



**FLORENCE INTERNATIONAL SCHOOL**  
**(Sr Secondary Affiliated with CBSE)**  
**ISO 21001:2018**

# **SUMMER**

# **HOLIDAY HOMEWORK**

**Grade - 12**

## Work instructions for Project Files

- Prepare a handwritten investigatory project file.
- Use A4-size ruled sheets.
- Attach relevant diagrams, tables, and graphs. Include real observations/photographs (if possible).
- Maintain neatness and proper headings.

## PROJECT FILE FORMAT

Cover Page

Title of project

Student name

Class & Section

Roll number

School name

**2. Certificate**

**3. Acknowledgement**

**4. Index**

**5. Introduction**

Basic theory of the topic

Importance in daily life

**6. Aim**

**7. Materials Required**

**8. Theory: Scientific explanation with chemical principles.**

**9. Procedure: Step-by-step method.**

**10. Observations**

**11. Calculations (if applicable)**

**12. Result**

**13. Conclusion**

**14. Precautions**

**15. Bibliography**

## IMPORTANT GUIDELINES

- Project must be original (no copy-paste)
- Data should be realistic and logical
- Proper chemical equations wherever required
- Include graphs/charts for analysis
- Viva questions will be based on your project
- Submission must be on time
- Maintain scientific language in science projects

## Chemistry

**Q 1.** – Project Files to be prepared on the following topics:

**1. Anika:** Study of the presence of oxalate ions in guava fruit at different stages of ripening.

**2. Aradia:** Study of the quantity of casein present in different samples of milk.

**3. Tiwari:** Preparation of soybean milk and its comparison with natural milk (curd formation, temperature effect, etc.)

**4. Aryan:** Study of the effect of potassium bisulfite as a food preservative under different conditions.

**5. Kunal:** Study of the digestion of starch by salivary amylase and the effect of pH and temperature.

**6. Saksham:** Comparative study of the rate of fermentation of wheat flour, gram flour, potato juice, carrot juice, etc.

**7. Vansh:** Extraction of essential oils from saunf, ajwain, or Elaahi.

**8. Rhythm & Deepyank:** Study of common food adulterants in daily food items.

**Q 2. Complete the Following Worksheet in the Chemistry Notebook:**

### Section A – MCQs

1. The unit of rate constant for a first-order reaction is:

- a)  $\text{mol L}^{-1} \text{s}^{-1}$
- b)  $\text{s}^{-1}$
- c)  $\text{L mol}^{-1} \text{s}^{-1}$
- d)  $\text{mol}^2 \text{L}^{-2} \text{s}^{-1}$

2. The reaction whose rate depends on concentration of one reactant only is:

- a) Zero order
- b) First order
- c) Second order
- d) Third order

3. The half-life period of a first-order reaction:

- a) Depends on initial concentration
- b) Is inversely proportional to concentration
- c) Is independent of initial concentration
- d) Becomes zero at completion

4. Which of the following undergoes SN1 reaction most readily?

- a)  $\text{CH}_3\text{Cl}$
- b)  $\text{CH}_3\text{CH}_2\text{Cl}$
- c)  $(\text{CH}_3)_3\text{CCl}$
- d)  $\text{C}_6\text{H}_5\text{Cl}$

5. A catalyst increases the rate of reaction by:

- a) Increasing activation energy
- b) Decreasing activation energy
- c) Changing equilibrium constant
- d) Increasing enthalpy change

6. Which reagent is used in Wurtz reaction?

a) Zn/HCl

b) Na/dry ether

c) KOH(aq)

d) Mg/dry ether

7. Aryl halides are less reactive towards nucleophilic substitution because:

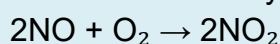
a) C–X bond is weak

b) Halogen is highly reactive

c) C–X bond has partial double bond character

d) Carbon atom is  $sp^3$  hybridised

8. The molecularity of the reaction:



is:

a) 1

b) 2

c) 3

d) 4

### Section B – Assertion–Reason Questions

Choose the correct option:

A. Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. Assertion is true, but Reason is false.

D. Assertion is false, but Reason is true.

1. Assertion: Rate constant of a reaction increases with temperature.

Reason: Activation energy decreases with an increase in temperature.

2. Assertion: Tertiary alkyl halides prefer the  $SN_1$  mechanism.

Reason: Tertiary carbocations are relatively stable.

3. Assertion: Half-life of a first-order reaction is constant.

Reason: It is independent of initial concentration.

4. Assertion: Chlorobenzene is less reactive than chloroethane towards hydrolysis.

Reason: The C–Cl bond in chlorobenzene has partial double bond character.

### Section C – Short Answer Questions:

1. Define:

a) Rate of reaction

b) Order of reaction

2. What is activation energy? How does a catalyst affect it?

3. Differentiate between  $SN_1$  and  $SN_2$  reactions.

4. Write the IUPAC names of:

a)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$

b)  $\text{C}_6\text{H}_5\text{Br}$

5. Why are aryl halides less reactive towards nucleophilic substitution reactions?

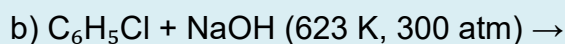
6. State two characteristics of first-order reactions.

### Section D – Short Answer Questions:

1. For a first-order reaction, derive the expression for the half-life period.

2. Complete the following reactions:

a)  $\text{CH}_3\text{CH}_2\text{Br} + \text{KOH(aq)} \rightarrow$



3. Explain the collision theory of chemical reactions.

4. Differentiate between:

a) Molecularity and Order of reaction

b) Haloalkanes and Haloarenes

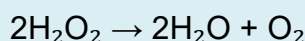
(Any three points)

5. The rate constant for a first-order reaction is  $2.303 \times 10^{-2}\text{ s}^{-1}$ . Calculate its half-life.

### Section E – Case Study Questions:

Case Study 1: Chemical Kinetics

Hydrogen peroxide decomposes slowly to form water and oxygen. The reaction becomes faster in the presence of manganese dioxide ( $MnO_2$ ).

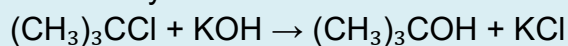


#### Questions:

1. What is the role of  $MnO_2$  in the reaction?
2. Define catalyst.
3. How does temperature affect the rate of reaction?
4. Why is decomposition of  $H_2O_2$  considered a chemical reaction?

### Case Study 2: Haloalkanes and Haloarenes

A student treated tert-butyl chloride with aqueous KOH and observed rapid formation of tert-butyl alcohol.



#### Questions:

1. Name the type of reaction involved.
2. Which mechanism is followed by tert-butyl chloride?
3. Why does tert-butyl chloride react faster than ethyl chloride?
4. Write the structure of tert-butyl alcohol.

### Section F – Long Answer Questions:

1. a) Explain the Arrhenius equation.
- b) Discuss the effect of temperature on the rate constant.
- c) A reaction has activation energy  $50\text{ kJ mol}^{-1}$ . Explain the significance of activation energy in chemical reactions.
2. a) Explain the Wurtz reaction with a suitable equation.
- b) Describe the preparation of chlorobenzene from benzene.
- c) Why do vinyl halides not undergo nucleophilic substitution reactions easily?

## Maths

**Q 1.** Project Files to be prepared on the following topics:

**Aryan** - Relation and function (Introduction and definition of relations and functions, types of relations, types of functions (one-one, many-one, onto, into, bijective), domain, codomain and range, composition of functions, inverse functions, binary

operations, mapping diagrams, graphs of functions, important formulas and properties, solved examples, applications in daily life and conclusion.)

**Aditya** - Matrices (Introduction and history of matrices, definition and notation, order of matrix, types of matrices (row, column, square, diagonal, identity, zero matrix etc.), operations on matrices, transpose of matrix, symmetric and skew-symmetric matrices, inverse of matrix, properties of matrices, solved examples, applications in engineering and computer science, interesting facts and conclusion.)

**Dipyank** - Determinants (Introduction and definition of determinants, properties of determinants, minors and cofactors, expansion of determinants, area of triangle using determinants, consistency of equations, applications in solving linear equations, important formulas, solved examples and conclusion.)

**Anika** - Inverse Trigonometric function (Introduction and meaning of inverse trigonometric functions, principal values, domain and range, graphs of inverse trigonometric functions, properties and formulas, identities related to inverse trigonometric functions, solved examples, applications and conclusion.)

**Rhythm** - Continuity and differentiability (Introduction to continuity and differentiability, definition of continuous functions, algebra of continuous functions, differentiability and derivatives, relation between continuity and differentiability, derivatives of composite and inverse functions, graphical interpretation, important formulas, solved examples, applications and conclusion.)

**Aradia** - Matrices (Introduction and history of matrices, definition and notation, order of matrix, types of matrices (row, column, square, diagonal, identity, zero matrix etc.), operations on matrices, transpose of matrix, symmetric and skew-symmetric matrices, inverse of matrix, properties of matrices, solved examples, applications in engineering and computer science, interesting facts and conclusion.)

**Saksham** - Continuity and differentiability (Introduction to continuity and differentiability, definition of continuous functions, algebra of continuous functions, differentiability and derivatives, relation between continuity and differentiability, derivatives of composite and inverse functions, graphical interpretation, important formulas, solved examples, applications, and conclusion.)

And

**"Mathematics is not just limited to textbooks but plays an important role in our daily life."** Explain this statement in two to three pages with examples. (For all students in the same practical file)

**Q 2.** Make a revised worksheet of all Trigonometric identities, differentiability, and integration formulae (take the help of your test book).

**Q 3.** Do lab manual activities from 1 to 10.

**Q.4.** Complete the Following Worksheet in the mathematics notebook:

## SECTION A

### SECTION A

1. Let set  $X = \{1, 2, 3\}$  and a relation  $R$  is defined in  $X$  as :  $R = \{(1, 3), (2, 2), (3, 2)\}$ , then

maximum ordered pairs which should be added in relation R to make it reflexive and symmetric are

- (a)  $\{(1,1), (2,3), (1,2)\}$  (c)  $\{(3,3), (3,1), (1,2)\}$   
(b)  $\{(1,1), (3,3), (3,1), (2,3)\}$  (d)  $\{(1,1), (3,3), (3,1), (1,2)\}$

2. If A is a square matrix such that  $A^2=A$ , then  $|I - A|^3 + A$  is equal to

- (a) I (b) 0 (c) I-A (d) I+A

3. V is a matrix of order 3 such that  $|\text{adj } V| = 7$ . Which of these could be  $|V|$

- (a) 49 (b) 7 (c) 7 (d) 37

4.  $\sin [\pi/3 + \sin^{-1} 1/2]$  is equal to

- (a) 1 (b)  $1/2$  (c)  $1/3$  (d)  $1/4$

5. If  $R = \{x, y; x, y \in Z, x^2 + y^2 \leq 4\}$  is a relation in set Z, then domain of R is

- (a)  $\{0, 1, 2\}$  (b)  $\{-2, -1, 0, 1, 2\}$  (c)  $\{0, -1, -2\}$  (d)  $\{-1, 0, 1\}$

6. What is the domain of the function  $\cos^{-1}(2x-3)$ ?

- (a)  $[-1, 1]$  (b)  $(1, 2)$  (c)  $(-1, 1)$  (d)  $[1, 2]$

7. If A is a square matrix of order 3 and  $|A|=6$ , then the value of  $|\text{adj } A|$  is :

- (a) 6 (b) 36 (c) 27 (d) 216

8. If  $\sin^{-1} x + \sin^{-1} y = 2\pi/3$ , then the value of  $\cos^{-1} x + \cos^{-1} y$  is

- (a)  $2\pi/3$  (b)  $\pi/3$  (c)  $\pi/2$  (d)  $\pi$

9.  $X = \{0, 2, 4, 6, 8\}$ , P is a relation on X defined by  $P = \{(0,2), (4,2), (4,6), (8,6), (2,4), (0,4)\}$ .

Based on the above relation

Assertion (A)- The relation P on set X is a transitive relation.

Reason (R) – The relation P has a subset of the form  $\{(a,b), (b,c), (a,c)\}$ , where  $a, b, c \in X$

10. Assertion (A)- The principal value of  $\cot^{-1}(\sqrt{3})$  is  $\pi/6$ .

Reason (R) – Domain of  $\cot^{-1} x$  is  $R - \{-1, 1\}$

## SECTION B

11. Find the value of  $\sin^{-1}(\cos 33\pi/5)$

12. Find the domain of function  $y = \cos^{-1}(|x-1|)$ . Show your steps.

13. Evaluate :  $\sin^{-1}(\sin 3\pi/4) + \cos^{-1}(\cos \pi) + \tan^{-1} 1$

14. Draw the graph of  $\cos^{-1}x$ , where  $x \in [-1, 0]$ . Also, write its range.

15. Evaluate:  $\cos^{-1}[\cos (-7\pi/3)]$

### SECTION - C

16. Using determinants, find the area of  $\Delta PQR$  with vertices  $P(3,1)$ ,  $Q(9,3)$ ,  $R(5,7)$ . Also, find the equations of line PQ using determinants.

17. Simplify :  $\tan^{-1}(\cos x / 1 - \sin x)$

18. Show that the relation R defined on the set  $A = \{1, 2, 3, 4, 5\}$ , given by  $R = \{a, b : a - b \text{ is even}\}$  is an equivalence relation.

19. Find the domain of  $y = \sin^{-1}(x^2 - 4)$

### SECTION - D

20. A city's traffic management department is planning to optimize traffic flow by analyzing the connectivity between various traffic signals. The city has five major spots labelled A, B, C, D and E.

The department has collected the following data regarding one-way traffic flow between spots:

1. Traffic flows from A to B, A to C, and A to D.
2. Traffic flows from B to C and from B to E
3. Traffic flows from C to E.
4. Traffic flows from D to E and from D to C.

The department wants to represent and analyse this data using relations and functions. Use the given data to answer the following questions:

I. Is the traffic flow reflexive? Justify.

II. Is the traffic flow transitive? Justify.

III A. Represent the relation describing the traffic flow as a set of ordered pairs. Also state the domain and range of the relation.

21. The Palace of Peace and Reconciliation, also known as the Pyramid of Peace and Accord, is a 62-metre-high pyramid in Nur-Sultan, the capital of Kazakhstan, that serves as a non-denominational national spiritual centre and an event venue. It is

designed faster and partners with a stained-glass apex. It has 25 smaller equilateral triangles.

(1) If the vertices of one triangle are (0,0), (3,3), and (3, -3), then find the area.

(2) Find the area of the face of the pyramid.

(3) Find the length of an altitude of a smaller equilateral triangle.

### SECTION - E

22. Show that the relation  $S$  in set  $R$  of real numbers defined by  $S = \{a, b : a \leq b^3, a \in R, b \in R\}$  is neither reflexive, nor symmetric nor transitive.

23. Let  $R$  be the relation defined in the set  $A = \{1, 2, 3, 4, 5, 6, 7\}$  by  $R = \{(a, b) : \text{both } a \text{ and } b \text{ are either odd or even}\}$ . Show that  $R$  is an equivalence relation. Hence, find the elements of the equivalence class.

### Biology

**Q 1.** Project Files to be prepared on the following topics:

1. **Kunal** - Drugs and Alcohol Abuse - Addiction and Dependence. Prevention and Control.
2. **Vansh** - Mendelian Disorders: i) Colour blindness ii) Haemophilia iii) Sickle cell Anemia iv) Phenylketonuria v) Thalassemia

**Q 2.** Complete the Following Worksheet in the Biology Notebook:

### BIOLOGY WORKSHEET

Chapters 1–4: Reproduction in Organisms, Sexual Reproduction in Flowering Plants, Human Reproduction, and Reproductive Health

#### Section A:

#### Multiple Choice Questions

1. The process by which offspring are produced is called:
  - a) Respiration
  - b) Reproduction
  - c) Fertilization
  - d) Pollination
2. Fusion of male and female gametes is called:
  - a) Pollination
  - b) Germination
  - c) Fertilization
  - d) Budding
3. Which part of a flower receives pollen grains?
  - a) Ovary
  - b) Style
  - c) Stigma

d) Sepal

4. Human sperm are produced in:

a) Epididymis

b) Testis

c) Ureter

d) Prostate gland

Which contraceptive method prevents implantation?

a) Copper-T

b) Condom

c) Rhythm method

d) Vasectomy

5. Transfer of pollen from anther to stigma of the same flower is:

a) Cross-pollination

b) Self-pollination

c) Syngamy

d) Apomixis

6. Placenta develops in:

a) Ovary

b) Uterus

c) Vagina

d) Cervix

7. Which disease is sexually transmitted?

a) Cholera

b) Tuberculosis

c) AIDS

d) Typhoid

8. **Assertion:** The placenta acts as an endocrine tissue.

**Reason:** The placenta secretes hormones during pregnancy.

a) Both A and R are true, and R explains A

b) Both A and R are true, but R does not explain A

c) A true, R false

d) A false, R true

9. **Assertion:** Reproductive health awareness programs are important for society.

**Reason:** They help people gain knowledge about reproductive health, hygiene, contraception, and prevention of sexually transmitted infections.

### Section B:

#### Very Short Answer Questions

1. Define asexual reproduction.

2. Differentiate between syngamy and fertilization.

3. Name any two sexually transmitted diseases.

4. What is amniocentesis?

5. Define pollination.

6. Write one function of the placenta.

### Section C:

#### Short Answer Questions

1. Differentiate between self-pollination and cross-pollination.

2. Explain the structure of a human sperm with a labelled diagram.

3. Mention any three causes of infertility.

4. Explain the menstrual cycle in brief.  
5. What are the advantages of reproductive health awareness?

**Section D:**

**Case Study**

1)A biology teacher explained to students that human reproduction involves specialized reproductive organs and hormones. In females, the ovary releases an ovum during ovulation. Fertilization usually occurs in the fallopian tube, and the zygote formed undergoes several divisions before implantation in the uterus. Proper reproductive health and awareness are important for healthy development.

**Answer the following questions:**

i)Fertilization in humans generally occurs in:

- a) Ovary
- b) Uterus
- c) Fallopian tube
- d) Cervix

ii)The release of an ovum from the ovary is called:

- a) Menstruation
- b) Ovulation
- c) Implantation
- d) Gestation

iii)What is implantation?

Name the hormone responsible for the development of female secondary sexual characteristics.

iv)Which structure nourishes the developing embryo and helps in the exchange of nutrients and gases?

2) During a practical class, students observed different flowers and learned about sexual reproduction in flowering plants. The teacher explained that pollen grains produced in anthers are transferred to the stigma through pollination. After reaching a suitable stigma, pollen grains germinate and form a pollen tube that carries male gametes to the ovule. Fusion of gametes results in fertilization, leading to seed and fruit formation.

**Answer the following questions:**

i)Transfer of pollen grains from anther to stigma is called:

- a) Fertilization
- b) Germination
- c) Pollination
- d) Syngamy

ii)What happens after a pollen grain lands on a compatible stigma?

iii)Where is the embryo sac present?

- a) Ovary
- b) Ovule
- c) Another
- d) Stigma

iv)Name the process in flowering plants in which one male gamete fuses with the egg and the other fuses with the polar nuclei.

v)Which structure carries male gametes to the ovule?

**Section E:**

**Long Answer Questions**

1. Describe double fertilization in flowering plants with a diagram.
2. Explain the male reproductive system in humans with labelled diagrams.

3. Describe various methods of contraception.
4. Explain the events of fertilization and implantation in humans.

## PHYSICS

**Q 1.** Project Files to be prepared on the following topics:

1. **Anika** -charging and discharging of capacitors
2. **Rhythm** - study of the internal resistance of different kinds of cells and factors affecting
3. **Aradia**- study the variation of the refractive index of different materials.
4. **Aryan- Optical** instruments, microscope, and telescope.
5. **Aditya** -study of transfer and its uses
6. **Vansh** - A.C. generator
7. **Kunal** - moving coil galvanometer
8. **Saksham** - rectifiers
9. **Deepyank-Young's** single slit experiment

**Q2. Complete the Following Worksheet in your Physics Notebook.**

### Section A

1. Consider a group of charges such that. Then, the equipotential at a large distance, due to this group, is approximately:

- a) Paraboloidal surface
- b) Plane
- c) Ellipsoidal surface
- d) Spherical surface

The charge flowing through the cell on closing the key k is equal to:

- a) 5cv
- b) 4 CV
- c) 8CV
- d) 10 CV

2. Two insulated charged spheres of radii 20 cm and 25 cm respectively and having equal charge q are connected by a copper wire, and then they are separated:

- a) The charge on a 20 cm sphere will be greater than that on the 25 cm sphere
- b) The charge on the 25 cm sphere will be greater than that on the 20 cm sphere
- c) Both will have charge of
- d) Both the spheres will have the same charge q

3. The electric field at a point in a region is given by , where is a constant and r is the distance of the point from the origin. The magnitude of potential of the point is:

- a. - 2k
- b. -4k
- c. -7k
- d. - k

4. Three-point charges, each of which is placed on the vertices of a triangle ABC. The electrostatic potential at the midpoint of side will be

- a.  $4kQ/L$
- b.  $2KQ/L$
- c.  $3KQ/L$
- d.  $8KQ /L$

5. A point charge of 20 nC is fixed at the origin of the plane. The work done in taking a second point charge of - 50 nC from point ( ) to point is:

- a. **20 joules**
- b. **30 joules**
- c. **0 joules**
- d. **10 joules**

6. In the figure given, and. What is the potential difference between points A and B?

- a) 9 V
- b) 0 V
- c) 11 V
- d) 13 V

7. A metal sheet is inserted between the plates of a parallel plate capacitor of capacitance C. If the sheet partly occupies the space between the plates, the capacitance:

- a) becomes greater than C
- b) becomes zero
- c) becomes less than C
- d) remains C

8. The figure shows some equipotential lines distributed in space. A charged object is moved from point A to point B.

- a) The work done in Fig. (iii) is greater than that in Fig. (ii) but equal to that in Fig. (i).
- b) The work done in Fig. (ii) is the least.
- c) The work done is the same in Fig. (i), Fig. (ii), and Fig. (iii).
- d) The work done in Fig. (i) is the greatest.

9. A capacitor is charged by a battery. The battery is removed, and another identical uncharged capacitor is connected in parallel. The total electrostatic energy of the resulting system:

- a) increases by a factor of 2
- b) increases by a factor of 4
- c) remains the same
- d) decreases by a factor of 2

11. Assertion (A): Work done in moving a charge around a closed path, in an electric field, is always zero.

Reason (R): Electrostatic force is a conservative force.

- a) Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true, and Reason (R) is NOT the correct explanation of Assertion (A).
- c) Assertion (A) is true, but Reason (R) is false.
- d) Assertion (A) is false, but Reason (R) is also false.

12. Assertion (A): A metallic shield in the form of a hollow shell may be built to block an electric field.

Reason (R): In a hollow spherical shield, the electric field inside it is zero at every point.

- 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.

13. Assertion (A): Two parallel metal plates having charge  $+Q$  and  $-Q$  are facing at a distance between them. The plates are now immersed in kerosene oil, and the electric potential between the plates decreases.

Reason (R): The dielectric constant of kerosene oil is less than 1.

- 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.

14. Assertion (A): All the charge in a conductor gets distributed on the whole of its outer surface.

Reason (R): In a dynamic system, charges try to keep their potential energy to a minimum.

- 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.

15. Assertion (A): Increasing the charge on the plates of a capacitor means increasing the capacitance.

Reason (R): For a capacitor,  $Q = CV$   $Q = C$ .

- 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, and R is also false

## Economics

**Q 1.** Project Files to be prepared on the following topics:

- 1. **Tanish** - Digital India - Step Towards the Future
- 2. **Jaydeep** - Digital India- Step Towards the Future
- 3. **Khushi** - Cashless Economy
- 4. **Nukul** - Role of RBI in Credit Control
- 5. **Anokhi** - GST and its impact on GDP
- 6. **Aditya** - Role of RBI in Credit Control
- 7. **Anirudh**- Rise of Organic Farming in India
- 8. **Arpita** - **Cashless** Economy
- 9. **Sriansh**- Rise of Organic Farming in India
- 10. **Shams** - GST and its impact on GDP

**Q2.** Complete the Following Worksheet in the Macroeconomics Notebook:

## ECONOMICS WORKSHEET

### Unit – Money and Banking System

1. Which of the following is considered the most liquid asset?

- a) Land
- b) Gold
- c) Money
- d) Shares

2. Assertion (A): Commercial banks create credit in the economy.

Reason (R): Banks keep only a fraction of deposits as reserves and lend the remaining amount.

- a) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
- b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- c) Assertion is true, but Reason is false.
- d) Assertion is false, but Reason is true.

3. Statement-Based Question:

Identify the correct statements from the following:

- I. The Reserve Bank of India acts as the banker to the government.
- II. Demand deposits cannot be withdrawn by cheques.
- III. The central bank controls the money supply in the economy.

Options:

- a) I and II only
- b) II and III only
- c) I and III only
- d) I, II, and III

4. Which of the following is a quantitative method of credit control used by the central bank?

- a) Moral Suasion
- b) Repo Rate
- c) Margin Requirement
- d) Direct Action

5. Assertion (A): An increase in the Cash Reserve Ratio (CRR) reduces the money supply in the economy.

Reason (R): Commercial banks are left with less money for lending purposes.

- a) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
- b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- c) Assertion is true, but Reason is false.
- d) Assertion is false, but Reason is true.

6. Explain any three functions of money.

7. Differentiate between the Central Bank and the Commercial Bank on any three bases.

8. Explain the process of credit creation by commercial banks with the help of an example.

9. Define Repo Rate and Reverse Repo Rate. Explain their impact on the money supply.

10. Explain the role of the Reserve Bank of India as:

- a) Banker's Bank
- b) Lender of Last Resort

11. Explain the functions of the Central Bank in detail.
12. Discuss the measures adopted by the Central Bank to control credit in the economy.
13. Explain the meaning of the money multiplier. How does the banking system create multiple credits?
14. Distinguish between demand deposits and time deposits. Explain the advantages of bank deposits.
15. Explain the process of money creation by commercial banks with a numerical example, assuming CRR is 20%.
16. Read the following case carefully and answer the questions that follow:  
The Reserve Bank of India observed a continuous rise in inflation due to excess money supply in the economy. To control inflationary pressure, the RBI decided to increase the Repo Rate and Cash Reserve Ratio (CRR). As a result, commercial banks faced a shortage of lendable funds, and borrowing became expensive for businesses and consumers.  
Questions:
  - a) Why does RBI increase the Repo Rate during inflation?
  - b) Explain the impact of an increase in CRR on commercial banks.
  - c) How do these measures help in controlling inflation?

## **Psychology**

**Q.1** Prepare a Psychology Practical File based on the following Particulars

1. Introduction to Psychological Testing
2. Raven`s Standard Progressive Matrices
3. Maudley`s Personality Inventory
4. Adjustment inventory for school students
5. Sinha`s comprehensive anxiety test
6. Self-Concept Questionnaire

**Q 2.** Complete the Following Worksheet in the Psychology Notebook:

### **PSYCHOLOGY WORKSHEET**

Unit 2 ("Self and Personality")

#### **Part 1: Very Short Answer Type Questions**

1. Defence Mechanisms: What is 'reaction formation'? Give an example.
2. Self-Concept: Differentiate between self-as-subject and self-as-object.
3. Eysenck's Theory: State the three dimensions of personality proposed by H.J. Eysenck.
4. Traits: Define 'cardinal traits' as given by Gordon Allport.
5. Self-Control: How is 'delay of gratification' measured or demonstrated?

### **Part 2: Short Answer Type Questions**

6. Defence Mechanisms: Compare and contrast repression and regression.
7. Cultural Self: Differentiate between the *personal self* and *social self*.
8. Assessment: Explain the observation method for personality assessment along with its major limitations.
9. Theories: Discuss Karen Horney's theory of personality, particularly the concept of basic anxiety.

### **Part 3: Long Answer Type Questions**

10. Projective Tests: Why are projective techniques used to assess personality? Explain the chief features and benefits of the Rorschach Inkblot Test or Thematic Apperception Test (TAT) over direct methods.
11. Humanistic Approach: Using Carl Rogers' theory, describe how conditions of worth and a lack of unconditional positive regard can lead to a maladjusted personality.

### **Part 4: Case-Based Questions**

12. Behavioural Analysis: A person's behaviour in a variety of situations provides meaningful information about their personality. Discuss behavioural analysis, including behavioural ratings and nominations.

### **Computer Science**

**Q. 1** Prepare a Project file for the 12th board practical with the help of the file linked to the share with you.

**Q. 2.** Complete the Following Worksheet in the Computer Science Notebook:

#### **COMPUTER SCIENCE WORKSHEET**

### **Section A – Multiple Choice Questions**

1. Which keyword is used to define a function in Python?
  - a) function
  - b) define

- c) def
- d) fun
- 2. A function that calls itself is known as:
  - a) Built-in function
  - b) Recursive function
  - c) Lambda function
  - d) User-defined function
- 3. Which statement is used to exit a function and return a value?
  - a) break
  - b) continue
  - c) return
  - d) pass
- 4. Which topology uses a central connecting device?
  - a) Bus
  - b) Ring
  - c) Star
  - d) Mesh
- 5. Full form of URL is:
  - a) Uniform Resource Locator
  - b) Universal Resource Link
  - c) Uniform Reference Link
  - d) Universal Reference Locator
- 6. Which protocol is used to transfer web pages?
  - a) FTP
  - b) HTTP
  - c) SMTP
  - d) TCP
- 7. In SQL, which command is used to retrieve data from a table?
  - a) GET
  - b) EXTRACT
  - c) SELECT
  - d) DISPLAY
- 8. Which key uniquely identifies a record in a table?
  - a) Foreign Key
  - b) Candidate Key
  - c) Primary Key
  - d) Alternate Key
- 9. Which function is used to find the length of a string in Python?
  - a) size()
  - b) len()
  - c) length()
  - d) count()
- 10. Which of the following is a networking device?
  - a) Scanner

- b) Plotter
  - c) Router
  - d) Speaker
11. Which SQL clause is used to filter records?
- a) ORDER BY
  - b) WHERE
  - c) GROUP BY
  - d) SELECT
12. Which type of function is already available in Python?
- a) Recursive function
  - b) User-defined function
  - c) Built-in function
  - d) Anonymous function

**Section B – Very Short Answer Questions**

13. Differentiate between actual parameters and formal parameters.
14. What is recursion? Give one example.
15. Define the following terms:
- a) Bandwidth
  - b) Protocol
16. What is the purpose of DNS?
17. Differentiate between Primary Key and Foreign Key.
18. Write the SQL command to display all records from a table named STUDENT.

**Section C – Short Answer Questions**

19. Explain any three advantages of using functions in Python.
20. Write a Python function to display the square of a number.
21. Differentiate between LAN, MAN, and WAN.
22. Explain the functions of the following networking devices:
- a) Hub
  - b) Switch
  - c) Router
23. Explain any three SQL data types with examples.

**Section D – Long Answer Questions**

24. Write a Python program using a function to calculate the factorial of a number.

**OR**

Write a recursive function to find the sum of the first n natural numbers.

25. Explain different network topologies with suitable diagrams and advantages.  
26. Consider the following table EMPLOYEE:

EmpID	Name	Department	Salary
101	Ravi	Sales	45000
102	Neha	HR	50000
103	Aman	IT	60000

Write SQL queries for the following:

- Display all records from EMPLOYEE.
- Display names of employees working in the IT department.
- Display records where salary is greater than 50000.
- Increase the salary of all employees by 10%.
- Delete the record of employees with EmpID 102.

27. Explain the following SQL clauses with examples:

- WHERE
- ORDER BY
- GROUP BY
- DISTINCT
- LIKE

### Section E – Case Study-Based Questions

28. A company has developed a Python program for employee salary management. The program uses different functions to calculate salary, bonus, and deductions separately.

Answer the following questions:

- Why are functions useful in Python programs?
- Which statement is used to return a value from a function?
- What is recursion?
- Write the syntax to define a function in Python.

29. A school has connected all computers in its computer lab using networking devices. The school stores student records in a database table named STUDENT.

Answer the following questions:

- a) Which type of network is generally used in a computer lab?
- b) Name one networking device used to connect computers.
- c) Which SQL command is used to retrieve records from a table?
- d) What is the purpose of a Primary Key in a database table?

## History

**Q 1.** Project Files to be prepared on the following topics:

1. **Arpita:** The history and legacy of the Mauryan Empire
2. **Khushi:** Bhakti movement- multiple interpretations and commentaries.

**Q 2.** Complete the Following Worksheet in the history notebook:

### History Worksheet

#### SECTION A: Multiple Choice Questions

1. What was the name of the project led by V. S. Sukthankar to compile the Mahabharata?
  - a) The Critical Edition of the Mahabharata
  - b) The Epic of Hastinapur
  - c) The Brahmanical Text Compilation
  - d) The Purana Samhita
2. According to the Brahmanical texts, which of the following groups were given the status of 'Mlechchhas' (barbarians/outsideers)?
  - a) The Shungas
  - b) The Shakas
  - c) The Chandalas
  - d) The Brahmanas
3. Which of the following statements about 'Gotra' rules, as per Brahmanical practice, is correct?
  - a) Women could retain their father's gotra after marriage.
  - b) Members of the same gotra were allowed to marry.
  - c) Women were expected to adopt their husband's gotra upon marriage.
  - d) Rulers did not follow the gotra rules.
4. Name the early Indian dynasty in which rulers identified themselves with matronymics (names derived from the mother's name)?
  - a) The Mauryas
  - b) The Guptas
  - c) The Satavahanas
  - d) The Cholas

5. Which text lays down the duties and codes of behaviour for the Chandalas (untouchables)?
- The Rig Veda
  - The Arthashastra
  - The Manusmriti
  - The Mahabharata

### Section B: Short Answer Questions

6. Explain how the critical edition of the Mahabharata was prepared by V. S. Sukthankar and his team. Why do historians consider the epic a "dynamic text"?
7. How did the Dharmashastras and Dharmasutras define the ideal occupations of the four varnas (Brahmanas, Kshatriyas, Vaishyas, and Shudras)?
8. The Brahmanical prescriptions about kinship and marriage were not universally followed in early Indian society. Support this statement with suitable historical evidence.
9. Describe the duties laid down in the Manusmriti for the Chandalas. How did they survive on the outskirts of the village?

### Section C: Long Answer / Value-Based Questions

10. Explain the various strategies that the Brahmanas used to enforce the norms of the Varna order between C. 600 BCE and 600 CE. How successful were they in enforcing this system universally?
11. "Political power and kingship in early India were not exclusively dependent on birth as a Kshatriya." Justify this statement by citing examples of rulers from different lineages and social backgrounds.
12. Examine the importance of the Mahabharata as a colossal epic for understanding the social history, familial structures, and gender relations of ancient India.

## Political Science

**Q 1.** Project Files to be prepared on the following topics:

- Arpita**- Partition of India
- Khushi**-India's Nuclear Policy

**Q 2.** Complete the Following Worksheet in Political Science-Part 2- Notebook:

### POLITICAL SCIENCE WORKSHEET

Chapter: Challenges of Nation -Building

## Section A: Multiple Choice Questions (MCQs)

1. Who played the historic and crucial role in the integration of princely states into the Indian Union?
  - a) Jawaharlal Nehru
  - b) Sardar Vallabhbhai Patel
  - c) C. Rajagopalachari
  - d) Maulana Abul Kalam Khan
2. Name the first linguistic state carved out of the Madras province in 1953
  - a) Gujarat
  - b) Punjab
  - c) Andhra Pradesh
  - d) Maharashtra
3. The Instrument of Accession was the document signed by the rulers of the princely states. Which state's ruler delayed signing it the longest?
  - a) Hyderabad
  - b) Junagadh
  - c) Kashmir
  - d) Manipur

## Part 2: Short Answer Type Questions

4. State the primary recommendations of the States Reorganisation Commission formed in 1953.
5. Briefly describe the 'Two-Nation Theory' and its consequences on the partition of India.
6. What was the 'Instrument of Accession'? Why was it necessary for the newly independent India?

## Part 3: Long Answer Type Questions

7. The integration of the princely states of Hyderabad and Manipur into the Indian Union was a complex process." Justify this statement with relevant historical facts.
8. Trace the events that led to the creation of Andhra Pradesh. How did this event impact the map of India regarding linguistic states?

## Part 4: Passage-Based Question

Read the following passage carefully and answer the questions below:

"The map of India was redrawn on the linguistic basis. This was the culmination of a long struggle. The demand for separate states on the basis of language was raised immediately after independence. The central leadership was hesitant initially, fearing that it might lead to disintegration and separatism. However, the movement for a separate Andhra state forced the government's hand..."

9. Why was the central leadership initially hesitant to create states on a linguistic basis?

10. How did the movement for Andhra Pradesh change the government's stance?  
11. Mention any two states created on a linguistic basis following the States Reorganisation Act of 1956.

## English

**Theme: Literature, Society, and Human Values**

### Q1. PROJECT TITLE

“Reflections of Life Through Literature”

Objective:

To develop literary appreciation, analytical thinking, communication skills, creativity, and a deeper understanding of human emotions and social issues through poems and prose.

### SECTION A – POETRY PROJECT

Select Any TWO Poems From the Syllabus

Suggested poems:

My Mother at Sixty-Six  
Keeping Quiet  
A Thing of Beauty  
A Roadside Stand  
Aunt Jennifer’s Tigers  
Include the Following:

#### 1. About the Poet

Write:

Brief biography

Literary style

Famous works

(80–100 words each)

#### 2. Summary and Central Idea

Explain:

The main idea of the poem

Theme/message

Tone and mood

(120–150 words)

#### 3. Poetic Devices

Identify and explain examples of:

Imagery

Metaphor

Symbolism

Alliteration

Irony  
Personification  
Also mention the rhyme scheme if applicable.

#### **4. Critical Analysis**

Write:  
Social relevance of the poem  
Poet's perspective  
Emotional depth and literary impact  
(150–200 words)

#### **5. Competency-Based Reflection**

Answer:  
How does the poem connect with modern society or your personal experiences?  
(120–150 words)

#### **6. Creative Task**

Choose any one:  
Write a diary entry as the poet/speaker  
Create a visual illustration/poster  
Write an alternative title with justification  
Compose a short poem inspired by the same theme

### **SECTION B – PROSE PROJECT**

**Select Any TWO Chapters From:**

Flamingo  
The Last Lesson  
Lost Spring  
Deep Water  
The Rattrap  
Indigo  
Poets and Pancakes  
The Interview  
Going Places  
Vistas  
The Third Level  
The Tiger King  
Journey to the End of the Earth  
The Enemy  
On the Face of It  
Memories of Childhood

Include the Following:

1. Chapter Summary  
Write a detailed summary in 150 words.

2. Character Analysis  
Analyse major characters:

Personality traits

Internal conflicts  
Development in the story  
Values represented  
(120–150 words each)

3. Themes and Social Issues

Discuss:  
Major themes  
Social concerns  
Human values highlighted  
Examples:  
Poverty and child labour  
Identity and discrimination  
Fear and courage  
Human compassion

4. Quote Analysis

Choose any three important quotations from the chapter and explain:  
Context  
Meaning  
Relevance

5. Critical Thinking Activity

Answer any one:  
Was the protagonist's decision justified?  
What would you have done differently?  
How would the story change in modern times?  
(150 words)

6. Creative Presentation

Choose one:  
Newspaper article  
Mock interview with a character  
Alternate ending  
Dialogue between characters  
Book cover design with explanation

**Q2. Complete the Following Worksheet in the English Notebook:**

**ENGLISH WORKSHEET**

1. The Last Lesson

M. Hamel's last lesson made the villagers realise the importance of their language and culture. How can young people today help preserve their language, traditions, and cultural identity in a rapidly changing world?  
(Answer in 120–150 words.)

2. My Mother at Sixty-Six

The poem highlights the fear of separation and the emotional bond between a parent and a child. Explain how modern lifestyles and busy schedules affect family relationships today.

*(Answer in 120–150 words.)*

### 3. Deep Water

William Douglas overcame his fear of water through determination and courage. Describe how confidence and perseverance can help people overcome fear and succeed in life.

*(Answer in 120–150 words.)*

### 4. The Third Level

Charley escapes into the imaginary third level to avoid the stress of modern life. Why do people often look for escape from reality, and what are healthier ways to deal with stress and pressure?

*(Answer in 120–150 words.)*

### Comparison-Based Questions

1. Compare the experiences of the protagonists in Deep Water and The Third Level. How do both characters deal with fear and emotional stress in different ways?

*(Answer in 120–150 words.)*

2. Both The Last Lesson and My Mother at Sixty-Six deal with the fear of loss. Compare how the authors present emotions related to separation, regret, and attachment in the two works.

*(Answer in 120–150 words.)*

### Extract-Based Questions

1 “Driving from my parents’ home to Cochin last Friday Morning, I saw my mother, beside me, doze, open-mouthed, her face ashen like that of a corpse...”

1. The poet compares her mother’s face to a corpse to highlight:
  - a) happiness
  - b) weakness and ageing
  - c) anger
  - d) excitement
2. The word “ashen” means:
  - a) bright
  - b) colourful

- c) pale
- d) cheerful
- 3. What was the poet doing when she noticed her mother?
- 4. What does the comparison with a corpse signify?
- 5. The poet was travelling from her parent's home to \_\_\_\_\_.

2. "My children, this is the last lesson I shall give you. The order has come from Berlin to teach only German in the schools of Alsace and Lorraine."

- 1. Who spoke these words?
  - a) Franz
  - b) M. Hamel
  - c) Wachter
  - d) The mayor
- 2. The order had come from:
  - a) Paris
  - b) France
  - c) Berlin
  - d) London
- 3. Why was it the last lesson?
- 4. How did the announcement affect the villagers and students?
- 5. Only \_\_\_\_\_ language was to be taught in the schools of Alsace and Lorraine.

3. "The old terror flooded back, and my legs froze. I was paralyzed under water — stiff, rigid with fear."

- 1. What does "old terror" refer to?
  - a) fear of darkness
  - b) fear of swimming
  - c) fear of water
  - d) fear of heights
- 2. The narrator felt:
  - a) confident
  - b) relaxed
  - c) frightened
  - d) excited
- 3. Why did the narrator's legs freeze?
- 4. What does this incident reveal about the narrator's state of mind?
- 5. The narrator was rigid with \_\_\_\_\_ under water.

4. "The modern world is full of insecurity, fear, war, worry, and stress."

1. Who believed that the modern world was full of stress?
  - a) Sam
  - b) Charley
  - c) Louisa
  - d) The psychiatrist
2. According to the chapter, people often look for:
  - a) luxury
  - b) adventure
  - c) escape from reality
  - d) fame
3. Why does Charley want to escape from the modern world?
4. What does the third level symbolise in the story?
5. The modern world is full of insecurity, fear, war, worry and \_\_\_\_\_.

Writing Section:

1. You are concerned about the increasing problem of plastic waste in your city. Write a letter to the Editor of a national daily expressing your concern and suggesting measures to reduce plastic pollution.
2. Rising stress and pressure among students have become a serious issue. Write a letter to the Editor discussing the causes of academic stress and suggesting solutions to promote mental well-being among students.
3. You are the Cultural Secretary of your school. Draft a formal invitation inviting parents and guests to the Annual Cultural Fest to be held in your school auditorium.
4. You have received an invitation to attend your friend's birthday party, but you will be out of the station on that day. Write a formal reply declining the invitation politely.
5. You have been invited to the Annual Prize Distribution Function of your school as the Head Boy/Head Girl. Write a formal reply accepting the invitation.

## BUSINESS STUDIES

Project Files to be prepared on the following topics:

1. **Tanish** - Principles of Management (Henri Fayol)
2. **Jaydeep** -Principles of Management (Henri Fayol)
3. **Nukul** - Marketing Management
4. **Anokhi** - Marketing Management
5. **Aditya** - Principles of Management (Henri Fayol)
6. **Anirudh**- Principles of Management (Henri Fayol)

7. **Sriansh**- Principles of Management (Henri Fayol)

8. **Shams** - Marketing Management

Q2. Complete the Following Worksheet in the B.St. notebook:

### **BUSINESS STUDIES WORKSHEET**

#### **Section A**

1. Management is primarily concerned with:

- a) Building construction
- b) Getting work done through others
- c) Scientific research
- d) Political administration

2. Which of the following is NOT a feature of management?

- a) Management is a goal-oriented process
- b) Management is a tangible force
- c) Management is a continuous process
- d) Management is all-pervasive

3. The function of management that bridges the gap between where we are and where we want to be is:

- a) Organising
- b) Planning
- c) Staffing
- d) Controlling

4. Top-level management is responsible for:

- a) Supervising workers
- b) Preparing accounts
- c) Formulating overall goals and policies
- d) Maintaining machinery

5. Which of the following best describes management as an art?

- a) It has a systematic body of knowledge
- b) It requires personal skill and creativity
- c) It has an ethical code of conduct
- d) It needs formal training only

6. \*Assertion (A)\*: Management is a dynamic function.

\*Reason (R)\*: Management has to adapt to changes in the business environment.

- 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
7. The principle of 'Unity of Command' means:
- a) One head one plan
  - b) One subordinate should receive orders from one superior
  - c) Specialisation is essential
  - d) Employees must be united
8. According to Fayol, 'Gang Plank' is related to:
- a) Unity of Direction
  - b) Scalar Chain
  - c) Division of Work
  - d) Esprit de Corps
9. The technique of 'Functional Foremanship' was developed by:
- a) Henry Fayol
  - b) F.W. Taylor
  - c) Peter Drucker
  - d) Elton Mayo
10. Which of the following is NOT a principle given by Fayol?
- a) Initiative
  - b) Standardisation of work
  - c) Equity
  - d) Stability of Personnel

### **Section B**

11. Distinguish between efficiency and effectiveness.
12. Discuss various levels of management and their functions.
13. What is coordination? State the features of coordination.
14. Mr. Sharma has an MBA and knows all management theories. But his team's performance is poor because he cannot communicate well or motivate employees. Mr. Verma has no degree but 20 years of experience. His team is highly motivated because he uses personal creativity and intuition to solve problems.
- a) Identify which manager reflects 'management as science' and which reflects 'management as art'.
  - b) "Management is both science and art." Justify using the case.
  - c) Can management be called a profession? Give 2 reasons

### **Section C**

15. Ritu is the manager of a textile company. She sets targets for production and sales, divides work among 50 workers, assigns a supervisor for each group, and motivates employees by giving performance bonuses. At the end of the month, she compares actual output with targets and takes corrective action.

- a) Identify the functions of management performed by Ritu.
- b) Which level of management does Ritu belong to? Give 2 reasons.
- c) "Management is goal-oriented and continuous." Explain with reference to the case.

16. Explain the nature of management principles.

17. ABC Ltd. has three departments: Production, Marketing, and Finance. The Production department produced 10,000 units, but Marketing could sell only 6,000 units due to a lack of advertising. The finance department did not release funds for ads on time. As a result, the company faced heavy losses.

- a) Which concept of management is lacking in ABC Ltd.?
- b) State any 2 features of this concept.
- c) Suggest how the company can ensure smooth working among departments.

18. Discuss the significance of principles of management with suitable examples.

### Section D

19. A company has two managers, Mr. A and Mr. B. Mr. A instructs worker X to complete a task by Monday. Mr. B instructs the same worker X to complete a different task by Monday. Worker X gets confused, and efficiency falls. Also, there is a long chain from MD to workers, and for urgent communication between two employees at the same level, they have to follow the chain.

- a) Which principle of Fayol is being violated in the first situation? What are its consequences?
- b) Which principle is followed when following the long chain? Name the concept Fayol suggested to solve urgency issues.
- c) Explain 'Esprit de Corps'. How would it help this company?

20. XYZ Ltd. noticed that workers waste time in finding tools and raw materials. Management conducted a study to determine the standard time for each job, eliminated unnecessary movements, and placed tools at defined places. Workers producing more than standard output were paid ₹20 per piece, while others got ₹15 per piece.

- a) Identify 2 techniques of Scientific Management used here.
- b) Name the wage payment system mentioned. What is its objective?
- c) State 2 differences between 'Time Study' and 'Motion Study'.

## ACCOUNTS

**Q1. Project Files to be prepared on the following topics:**

Choose any Company (like Tata Steel, Wipro) and write about its history and board of directors

Prepare some pages of Ratio meaning and formulas (two from each)

1. Liquidity Ratio
2. Solvency Ratio
3. Turnover Ratio
4. Profitability Ratio

Q2. Complete the Following Worksheet in the account's notebook:

**ACCOUNTS WORKSHEET**

**Section A**

1. In the absence of a partnership deed, interest on a loan by a partner is allowed at:
  - a) 6% p.a.
  - b) 8% p.a.
  - c) 10% p.a.
  - d) No interest is allowed
2. Which of the following is NOT shown in Profit & Loss Appropriation A/c?
  - a) Interest on capital
  - b) Salary to partner
  - c) Rent paid to partner
  - d) Interest on drawings
3. A and B are partners. A's drawings = ₹10,000 p.m. for 6 months at the end of each month. Interest @12% p.a. Interest on A's drawings will be:
  - a) ₹2,100
  - b) ₹1,800
  - c) ₹1,500
  - d) ₹3,600
4. Guarantee of minimum profit to a partner is given by:
  - a) Firm only
  - b) Other partners only
  - c) Firm or other partners
  - d) Government
5. Assertion (A): In the absence of agreement, partners share profits equally.  
Reason (R): The Indian Partnership Act, 1932, states so.
  - 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
6. Goodwill is classified as:
- a) Tangible asset
  - b) Fictitious asset
  - c) Intangible asset
  - d) Current asset
7. Under the Super Profit Method, Goodwill =
- a) Average Profit  $\times$  No. of years purchase
  - b) Super Profit  $\times$  No. of years purchase
  - c) Capital Employed  $\times$  Normal Rate of Return
  - d) Total Assets – Total Liabilities
8. Sacrificing Ratio is calculated at the time of:
- a) Dissolution of the firm
  - b) Admission of partner
  - c) Retirement of partner
  - d) Death of partner

9. X and Y share 5:3. Z admitted for  $\frac{1}{4}$ th share. New ratio of X, Y, Z will be:
- a) 15:9:8
  - b) 5:3:2
  - c) 1:1:1
  - d) 3:2:1
10. Gaining Ratio is used to:
- a) Distribute goodwill brought by the new partner
  - b) Adjust goodwill at retirement
  - c) Share reserves
  - d) Calculate interest on capital

### Section B

11. X and Y are partners with capital of ₹5,00,000 and ₹3,00,000. Deed allows interest on capital @8% p.a. and salary to X ₹5,000 p.m. Profit before adjustments = ₹2,24,000. Share the remaining profit equally. Prepare P&L Appropriation A/c.
12. A, B, and C are partners 3:2:1. C is guaranteed a minimum profit of ₹60,000. Firm's profit = ₹1,50,000. Any deficiency met by A and B in 3:2. Calculate the profit share of each partner.
13. Capitals of L and M are ₹4,00,000 and ₹3,00,000. Profit for the year = ₹2,10,000. Interest on capital @10% p.a. Interest on drawings: L ₹6,000, M ₹4,000. L's salary ₹2,000 p.m. Share profits 3:2. Prepare P&L Appropriation A/c

14. Average profit = ₹1,80,000. Normal Rate of Return = 10%. Capital employed = ₹15,00,000. Calculate goodwill at 3 years' purchase of super profit.

15. A firm earned profits: 2022-₹90,000, 2023-₹1,10,000, 2024-₹1,30,000, 2025-₹1,50,000. Calculate goodwill at 2 years' purchase of the weighted average profit. Weights: 1,2,3,4.

### Section C

16. A and B are partners sharing profits 3:2. Their capitals on 1.4.2025 were ₹6,00,000 and ₹4,00,000.

After accounts were closed, it was found that interest on capital @10% p.a. and interest on drawings @12% p.a. were omitted. Drawings: A ₹20,000 p.m. at the end of each month, B ₹60,000 on 1.10.2025. Profit for the year = ₹3,00,000 already distributed.

Pass a single adjusting journal entry.

17. P and Q share 2:1. R admitted for 1/4th share with a guarantee of minimum ₹90,000 p.a. from the firm. New ratio = 2:1:1. Profit for year = ₹2,80,000.

a) Calculate the profit share of each partner.

b) If deficiency is borne by P and Q in the old ratio, show the distribution.

18. Capitalisation of Average Profit Method\*

Average profit = ₹2,40,000. Normal Rate of Return = 12%. Capital employed = ₹15,00,000.

Calculate goodwill by the Capitalisation of Average Profit Method.

### Section D

19. L and M share 3:2. They have decided to change their profit-sharing ratio to 5:3. Workmen's Compensation Reserve = ₹80,000.

(i) There is no claim

(ii) Claim against WCR = ₹30,000.

(iii) Claim is 80,000

(iv) Claim is 1,00,000

How will WCR be treated in each case? Pass entries.

20. Ram and Shyam are partners with capitals of ₹8,00,000 and ₹6,00,000. Deed provides:

1. Interest on capital @8% p.a.

2. Interest on drawings @10% p.a. Drawings: Ram ₹30,000 quarterly at beginning, Shyam ₹20,000 quarterly at end.

3. Salary to Ram ₹6,000 p.m.

4. Commission to Shyam @5% on net profit after all adjustments.

Profit for the year = ₹5,50,000 before the above adjustments. Share balance 3:2.

Prepare P&L Appropriation A/c and Partners' Capital A/cs if capitals are fluctuating.

## Fine Arts worksheet

### SECTION-A

- Q1. Who introduced miniature painting in India?
- Q2. What are the main features of miniature painting in India?
- Q3. When did miniature painting originate in India?
- Q4. When did the Rajasthan School of miniature painting begin?
- Q5. What type of features were created in the Rajasthani School of Painting?
- Q6. Which was the most developed form of miniature painting in the Mewar style?
- Q7. In which country Orissa School come into existence?
- Q8. Which style of miniature painting originated in India?
- Q9. After whose decline did Rajput' take up miniature painting?
- Q10. The Pahari School of painting emerged in which region?

### SECTION-B

- Q1. Briefly explain the Miniature painting.
- Q2. What are the six Limbs in miniature painting?
- Q3. What are the differences between the Mughal style of Painting and the Rajput style of painting?
- Q4. What is the common Theme in Pahari miniature painting?
- Q5. Define the one Famous miniature painting of the Jodhpur School?

### SECTION-C

- Q1. Describe the artistic aspect of the Rajasthani School of miniature painting.
- Q2. Briefly explain the origin and development of Miniature painting in India?

