q8. The radius and height of a right circular cone are in the ratio  $4 : 3$ . If the area of the base of the cone is  $154 \text{ cm}^2$ , find its curved surface area.

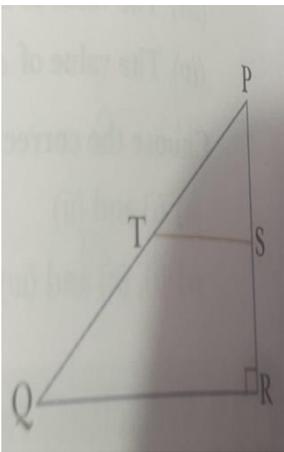
Q9. Sheeza has a piece of canvas whose area is  $553 \text{ m}^2$ . She uses it to make a conical tent with a base diameter of 14 m. Assuming all stitching margins and wastage incurred while cutting amounts  $3 \text{ m}^2$ , find the volume of the air capped in the conical tent.

Q10. In the adjoining figure,  $X$  and  $Y$  are mid-points of sides  $AB$  and  $AC$  respectively of  $\triangle ABC$ . If  $BC = 6$  cm,  $AB = 7.4$  cm and  $AC = 6.4$  cm, then find the perimeter of trapezium  $XBCY$ .



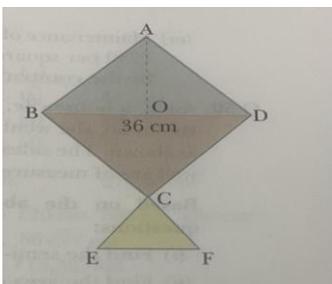
Q11. In  $\triangle ABC$ ,  $AB = 5$  cm,  $BC = 8$  cm and  $CA = 7$  cm. If  $D$  and  $E$  are respectively the mid-points of  $AB$  and  $BC$ , determine the length of  $DE$ .

Q12. In the right  $\triangle PQR$ ,  $T$  is the midpoint of  $PQ$  and  $TS \parallel QR$ . If  $QR = 16$  cm,  $RP = 12$  cm, then find the area of  $\triangle PST$ .

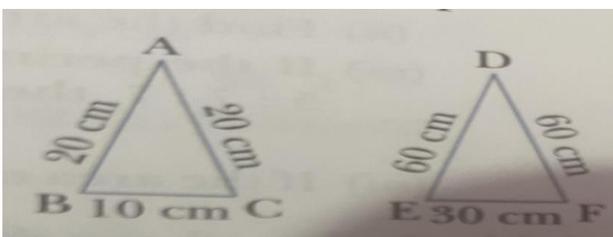


Q13. A floral design on a floor is made up of 16 triangular tiles, each having sides 10 cm, 34 cm and 36 cm. Find the approximate cost of polishing the tiles at the rate of ₹2.50 per  $\text{cm}^2$ .

Q14. A kite in the shape of a square with each diagonal 36 cm and having a tail in the shape of an isosceles triangle of base 10 cm and equal side 6 cm, is made of three different shades as shown in the figure. How much paper of each shade has been used in it? [Take  $\sqrt{11} = 3.31$ ]



Q15. Find the ratio of the area of triangle  $ABC$  and area of triangle  $DEF$ .



## SUBJECT-SCIENCE

**Instructions: Each section of Biology, Chemistry and Physics has 5 questions. Solve all these 15 questions in your physics notebook. Make sure to label each section clearly.**

### BIOLOGY

1. Tabulate the differences between three types of muscles on the basis of location, characteristics and function.
2. Name the following:
  - a. Tissue that store fat in our body
  - b. Connective tissue with fluid matrix
  - c. Tissue present in the brain
  - d. Tissue that present in lining of kidney tubule
  - e. Tissue that present in vascular bundle
3. What is a meristematic tissue? State its different types. Show their locations in a diagram of a plant body. Give classification of meristems.
4. What will happen if chloroplast is taken out of the cell and illuminated?
5. Draw a well labelled diagram of-Animal and plant cell, nervous tissue, meristematic tissues, simple permanent tissues

### CHEMISTRY

1. Atoms of most elements are not able to exist independently. Atoms of same elements or different elements combine to form molecules and ions. (atoms exist as molecules or ions) Atoms of the same element or of different elements can join together to form molecules. The molecules of an element are constituted by the same type of atoms. Atoms of different elements join together in definite proportions to form molecules of compounds.

(i) What is the ratio between masses of carbon and oxygen in  $\text{CO}_2$ ?

- (a) 12:32                      (b) 12:16                      (c) 24:16                      (d) 24:32

(ii) Which of the following statements is not true about an atom.

- (a) Atoms are not able to exist independently.  
(b) Atoms are the basic unit from which molecules and ions are formed.  
(c) Atoms are always neutral in nature.  
(d) Atoms aggregate in large numbers to form the matter that we can see, feel or touch.

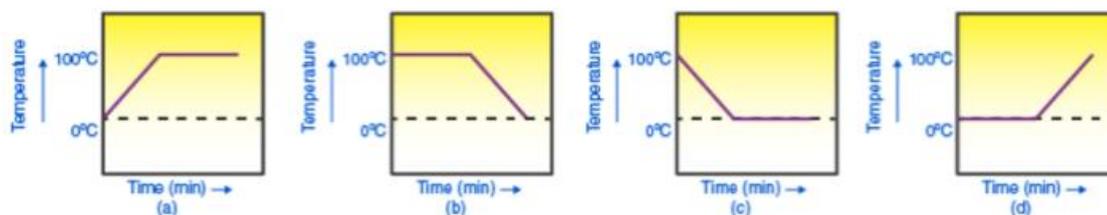
(iii) Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3 gram of hydrogen gas?

- (a) 23g                      (b) 12g                      (c) 24g                      (d) 16g

(iv) Select the atom which forms triatomic molecule.

- (a) Hydrogen                      (b) Oxygen                      (c) Chlorine                      (d) Bromine

2. He measures the temperature of the content of the beaker as a function of time. Which of the following would correctly represent the result? Justify your choice



3. Calculate the molecular mass of the following: (i)  $\text{HNO}_3$  (ii)  $\text{CH}_3\text{COOH}$

4. a. What are isobars. give examples

b. Read the table and answer the questions below

Element	A	B	C	D	E
Mass no.	1	7	14	40	40
Atomic no	1	3	7	18	20

i. Select a pair of isobars from the table.

ii. Which two sub- atomic particles are equal in number in neutral atoms

5. Give reasons for the following statements.

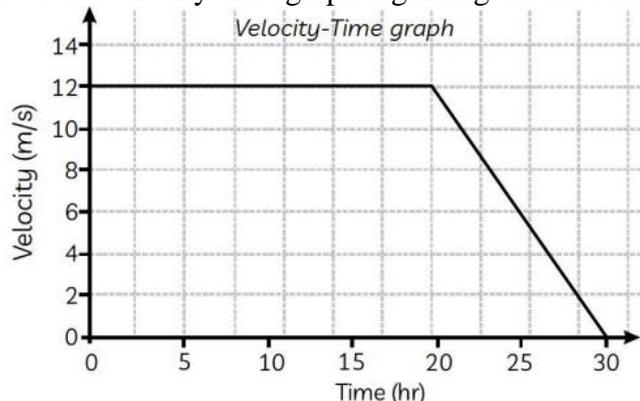
- a. A small volume of water in a kettle can fill a kitchen with steam

- b. Evaporation causes cooling.
- c. Sponge though compressible is a solid.

### PHYSICS

1. Read the following information and answer the questions based on information and related studied concepts.

Ritesh was driving car to his office. When suddenly a boy came in between the road, he applied brakes suddenly to save the child and the car came to the rest. The whole scenario was observed by Sita and she draws the velocity-time graph regarding the situation.



- (a) Calculate the displacement of the car after 20 seconds?
  - (b) After deceleration, how far does the car go?
  - (c) Describe the motion of the car from 0 s to 30 s
2. If two masses in the ratio 3: 5 are accelerated by forces in the ratio 5 : 3. Find the ratio of acceleration produced.
3. A 4 kg object is moving along a frictionless surface with a constant velocity of 2 m/s. Determine the amount of force required to maintain its state of motion.
4. a. Write the difference between G and g.  
 b. Write the difference between mass and weight.  
 c. The Weight of the body at a certain place is 30 N. The acceleration due to gravity at that point is  $10 \text{ m/s}^2$ . Find out the mass and weight of the object at the place where acceleration due to gravity is zero?
5. When loading a truck, a man lifts boxes of 100 N each through a height of 1.5 m.
- (a) How much work does he do in lifting one box?
  - (b) How much energy is transferred when one box is lifted?
  - (c) If the man lifts 4 boxes per minute, at what power is he working? ( $g = 10 \text{ m s}^{-2}$ )

## SUBJECT-SOCIAL SCIENCE

### I. ASSIGNMENT

Instructions: Write answers neatly in your Social Science notebook.

#### Section A: Very Short Answer Questions

1. Who was Adolf Hitler?
2. Name the treaty that humiliated Germany after World War I.
3. What are Fundamental Rights?
4. Which Act enabled Hitler to become a dictator?
5. Which Fundamental Right prohibits child labour?
6. Name the institution that protects Fundamental Rights in India.

#### Section B: Short Answer Questions

7. Explain any three reasons responsible for the rise of Hitler in Germany.
8. Describe any three features of the Right to Equality guaranteed by the Indian Constitution.
9. How did the Enabling Act destroy democracy in Germany? Explain any three points.
10. Why are Fundamental Rights essential for the successful functioning of a democracy? Give three reasons.
11. "Absence of democratic rights leads to dictatorship." Explain this statement with reference to Nazi Germany.
12. Explain any three freedoms included under the Right to Freedom.

#### Section C: Assertion–Reasoning Question

13. Assertion (A): Hitler was able to establish a dictatorship in Germany.  
Reason (R): The Enabling Act allowed him to rule without the approval of Parliament.

Choose the correct option:

- a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

#### Section D: Case Study Based Question

14. Read the passage carefully and answer the questions:  
In a democracy, citizens enjoy Fundamental Rights that protect them from the misuse of power by the government. In Nazi Germany, these rights were taken away. Political parties were banned, freedom of expression was suppressed, and opponents were sent to prisons and concentration camps.
  - a) Name one Fundamental Right mentioned in the passage.
  - b) Mention one democratic freedom that was denied in Nazi Germany.
  - c) How do Fundamental Rights protect citizens from misuse of power?
  - d) Write one lesson that present-day democracies should learn from Nazi Germany.
15. Read the passage carefully and answer the questions:

After the First World War, Germany faced severe economic and political instability. The Treaty of Versailles imposed harsh conditions on Germany, including heavy war reparations and loss of territories. The Weimar Republic, established after the war, failed to provide stable governance. Unemployment and inflation increased sharply during the Great Depression of 1929.

Adolf Hitler, leader of the Nazi Party, promised to restore Germany's pride and provide employment. He used aggressive nationalism, powerful speeches, and widespread propaganda to gain popular support. In 1933, Hitler was appointed Chancellor of Germany. Soon after, the Enabling Act was passed, giving him the power to rule without the consent of Parliament. Democratic institutions were dismantled, political opponents were arrested, and Germany was turned into a totalitarian state.

- Q1. Name the treaty that weakened Germany after the First World War.
- Q2. Identify any two economic problems faced by Germany during the Weimar Republic.
- Q3. How did Hitler gain popular support among the German people? Mention any two methods.
- Q4. What was the Enabling Act of 1933? State its significance.
- Q5. How did Hitler's policies affect democracy in Germany? Explain one point.
- Q6. What lesson should modern democracies learn from the experience of Nazi Germany?

## **II. SOCIAL SCIENCE LAB MANUAL – COMPLETE ALL ASSIGNMENT INCLUDING MAP WORK.**

### **III. ACTIVITY: NEWSPAPER REPORT**

Imagine you are a reporter in **Germany in 1933**. Write a **short newspaper report on A4 size sheet and paste in your notebook** (120–150 words) on: **“The Passing of the Enabling Act and Its Impact on Democracy”**

Include:

- Date
- Headline
- Effects on Parliament
- Public reaction

## SUBJECT-ARTIFICIAL INTELLIGENCE

Overview

Dear Students,

During the winter vacation, you need to complete the following AI work in THREE parts:

1. Google Colab Notebook (Digital submission via email)
2. Physical Practical File (Hard copy with Python programs)
3. Theory Questions (Written in the practical file)

All three components are mandatory and will be evaluated as part of your continuous assessment.

### **PART A: Reference Material**

Reference Colab Notebook:

<https://colab.research.google.com/drive/14G-CFENkutP1nOT48u4omJjTruO4FHJ-?usp=sharing>

- Use this notebook as a reference only (do not edit this link)
- You must create your own copy and write all programs yourself

### **PART B: Google Colab Notebook Submission**

#### **Step 1: Create Your Notebook**

- Open the reference link above
- Go to **File** → **Save a copy in Drive** to create your own copy
- Rename your notebook as: **Class9\_AI\_YourName\_RollNo.ipynb**

#### **Step 2: Content Requirements**

- Include minimum 15 Python programs as per CBSE Unit 5 suggested programs
- Programs should cover:
  - Input/output operations
  - Variables and data types
  - Operators (arithmetic, relational, logical)
  - Conditional statements (if-else)
  - Loops (for, while)
  - Lists and basic operations

#### **Step 3: Format for Each Program**

For every program, include:

- Problem statement (as a text/markdown cell)
- Python code (in a code cell)
- Output (run the code and keep output visible)

#### **Step 4: Before Submission**

- Add your name, class, section, and roll number at the top of the notebook (in a text cell)
- Run all cells from top to bottom to ensure no errors

## Step 5: Sharing Instructions

1. Click Share button in Google Colab
2. Set access to: "Anyone with the link – Viewer"
3. Copy the notebook link
4. Email to:
5. naushad.mtcolumbus@gmail.com
6. Email Subject: **Class 9 AI Colab Notebook – Your Name – Roll No**

## PART C: Physical Practical File

### File Structure

Your practical file should contain the following sections in order:

#### 1. Cover Page

Include:

- School name and logo
- Title: "Class 9 Artificial Intelligence – Practical File"
- Academic Year: 2025-26
- Student Name
- Class, Section, Roll Number
- Teacher's Name: Mr. Naushad

#### 2. Index Page

Create a table with columns:

S.No.	Program/Topic Name	Page No.
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List all 15 programs in order

#### 3. Python Programs (Minimum 15 Programs)

Format for Each Program Page:

- Program Number and Title
- Aim/Problem Statement
- Python Code (neatly written)
- Output:
  - Screenshot pasted, OR
  - Typed/printed output, OR
  - Neatly handwritten output

Sample Programs to Include:

1. Program to display "Hello, World!"
2. Program to accept two numbers and display their sum
3. Program to calculate area and perimeter of a rectangle
4. Program to convert temperature from Celsius to Fahrenheit
5. Program to check if a number is even or odd

6. Program to find the largest of three numbers
7. Program to check if a year is leap year or not
8. Program to calculate simple interest
9. Program to print multiplication table of a number
10. Program to print first n natural numbers using loop
11. Program to calculate factorial of a number
12. Program to check if a number is prime or not
13. Program to create a list and display its elements
14. Program to find sum of all elements in a list
15. Program to find the largest element in a list

#### **4. Theory Questions Section**

Create a new section titled "Theory Questions" after all programs

Write answers to all 15 theory questions (given below)

#### **Presentation Guidelines**

- Use A4 size sheets only
- Write in blue or black pen only
- Maintain proper margins (left: 1.5 inch, others: 1 inch)
- Number all pages at bottom center
- Underline all headings
- Keep the file neat and clean (no cutting/overwriting)
- Get the file spiral bound or properly stapled

#### **PART D: Theory Questions (Write in Practical File)**

##### **Section A: Employability Skills (5 Questions)**

###### **1. Communication Skills**

Define effective communication and explain why listening is an important component of communication skills.

###### **2. Self-Management Skills**

What is self-management? List three strategies to improve your time management skills.

###### **3. ICT Skills**

Explain the difference between data privacy and data security. Why are both important in the digital age?

###### **4. Entrepreneurial Skills**

What qualities make a successful entrepreneur? Name any two entrepreneurs you admire and explain why.

###### **5. Green Skills**

How can you contribute to environmental sustainability in your daily life? List three practical actions you can take.

##### **Section B: Subject Specific Skills (10 Questions)**

###### **Unit 1: AI Reflection, Project Cycle and Ethics**

6. Name and explain the six stages of the AI Project Cycle.

7. What is the difference between rule-based modeling and learning-based modeling in AI? Give one example of each.

8. Explain what AI bias is and why it is an ethical concern. Provide one real-world example.

9. What are AI ethics? Discuss any two ethical principles that should guide AI development.

#### Unit 2: Data Literacy

10. What is data literacy? Why is it important for students to develop data literacy skills in today's world?

11. Differentiate between qualitative data and quantitative data with examples.

12. List three different types of graphs used for data visualization and explain when each type is most appropriate.

#### Unit 3: Math for AI

13. Explain how statistics is used in AI applications. Give two real-world examples (such as weather forecasting or sports).

14. What is probability? Calculate the probability of getting an even number when rolling a standard six-sided die.

#### Unit 4: Introduction to Generative AI

15. What is Generative AI? How is it different from conventional AI? Provide two examples of Generative AI tools.

#### Answer Guidelines

- Write answers in 3-5 sentences per question
- For calculation-based questions, show all steps clearly
- Write neatly and legibly
- Use proper headings for each question

# SUBJECT-INFORMATION TECHNOLOGY

## Practical Questions

(As per CBSE curriculum)

### Instructions

- Attempt **ALL** questions
- Use **LibreOffice Writer, Calc and Impress**
- Maintain neatness and proper file names
- Attach printouts/screenshots wherever required

## SECTION A: DIGITAL DOCUMENTATION (WRITER)

### Q1. Document Formatting

Create a document on the topic “**Role of Information Technology in Education**” and apply:

- Heading in **Bold**, font size 16
- Paragraph font size 12
- Alignment: Justified
- Line spacing: 1.5
- Apply *Italic* to any three important words  
Save the file as **IT\_Education\_Class9.odt**

### Q2. Lists and Page Layout

Create a document titled “**Advantages of Computers**” and:

- Use **Bulleted list**
- Set page margins to *Normal*
- Insert a **footer** with your name and class

### Q3. Table Creation

Insert a **3 × 3 table** showing:

- Input Devices
  - Output Devices
  - Storage Devices
- Enter at least **two examples** in each column.

## SECTION B: ELECTRONIC SPREADSHEET (CALC)

### Q4. Student Marks Sheet

Create a spreadsheet for **5 students** showing marks in:

- English
  - Maths
  - Science
- Use formulas to calculate **Total** and **Average**.

### Q5. Spreadsheet Formatting

In the above sheet:

- Apply **Bold** to headings
- Adjust column width
- Apply **cell borders**
- Sort data in **ascending order of Total marks**

## Q6. Chart Creation

Create a spreadsheet showing **Monthly Expenses** and:

- Insert any **one chart** (Bar / Pie / Column)
- Add a suitable chart title

## SECTION C: DIGITAL PRESENTATION (IMPRESS)

### Q7. Presentation Creation

Create a presentation on “**Cyber Safety**” with:

- Minimum **5 slides**
- One title slide
- One slide with bulleted points
- One slide with an image

### Q8. Slide Effects

Apply:

- Slide transition
- Text animation

Save the presentation as **Cyber\_Safety\_Class9.odp**

## SECTION D: KEYBOARDING SKILLS

### Q9. Keyboarding Knowledge

Answer the following:

1. What is touch typing?
2. Write **two advantages** of good keyboarding skills.
3. Name the **home row keys**.

### Q10. Keyboard Shortcuts practice

List 15 keyboard shortcuts you use most frequently.

Example

1. Copy - Ctrl+C

