

# SGJ DAV SEN. SEC. PUBLIC SCHOOL, HARIPURA

## Class – 12<sup>th</sup> (Sci & Com)

Date – 07.01.2025

**Instructions: Dear children, The work which is being sent to you, it must be done in a fair notebook and in beautiful handwriting. When the school will reopen this home work will be checked. This work is given for revision purpose.**

### ENGLISH

In certain states of India there is a great imbalance in the male female ratio. This is the result of special treatment given to the boys in the family. Why is it so? How can we change this mindset? Write an article in 150-200 words on 'Gender discrimination in society'. You are Karuna / Karan.

### PUNJABI

'ਮਨ ਜੀਤੇ ਜਗ ਜੀਤ' ਤੇ ਪੈਰਾ ਰਚਨਾ ਕਰੋ।

### MATHS

1. Find the unit vector in the direction of the sum of the vectors:

$2\mathbf{i} - \mathbf{j} + 2\mathbf{k}$  and  $-\mathbf{i} + \mathbf{j} + 3\mathbf{k}$ .

2. Solve the differential equation :

$(1+y^2)(1+\log x) dx + x dy = 0$ , given that when  $x=1$ ,  $y=1$ .

3. Determine the area of the parallelogram whose adjacent sides are:

$\mathbf{a} = \mathbf{i} + 2\mathbf{j} - 3\mathbf{k}$  and  $\mathbf{b} = 3\mathbf{i} - 2\mathbf{j} + \mathbf{k}$ .

4. Show that  $(x^2 + xy) dy = (x^2 + y^2) dx$  is homogenous and solve it.

5. A man is known to speak the truth 3 out of 5 times. He throws a die and reports that it is '1'. Find the probability that it is actually 1.

### PHYSICS

1. (a) State the condition under which the phenomenon of resonance occurs in a series LCR circuit. Plot a graph showing the variation of current with frequency of a.c. sources in a series LCR circuit.

(b) Show that in a series LCR circuit connected to an a.c. source exhibits resonance at its natural frequency equal to

2. In a stepup transformer, transformation ratio is 100. The primary voltage is 200 V and input is 1000 watt. The number of turns in primary is 100. Calculate

(1) Number of turns in the secondary

(2) Current in the primary

(3) The voltage across the secondary

(4) Current in the secondary

(5) Write the formula for transformation ratio?

3. A long solenoid with 15 turns per cm has a small loop of area  $2.0 \text{ cm}^2$  placed inside the solenoid normal to its axis. If the current carried by the solenoid changes steadily from 2.0 A to 4.0 A in 0.1 s, what is the induced emf in the loop while the current is changing?

4. A circular coil of radius 8.0 cm and 20 turns is rotated about its vertical diameter with an angular speed of  $50 \text{ rad s}^{-1}$  in a uniform horizontal magnetic field of magnitude. Obtain the maximum and average emf induced in the coil. If the coil forms a closed loop of resistance, calculate the maximum value of current in the coil. Calculate the average power loss due to Joule heating. Where does this power come from?

### CHEMISTRY

Q1. Can  $E^{\circ}_{\text{cell}}$  or  $\Delta_r G^{\circ}$  for a cell reaction ever be equal to zero?

Q2. Depict the galvanic cell in which the cell reaction is :  $\text{Cu} + 2\text{Ag}^+ \rightarrow 2\text{Ag} + \text{Cu}^{2+}$ .

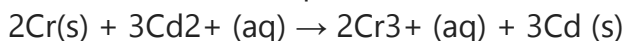
Q3. How will the pH of brine (NaCl solution) be affected when it is electrolysed

Q4 Consider a cell given below

$\text{Cu} | \text{Cu}^{2+} || \text{Cl}^- | \text{Cl}_2, \text{Pt}$

Write the reactions that occur at anode and cathode.

Q5 What is Nernst equation? write the Nernst equation for the reaction.



### **BIOLOGY**

1. A cross between a red flower bearing plant and a white flower bearing plant of *Antirrhinum* produced all plants having pink flowers. Work out a cross to explain how this is possible.

2. Work out a cross to find the genotype of a tall pea plant. Name the type of cross.

3. What is a test cross? How can it decipher the heterozygosity of a plant?

4. (i) Write the conclusion Mendel arrived at on dominance of traits on the basis of monohybrid crosses that he carried out in pea plants.

(ii) Explain why a recessive allele is unable to express itself in a heterozygous state.

5. In pea plants, the colour of the flower is either violet or white, whereas human skin colour shows many gradation. Explain giving reasons how it is possible.

6. Compare in any three ways the chromosomal theory of inheritance as proposed by Sutton and Boveri with that of experimental results on pea plant presented by Mendel.

7. In a dihybrid cross, white-eyed, yellow-bodied female *Drosophila* crossed with red-eyed, brown-bodied male *Drosophila* produced in F<sub>2</sub>-generation 1.3% recombinants and 98.7% progeny with parental type combinations. This observation of Morgan deviated from Mendelian F<sub>2</sub>-phenotypic dihybrid ratio. Explain, giving reasons Morgan's observation

### **FMM**

Q.1 The board of director asked you to design the capital structure of a company. What are the factors you would consider to add?

Q.2 The management of an organisation decided to enlarge the business activities by growing the stock of raw materials and finished products at an estimated cost of Rs. 40 lakhs. Describe the various ways open to an organisation to increase the money for the reason.

### **BUSINESS STUDIES**

Q.1 What is Planning?

Q.2 What are the qualities that are required for planning?

Q.3 State any 3 limitations of planning the functions of management.

### **ECONOMICS**

Q1. Rural Economic development is essential for Indian economy development. Do you agree with the given statements? Put your answer with valid reasons

Q2. "Jan Dhan yojana helps in rural development." Do you agree with the statement? Explain.

Q3. "The Prime Minister urged to increase the rural income by increasing the non-farm activities." Explain how non-farm activities can lead to rise in income of the people in rural sector.

Q4. Discuss the importance of credit in rural development.

Read the following statements carefully. Write True or false with reason

- Landlords, village traders and money lenders are the three elements of institutional rural credit in India.
- Organic farming promotes sustainable development.
- MSP policy is an important step towards improving the agriculture marketing system in India.
- Livestock farming is found to be flourishing in areas where there are permanent means of irrigation.
- Credit is the lifeline of farming activity in India.
- It was with nationalization of commercial banks in 1969 that the concept of social banking was put into practice in India.

### **ACCOUNTANCY**

1. Can the shares be shown as Subscribed and Fully Paid up Share Capital in spite of having Calls in Arrears on such shareholders?

2. Can the Shares be forfeited in spite of being Fully paid up?

3. Can there be a situation when all the shares were reissued and yet there be a balance of Share Forfeited in the Balance Sheet?

4. Share Forfeited is part of Subscribed and Fully paid up Share Capital or Subscribed but not fully paid up share capital?

Forfeiture and reissue of shares

1. Empire Ltd. invited applications for 2,00,000 shares @ Rs 10 each payable on Application Rs 3, On Allotment Rs 5 and Balance on Call. Applications were received for 2,50,000 shares. Pro-rata allotment was made to all the

applicants. All the money has been duly received except allotment money on 8,000 shares held by Raavan. These shares were forfeited and later on re-issued these shares @ Rs. 8 per share as fully paid up. Pass necessary journal Hint:

- Allotment to be received was Rs. 8,50,000 on 2,00,000 shares

- Allotment to be received on 8,000 shares will be :

$$8,50,000 \times 8,000 / 2,00,000 = \text{Rs.}34,000$$

2. Empire Ltd. invited applications for 2,00,000 shares @ Rs 10 each payable on Application Rs 3, On Allotment Rs 5 and Balance on Call. Applications were received for 2,50,000 shares. The company rejected application for 10,000 shares and Pro-rata allotment was made to remaining applicants. All the money has been duly received except allotment money on 8,000 shares held by Raavan. These shares were forfeited and later on reissued 6,000 shares @ Rs. 8 per share as fully paid up. Pass entries. Hint: Allotment to be received was Rs. 8,80,000 on 2,00,000 shares

- Allotment to be received on 8,000 shares will be =

- $8,80,000 \times 8,000 / 2,00,000 = \text{Rs.}35,200$

## IT

Q1. What is Java Bytecode?

Q2. Explain the difference between a Class and an Object with an example.

Q3. What is a constructor? Why is it used?

Q4. How are exceptions handled in Java?

Q5. How can threads be created in Java? Briefly explain with an example.

## COMMERCIAL ARTS

Q.1) The undeniable love of mother towards the child and the compassion & care felt by the child is successfully shown in the following paintings. Justify this statement by describing any one painting given below on the basis of its compositional arrangement.

1)'Mother and Child'

2)'Mother Teresa'

## PHYSICAL EDUCATION

TOPIC- MANAGEMENT OF SPORTING EVENTS

#Functions of Sports Events Management, Planning, Organising, Staffing, Directing and Controlling.