DELHI PUBLIC SCHOOL

SAIL TOWNSHIP,RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI

Subject – Mathematics (Applied)

Time – 3 Hours

Maximum Marks - 80

General Instructions:

1. This Question paper contains - **five sections A, B, C, D and E.** Each section is compulsory. However, there are internal choices in some questions.
2. **Section A** has 18 MCQ's and 02 Assertion-Reason based questions of 1 mark each.
3. **Section B** has 5 Very Short Answer (VSA)-type questions of 2 marks each.
4. **Section C** has 6 Short Answer (SA)-type questions of 3 marks each.
5. **Section D** has 3 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.
6. **Section E** has 4 Long Answer (LA)-type questions of 5 marks each.

SECTION- A

1. Binary representation from decimal of 63 is
   (a) $(1101111)_2$ (b) $(111111)_2$ (c) $(111110)_2$ (d) None of these

2. Decimal representation from binary $(1111010)_2$ is
   (a) 120 (b) 121 (c) 122 (d) None of these

3. Which of the following binary number is representing the decimal number 24?
   (a) 1101111 (b) 11 11 11 (c) 111001 (d) 11000

4. $\sqrt[3]{27^{-2}}$ is equal to
   (a) $\frac{1}{9}$ (b) 9 (c) 1 (d) 8

5. Give $1176 = 2^p.3^q.7^r$, then the value of $2^p.3^q.7^{-r}$ is
   (a) $\frac{49}{24}$ (b) 49 (c) 24 (d) $\frac{24}{49}$

6. Value of $x^{1/2}y^{-1}z^{2/3}$ if $x = 9, y = 2 \& z = 8$ is
   (a) 6 (b) $\frac{1}{6}$ (c) 8 (d) 12

7. The value of $log_5(0.008)$ is
   (a) -3 (b) -4 (c) 3 (d) 4

8. $3 + log_{10}(10^{-2})$ is equal to
   (a) 2 (b) 1 (c) -1 (d) 4

9. If $log_{10} x - log_{10}(2x - 1) = 1$ the x is equal to
   (a) $\frac{19}{10}$ (b) $\frac{10}{19}$ (c) 2 (d) $\frac{1}{2}$

10. If the second day of April month is Friday, then last day of next month is
    (a) Saturday (b) Monday (c) Friday (d) Sunday

11. The angle between two hands of the clock at 3:40 is
    (a) 100^0 (b) 120^0 (c) 90^0 (d) 130^0

12. A car travels at 50 km/hr for first 4 hours of a journey and then travels at 60km/hr for next 4 hours of the journey, then the ratio of the distance travelled with those two speeds is
    (a) 6:5   (b) 3:2   (c) 2:3   (d) 5:6

13. Two finite sets have m and n elements respectively. The total number of subsets of the first set is 192 more than total number of subsets of the second set. The value of m and n respectively are
    (a) 7,6   (b) 8,6   (c) 8,5   (d) 9,7

14. Let A = {3, 5} and B = {7, 11} and R be the relation from A to B defind as
    R = {$(a, b): a\epsilon A, b\epsilon B, |a - b|$ is odd } then which one is the best suitable answer
    (a) R=$A \times$ B   (b) R=ϕ (c) R⊂ $A \times$ B   (d) R⊂ $B \times$ A

15. If R = {$(x, y): x$ and y are whole numbers and $x^2 + y^2 = 169$} then domain of R is
    (a) {0,5,12,13}   (b) {$0, \pm5, \pm12, \pm13$}   (c) φ (d) (5, 12)

16. The domain of the function f defined by f(x) =$\sqrt{a^2 - x^2}$ (a> 0) is
    (a) $(- a, a)$ (b) $[- a, a]$ (c) $[0, a]$ (d) $[- a, 0]$

17. The Domain and range of the real function f defiend by $f(x)$=$\frac{x-2}{2-x}$ are
    (a) $D_f = R - \{2\}, Range = \{-1\}$ (b) $D_f = R - \{-2\}, Range = \{-1\}$
    (c) $D_f = R - \{-2\}, Range = \{1\}$ (d) $D_f = R - \{2\}, Range = \{1\}$

18. If $f(x) = px + q$, where p and q are integers, $f(-1) = 1$ and $f(2) = 13$,the p and q respectively are
    (a) 4,5   (b) $-4,5$ (c) $-4, -5$ (d) $4, -5$

ASSERTION – REASONING TYPE QUESTIONS

Statement I is called Assertion (A) and Statement II is called Reason (R). Read the given statements carefully and choose the correct answer from the options given below:
    a) Both the Statements are true and Statement II is the correct explanation of Statement I.
    b) Both the Statements are true and Statement II is not the correct explanation of Statement I.
    c) Statement I is true , Statement II is false.
    d) Statement I is false ,Statement II is true.

19. **Assertion (A):** A number written in decimal form is converted into tertiary number system i.e. is base 3 system, given number is divided repeatedly by 3 and collecting the remainders.
   Reason (R): A number written in decimal form is converted into binary number system i.e. is base 2 system, given number is divided repeatedly by 2 and collecting the remainders.

20. **Assertion (A):** $\log 0.0007392 = -3.1313, \quad log\ 73.92 = 1.8687$
   Reason (R): Mantissa is taken always proper positive fraction while characteristic may be either positive or negative integer.

SECTION – B

21. (i) Convert decimal number 517 to the binary number.
   (ii) Convert binary number 11111001 to the decimal number.

22. If $abc = 1$, then show that
$$\frac{1}{1+a+b^{-1}} + \frac{1}{1+b+c^{-1}} + \frac{1}{1+c+a^{-1}} = 1$$

23. In an examination the average marks scored by a class of 40 students was calculated as 72.5.Later on, it was detected that the marks of one student was wrongly copied as 48 instead of 84. Find the correct average.

OR

5 years ago, the average age of the 3 children of a family was 8 years. A new baby is born in the family now. Find the present average age of the children.

24. If A and B are two sets and $\mathcal{U}$ is the universal set such that $n(\mathcal{U}) = 700$, n (A) = 290, n (B) =240, n (A∩ B) = 110, then find $n\ (A' \cap B')$.

OR

Out of 500 car owners investigated, 400 owned car A and 200 owned car B, 50 owned both A and B cars. Is the data correct? Justify answer.

25. If $f(x) = x - \frac{1}{x}$, prove that $\{f(x)\}^3 = f(x^3) + 3f\left(\frac{1}{x}\right)$.

SECTION – C

26. If $x = \sqrt[3]{28}$ and $y = \sqrt[3]{27}$,find the value of $x + y - \frac{1}{x^2+xy+y^2}$.

27. Solve for x: $log_2x + log_4x + log_{16}x = \frac{21}{4}$

OR

If $a = log_xyz,\ b = log_yzx$ and $c = log_zxy$, then prove that $\frac{1}{1+a} + \frac{1}{1+b} + \frac{1}{1+c} = 1$

28. A man covered a certain distance at some speed. If he had moved 5km/hr. faster, he would have taken 1 hour less. If he had moved 3km/hr. slower, he would have taken 1 hour more . What is the distance in km?

OR

Machine P is 40% more efficient than machine Q. Machine P can produce 100 bags alone in 30 hours. Find the time taken to complete the order if both the machines work together.

29. If $U = \{1,2,3,4,5,6,7,8,9,10,11,12\}, A = \{1,2,3\}, B = \{2,4,6\}\ C = \{3,6,9,12\}$, verify the following statements:
(i) $(A \cap B)' = A' \cup B'$
(ii) $A' \cup B = (A \cap B')'$
(iii) $A' \cap (B \cup C) = (A' \cap B) \cup (A' \cap C)$

30. Find the domain and range of the function:
(i) $f(x) = \frac{1}{\sqrt{9-x^2}}$

(ii) $f(x) = \frac{x+2}{|x+2|}$

31. A person consumed $19m^3$ of water in one month. Calculate his water bill for that month. Tariff plan is given below:

Monthly consumption (in m^3)	Water changes per m^3 (in Rs.)
upto 15	Rs.3.5
15-25	Rs.9
25-50	Rs.16
>50	Rs.25

Mater rent = Rs.40 and severage charge is 25% of water charge, surcharge = 2%

SECTION -D
Case Study Based Questions:

32. Nine persons A,B,C,D,E,F,G,H and I are sitting in a row. E is at one end of the row. B is seated adjacent to F and I. C is to the immediate right of D and at fourth place to right of A. H is immediate left of G. G is at sixth place to the let of E.F is immediately right of C.
    From the above information, answer the following questions.
    (i) Who is sitting at the centre of the row?   (1)
    (ii) Who is at other end of the row?   (1)
    (iii) What is the position of I with respect to G.   (2)
    >   OR
    If all the friends are allowed to sit alphabetically from left to right, then positions of how many friends will remain unchanged?

33. With corona virus threatening to run riot in India, preventions appears to be the best cure available so far. A survey was conducted on 25 persons to see if proper precautions were being taken by people and following points were observed.
    (a) 15 persons used face masks.
    (b) 14 consciously maintained social distancing
    (c) 5 used face masks and washed their hands regularly.
    (d) 9 maintained social distancing and used face mask.
    (e) 3 were practicing all the three measures.
    (f) 4 maintained social distancing and wash hands regularly.
    (g) 4 practiced only social distancing norms.
    Assuming that everyone took at least one of the precautionary measure. From the above informations, answer the following questions:-
    (i)   How many exercised only wearing masks?   [1]
    (ii)   How many practised social distancing and washing hand but not wearing masks?   [1]
    (iii)   How many exercised only washing hand as precautionary measure?   [2]

34. Let f and g be two real functions defined by $f(x) = \sqrt{x-1}$ and $g(x) = 3 - 2x$.
    Based on the above informations, answer the following
    (i)   Find the domain of $\frac{1}{g}$.   [1]
    (ii)   Find the domain of f+g   [1]
    (iii)   Find the domain of $\frac{g}{f}$ [1]
    (iv) Find the domain of fog [1]

35. Let the population of the world in t years after 2010 be given by the formula $P=4.7\,(1.02)^t$ billions.

    (i) Calculate the total population of the world in the year 2029 to the nearest million.

    (ii) Find the year in which the population will be double the population of 2020.

    OR

    The value of a machine depreciate at the rate of 7% per annum. If its present value is Rs.8,00,000 , find its value after 10 years.

36. **A** can do a work in 10 days and **B** can do it is 15 days. They worked together for 4 days and then **A** left the work. In how many days can **B** finish the remaining work? If the remuneration for the work is one thousand rupees, how much amount would each get?

    OR

    The efficiency of x,y,z are in the ratio 3:2:6 to finish a task. If they work together they can finish it in 2 hours. Find the time taken by them, if they do the task individually?

37. In an University, out of 100 students; 15 offered mathematics only; 12 offered statistics only, 8 offered physics only; 40 offered physics and mathematics; 20 offered physics and statistics; 10 offered mathematics and statistics, 65 offered physics. Find the number of students who

    (i) offered mathematics

    (ii) offered statistics

    (iii) did not offer any of the above three subjects.

    OR

    A school awarded 58 medals for honesty, 20 for punctuality and 25 for obedience. If these medals were bagged by a total of 78 students and only 5 students got medals for all the three values, find the number of students who received medals for exactly two of the three values

38. The reading of electric meter of a house is found to be 5678 units. If the previous month's reading was 4803 units and the connection load is 4kW, calculate the electricity bill for that month. Tariff plan is given below:-

    Energy charges:

Number of units	0-150	151-300	301-500	>500
Price per units (in Rs.)	Rs.5.50	Rs.6.00	Rs.6.50	Rs.7.00

    Fixed charges Rs.110 per kW/month

    Energy tax is 5% of tariff rates

    Surcharge is Rs. 0.26 per unit

DELHI PUBLIC SCHOOL
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HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – Accountancy**
Time – 3 Hours   **Maximum Marks - 80**

General Instructions:
1. This paper contains 34 questions. All questions Compulsory. There is no overall choice, however, there is an internal choice of 2 questions of 1 mark, 2 questions of 3 marks.
2. Attempt all parts of a question together.

1. According to which of the following concepts, Transactions between the business and its owners are recorded from the business point of view considering that both are separate entities.
(a) Going Concern Concept   (b) Business Entity Concept
(c) Consistency Concept   (d) None of these   [1]

2. M/S Arya enterprise closes its books of accounts on 31st March every year. Insurance premium of Rs. 24,000 paid for one year on 1st July, 2023. Unexpired insurance on 31st March, 2024 will be ___
(a) Rs. 6,000   (b) Rs. 12,000   (c) Rs. 18,000   (d) None of these   [1]

3. Providing Depreciation on Fixed Assets is in accordance with which of the following principles/concepts?
(i) Going Concern Concept
(ii) Matching Concept
(iii) Materiality concept
(a) (i) & (ii)   (b) (ii) & (iii)   (c) (i) & (iii)   (d) None of these   [1]

4. M/S Fortune & Sons invested Rs. 10,00,000 in the shares of Real Time Ltd. The present market value of the shares is Rs. 12,00,000. The accountant of M/S Fortune & Sons wants show Rs. 12,00,000 as the value of investment in the books of accounts. Identify, which of the following accounting convention restricts him to do so?
(a) Full Disclosure   (b) Consistency
(c) Conservatism   (d) None of these   [1]

5. A document which provides evidence of the transactions is called _____
(a) Source Document   (b) Voucher
(c) Both (a) and (b)   (d) Neither (a) Nor (b)   [1]

6. Purchases Book and Sales book are a part of _____
(a) Journal   (b) Ledger
(c) Balance Sheet   (d) None of these   [1]

7. According to the accrual basis of accounting, sales is recognized as revenue _____
(a) At the time of entering into the contract of sale
(b) At the point of sale or performance of service
(c) On expiry of credit period allowed to the customer
(d) After collecting the money dues from the debtor   [1]

8. Recording of a business transaction affects _____ number of accounts.
(a) Only One   (b) Only Two
(c) At least Two   (d) All of these   [1]

(OR)

Balance Brought Down of a Petty Cash Book is _____
(a) A Profit   (b) An Expense
(c) An Asset   (d) An Income

9. Raman has returned goods worth Rs. 50,000 to Suman as he found that the goods are defective. Which of the following documents will be prepared by Suman ?
   (a) Invoice/Bill   (b) Debit Note
   (c) Credit Note   (d) None of these   [1]

10. In a business firm the term 'Purchases' refers to the _____
    (a) Purchase of an article to be used in office.
    (b) Purchase of goods for resale.
    (c) Purchase of an asset to be used in factory
    (d) All the above   [1]

11. Which of the following is not a limitation of accounting?
    (a) Window Dressing
    (b) It ignores the effect of price level changes
    (c) It ignores qualitative elements
    (d) Can be used as evidence in court   [1]

12. Which of the following is known as 'Principal Book of Accounting?'
    (a) Ledger   (b) journal
    (c) Balance Sheet   (d) None of these   [1]

13. When the total of debit side of an account exceeds than that of its credit side, it is called _____
    (a) Debit Balance   (b) Credit Balance
    (c) Expenses / Losses   (d) Incomes / Gains   [1]

    (OR)

    Which of the following accounts always shows a debit balance?
    (a) Drawings A/C   (b) Purchases A/C
    (c) Returns Inwards A/C   (d) All the above

14. Received Rs. 2,900 from Gayatri in full settlement of Rs. 3,000.
    Posting of Rs. 100 will be made to the _____
    (a) Debit side of Gayatri's A/C   (b) Credit side of Gayatri's A/C
    (c) Debit side of Discount A/C   (d) Credit side of Discount A/C   [1]

15. Good Will Account is a _____
    (a) Personal Account   (b) Nominal Account
    (c) Real Account   (d) None of these   [1]

16. Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R)
    Assertion (A): Accounting has a wider scope than Book Keeping.
    Reason (R): Book keeping involves recording, classifying, summarizing and analyzing the financial transactions. In the context of the above statements, which one of the following is correct?
    (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
    (b) Both (A) and (R) are true and (R) is not the correct explanation of (A).
    (c) (A) is True But (R) is False.
    (d) (A) is False But (R) is True.   [1]

17. Trade Discount allowed _____
    (a) Is shown separately in the books of accounts
    (b) Is not shown in the books of accounts
    (c) Can be shown either separately or deducted from purchase cost.
    (d) None of the above   [1]

18. At time of sale of goods, output CGST / SGST account is credited because it is a/an _____
    (a) Revenue/Income   (b) Accrued Income
    (c) Asset   (d) Liability   [1]

19. Goods sold costing Rs. 60,000 to M/S Kalu & Sons at an Invoice Price 10% above cost less 5% Trade discount. M/S Kalu & Sons account will be debited with _____
    (a) Rs. 60,000   (b) Rs. 66,000   (c) Rs. 62,700   (d) None of these   [1]

20. Outstanding Expenses A/C is an example of _____
    (a) Artificial Personal account
    (b) Representative Personal account
    (c) Natural Personal Account
    (d) None of these   [1]

21. Explain any three advantages of accounting briefly.   [3]
    (OR)
    Explain the branches / types of accounting information briefly.

22. What do you mean by GST? Explain any two characteristics of GST?   [3]
    (OR)
    "Accounting Standards ensure the consistency and comparability of Financial Statements." Explain.

23. What are the two systems of accounting? Explain in brief.   [3]

24. Name any three users of accounting information and explain their needs briefly.   [3]

25. **Read the Hypothetical Text given below:**
    Mr. Sushil started a business for buying and selling of stationery, with Rs. 5,00,000 as an initial investment. Of which he paid Rs. 1,00,000 for furniture, Rs. 50,000 for computer, Rs. 2,00,000 for buying stationery items. He took a Loan from Bank Rs. 1,50,000. He employed a sales person Mr. Joy and clerk Mr. Jhony. At the end of the first month he paid Salaries Rs. 5,000, Rent of shop Rs. 7,500 and Electricity Bill Rs. 500. Out of the stationery bought, he sold some stationery for Rs. 1,50,000 for cash and some stationery for Rs. 1,00,000 on credit basis to Mr. Ramesh. Subsequently, he bought stationery items of Rs. 1,50,000 from Mr. Somesh. In the first week of second month there was a fire accident and he lost Rs. 30,000 worth of stationery which was not insured against fire accident. A part of the furniture (Cost Price Rs. 25,000) was sold for Rs. 31,500 in the second month.

    Answer the following questions:

    (i)   What is the amount of capital with which Mr. Sushil started the business?
          (a) Rs. 6,50,000   (b) Rs. 5,00,000
          (c)Rs. 1,50,000   (d) None of these

    (ii)   Who is the Creditor for business and by how much?
          (a) Mr. Somesh & Rs. 1,50,000   (b) Mr. Ramesh & Rs. 1,00,000
          (c) Mr. Somesh & Rs. 3,50,000   (d) None of these

    (iii)   Mr. Sushil's Total Expenses at the end of the first month were _____
          (a) Rs. 12,500   (b) Rs. 13,000
          (c) Rs. 8,000   (d) Rs. None of these

    (iv)   The Gain for the business in the second month was _____
          (a) Rs. 6,500   (b) Rs. 30,000
          (c)Rs. 31,500   (d) None of these   [4x1=4]

26. Explain the following briefly: (Give suitable examples)
    (a) Objectivity Concept
    (b) Materiality Concept   [2+2=4]

27. Enter the following transactions in proper Subsidiary Books of M/S Gupta Trader, Mumbai , who is dealing in stationery items, for the month of July, 2022. [4]

01	Bought from Rahul Traders, Mumbai
	40 Registers @ Rs. 60 each
	80 Gel Pens @ Rs. 15 each
	50 Note Books @ Rs. 20 each
	Trade discount 10%
15	Bought from Global Stationers, Mumbai
	40 Ink Pads @ Rs. 8 each
	50 Files @ Rs. 10 each
	20 Drawing Books @ Rs. 20 each
	Trade Discount 5%
23	Purchased from Lamba Furniture house, Mumbai
	2 Chairs @ Rs. 600 per Chair
	1 Table @ Rs. 1,000 per Table
25	Bought from Mumbai Traders, Mumbai
	10 Reams of Paper @ Rs. 100 per Ream
	400 Drawing Sheets @ Rs. 3 each
	20 Packets of water colour @ Rs. 40 per Packet.

28. (a) Calculate the Total Assets, if,
Capital was Rs 80,000 , Creditors were Rs. 50,000, Revenue during the period was Rs. 1,00,000 and Expenses during that period were Rs. 80,000.

(b) On 1st April 2022, Manav started a business with a Capital of Rs. 50,000 and a Loan of Rs. 25,000 borrowed from his friend. During 2022 –'23 he earned a profit of Rs. 25,000, introduced an Additional Capital of Rs. 30,000 and had withdrawn Rs. 15,000 for his personal use.
On 31st March, 2023, the total assets of the firm were Rs. 2,00,000.
Calculate the amount of External Liabilities as on 31st March, 2023.
(Show your working notes) [1+3=4]

29. Mr. Ravi Kiran deals in Furniture. He entered into the following transactions during the month ended on 31st April, 2023.

April 2	Sold to M/S Khanna Furniture House, Delhi:
	5 Round Tables @ Rs. 50,000 each
	10 Almirahs @ Rs. 20,000 each
	Less : Trade Discount 10%
April 10	M/S Khanna Furniture House, Delhi, returned:
	1 Round Table out of the above
April 20	Sold to M/S Gupta Stores, Delhi:
	40 Chairs @ Rs. 4,000 each
	10 Round Tables @ Rs. 52,000 each
	Less : Trade Discount 20%
April 29	Sold Old Printer for Rs. 2,000 to Ganesh Bros. Delhi

You are required to answer the following questions:
(i) The Total of the Sales Book for the month of April, 2023 will be _____
   (a) Rs. 9,04,000   (b) Rs. 9,49,000   (c) Rs. 9,51,000   (d) Rs. 9,06,000

(ii) The Total of the Sales Book is posted to the _____
   (a) Debit of Sales A/C   (b) Credit of Sales A/C
   (c) Debit of Customer's A/C   (d) Credit of Customer's A/C

(iii) Which of the following is not a Subsidiary Book?
   (a) Purchase Book   (b) Purchase Returns Book   (c) Journal Proper   (d) Ledger

(iv) Debit Note is the source of writing _____
   (a) Sales Return Book   (b) A sale to a person
   (c) A debit entry in an account   (d) Journal Proper   [4x1=4]

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30. Record Journal entries for the following transactions in the books of Amandeep, Delhi.
(Assume that all the transactions of payments and receipts are performed through bank .
Ignore Journal Entry for SET OFF OF GST.)
(i)   Bought goods worth Rs. 2,00,000 from Kanta of Delhi.(CGST @ 9%, SGST @ 9%)
(ii) Paid for Transportation to Delhi Transporters, Delhi Rs. 10,000. (CGST @ 5%, SGST @ 5%)
(iii) Sold goods worth Rs. 1,20,000 to Sindhu of Delhi. (CGST 9%, SGST 9%)
(iv) Bought Motor Cycle locally, for business use Rs. 50,000. (CGST @ 14%, SGST @ 14%)   [4]

31. M/S Ruchi traders started their Cash Book with the following balances on 1st July, 2023:
Cash in Hand Rs. 1,354 and Balance in bank current account Rs. 7,560. He had the following
transactions in the month of July 2023.

		Rs.
05	Purchased goods, paid by cheque.	6,000
08	Cash sales	10,000
12	Cash deposited in Bank	5,000
15	Sold goods, received cheque (deposited in bank)	20,000
18	Purchased Motor Car and paid by cheque	15,000
20	Cheque received from Manisha (deposited in bank)	10,000
25	Manisha's Cheque returned, dishonoured.	
28	Paid Rent	2,000
29	Paid Telephone expenses by Cheque	500
31	Cash withdrawn from bank for office use	2,000
	Prepare Double column Cash Book.	[6]

32. **Prove that the accounting equation is satisfied in all the following transactions of Sri Ram house by preparing the analysis table.**
(i)   Business commenced with a capital of Rs. 6,00,000.
(ii)   Rs. 4,50,000 deposited in a bank account.
(iii) Rs. 2,30,000 Plant and Machinery purchased by paying Rs. 30,000 cash immediately.
(iv)   Purchased goods worth Rs. 40,000 for cash and Rs. 45,000 on account from Surya.
(v)   Paid a cheque of Rs. 2,00,000 to the supplier for Plant and Machinery.
(vi)   Rs. 70,000 cash sales (of goods costing Rs. 50,000).
(vii) Withdrawn by the proprietor Rs. 35,000 cash for personal use.
(viii) Insurance paid by cheque of Rs. 2,500.
(ix)   Salary of Rs. 5,500 was outstanding.
(x)   Furniture of Rs. 30,000 was purchased for cash.   [6]

33. **Draw Journal entries for the following transactions in the books of M/S Manoj Traders:**
2023
March 1   Purchased an old machinery for Rs. 1,00,000 , spent Rs. 5,000 on its carriage
and Rs. 20,000 on its immediate repairs.
March 5   Sahil who owed us Rs. 50,000 was declared insolvent and 40% is received as
full and final payment.
March 10   Sold goods to Hari for Rs.80,000 at 20% Trade Discount and 5% Cash
Discount. Hari paid 50% through cheque immediately and the cheque is
deposited in Bank on the same day.
March 15   (i) Goods destroyed by fire worth Rs. 40,000.
(ii)Insurance Company admitted a fire insurance claim of Rs. 40,000.
March 31   Wages and Salaries were Outstanding for the month of March, 2023,
Rs. 10,000 and Rs. 15,000 respectively.
March 31   Paid Income Tax Rs. 25,000 and Life Insurance Premium Rs. 12,000.
March 31   Received a V.P.P from Raghunandan for Rs. 30,000. Sent a peon to collect it
and he paid Rs. 150 as cartage.   [6]

34. Prepare an Analytical Petty Cash Book with suitable columns on the Imprest System from the following: (Amount of Imprest is Rs.1000) [6]

2023	
April 1	Received Rs. 1,000 for Petty Cash
April 3	Paid Cartage Rs. 80
April 4	Paid Bus Fare Rs. 40 ; Speed Post Rs. 20.
April 6	Paid for Stationery Rs. 70.
April 7	Paid for Courier Services Rs. 30.
April 9	Paid for Taxi Fare Rs. 80 ; Wages Rs. 30.
April 10	Paid for Wages Rs. 40 ; Charity Rs. 50
April 11	Paid for News Paper Bill Rs. 60.
April 12	Paid for Lock Repair Rs. 32; Speed Post Charges Rs. 30.
April 13	Paid for Postage Rs. 78.
April 14	Paid for Repairs of Chairs Rs. 50.
April 15	Paid for Refreshments to customers Rs. 90.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION   (2024-25)

Class - XI   **Subject – Biology**
Time –3 Hours   **Maximum Marks- 70**

General Instructions:

(i) All questions are compulsory.

(ii) The question paper has five sections and 33 questions. All questions are compulsory.

(iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.

(iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

(v) Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION A

1. Match the following columns and select the correct option:

Column I (Common Name)	Column II (Taxonomic Category/order)
A. Housefly	1. Primata
B. Wheat	2. Carnivora
C. Tiger	3. Polymoniales
D. *Solanum*	4. Diptera
	5. Poales

(a) A-4, B-3, C-2, D-2

(b) A-4, B-5, C-2, D-3

(c) A-2, B-5, C-4, D-3

(d) A-5, B-4, C-3, D-2

2. The class of fungi, which does not produce asexual spores, is
   (a) Phycomycetes
   (b) Deuteromycetes
   (c) Ascomycetes
   (d) Basidiomycetes

3. Match the items of Column I with those in Column II

Column I	Column II
A. Cytoaxonomy	1. Evolutionary relationships
B. Chemotaxonomy	2. All characters are given equal importance
C. Phylogenetic classification	3. Chromosome number, structure and behaviour
D. Numerical taxonomy	4. Chemical constituents of plants

(a) A-3, B-4, C-2, D-1

(b) A-4, B-3, C-2, D-1

(c) A-3, B-4, C-1, D-2

(d) A-4, B-3, C-1, D-2

4. The excretory organs of Platyhelminths, are
   (a) nephredia
   (b) flame cells
   (c) nephrons
   (d) kidneys

5.
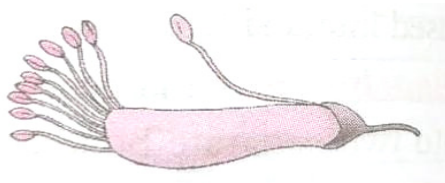
The androecium shown above, is
   (a) monadelphous as in bean
   (b) monadelphous as in china rose
   (c) diadelphous as in bean
   (d) diadelphous as in china rose

6. The flower which is asymmetric is of
   (a) bean
   (b) Canna
   (c) pea
   (d) Cassia

7. During hibernation, a frog respires mainly by
   (a) lungs
   (b) moist skin
   (c) gills
   (d) buccal cavity

8. Match Column I with II and choose the correct option.

Column I	Column II
A. Bulliform cells	1.Single-layered
B. Guard cells	2.Waxy layer
C. Cuticle	3.Empty, colourless cells
D. Epidermis	4.Stomata apparatus

   (a) A-3, B-4, C-2, D-1
   (b) A-4, B-3, C-1, D-2
   (c) A-2, B-3, C-4, D-1
   (d) A-3, B-1, C-4, D-2

9. Identify the correct statements about gymnosperms and select the option with all correct statements.
   A. In gymnosperms, the male and the female gametophytes are free-living and independent.
   B. All gymnosperms are heterosporous and produce spores in the cones.
   C. *Pinus* is monoecious with branched stem.
   D. *Cycas* is dioecious with a branched stem.
   (a) A and B   (b) A and D
   (c) B and C   (d) B and D

2

10. Mouth is ventral (on the lower side) and anus is on the upper (dorsal) side of the body in the animals belonging to the phylum.
    (a) Mollusca
    (b) Arthropoda
    (c) Echinoderma
    (d) Hemichordata

11. Venation is a term used to describe the pattern of arrangement of
    (a) Floral organs
    (b) Flower in inflorescence
    (c) Veins and veinlets in a lamina
    (d) All of them

12. Vasa efferentia in frogs arise from 1 and open into 2.
    (a) 1. Testis,   2. Bidder's canal
    (b) 1. Testis,   2. urethra
    (c) 1. Kidneys   2. Bidder's canal
    (d) 1. Kidneys,   2. urethra

Question No. 13 to 16 consist of two statements, Assertion (A) and Reason(R). Answer these questions selecting the appropriate option given below
    (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
    (b) Both Assertion and Reason, but true and Reason is not the correct explanation of Assertion.
    (c) Assertion is true, but Reason is false
    (d) Assertion is false, but Reason is true

13. Observe the diagram of *Nostoc* and comment upon the appropriateness of the Assertion and the Reason.
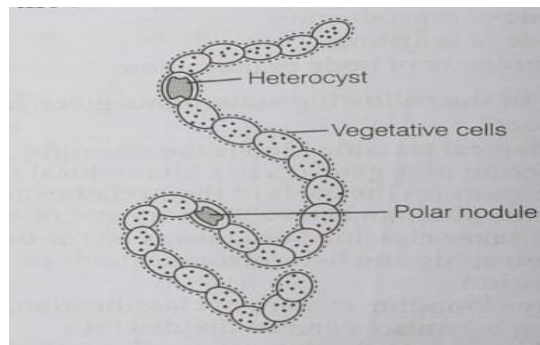
Assertion (A): *Nostoc* are prokaryotic and are often grouped with bacteria. They are kept in cyanobacteria since, they are able to photosynthesise.

Reason (R): These blue-green bacteria can tolerate adverse conditions very well as compared to other aquatic plants.

14. **Assertion (A):** Production of two types of spores is a pre-requisite of seed habit.

   Reason (R): In pteridophytes, *Lycopodium* is precursor of seed habit.

15. Figure given below represents monoadelphous condition of stamens. Study the figure given below and comment upon the appropriateness of the Assertion and the Reason.

Assertion (A): Monoadelphous stamens are found in China rose.
Reason (R): When the Stamens is united into one bunch or bundle, the condition is said to be monoadelphous.

16. **Assertion** (A): Vascular bundles in monocots are considered closed.
Reason(R): A bundle sheath surrounds each vascular bundle in monocots.

SECTION-B

17. The heterotrophic bacteria are the most abundant in nature and have a significant impact on human affairs. Mention any four effects of bacteria on human affairs

18. (a) What are hydrocolloids?
(b) Name the hydrocolloid produced by (i) brown algae and (ii) red algae, respectively.

19. Some animals of phylum 'Cnidaria' show metagenesis. What is it? Give an example of animal that shows metagenesis.

20. (a) Mention two adaptations the conifers have, to check water loss from the plant.
(b) Which of them can fix atmospheric nitrogen – Mycorrhiza of *Pinus* or Coralloid roots of *Cycas*? Why?

21. Epidermal cells are often modified to perform specialised functions in plants. Name some of them and the functions they perform.
**OR**
(a) What type of cells make up the pericycle in dicot roots?
(b) Mention two functions of pericycle in dicot roots.

SECTION-C

22. (a) Why are Deuteromycetes commonly known as imperfect fungi? Mention two characteristics of mycelium of such fungi.
(b) Mention the two events which occur in a basidium, as soon as it is formed.

23. The taxonomic categories are distinct biological entities and not merely morphological aggregates. Each category is referred to as a unit of classification, and is termed as taxon:
(a) Name the (i) highest and (ii) lowest categories in the taxonomic hierarchy
(b) Name the category of the taxa (i) *Felidae* and (ii) *Insecta* belong to.
(c) What is the basic requirement for placing the organisms in different categories? How does it help in doing this?

24. **Give reasons for the following:**
(a) Gymnosperms are called naked-seeded plant
(b) *Selaginella* and *Salvinia* show characteristics that are considered as precursor to seed habit.
(c) The spread of living pteridophytes is restricted to narrow geographical regions.

OR

(a) Write any two ecological significance of algae.

(b) Both bryophytes and pteridophytes require water for fertilisation; yet they differ from each other in many aspects. Bring out any two differences between them.

(c) How are the male and female gametophytes of pteridophytes and gymnosperms different from each other? Give two points.

25. Mammals and birds (Aves) are vertebrates and homoiotherms. They show double circulation, but, differ in many other aspects.

(a) Write any two adaptations/modifications, a bird has, for its aerial mode of life.

(b) Bring out any four differences between Aves and mammals.

26. Explain the following with examples

(a) Actinomorphic and zygomorphic flowers

(b) Epipetalous and Epiphylous stamens

(c) syncarpous and apocarpous ovaries

27. The diagrammatic representation of stomatal apparatus of a dicot plant is shown below. Answer the question that follow:
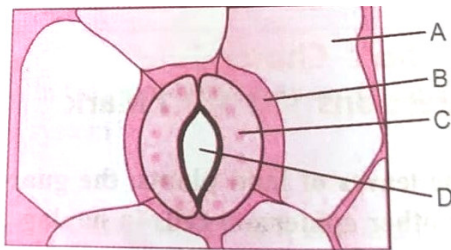
(a) Identify the parts labelled A, B, C and D.

(b) How does C differ from B?

28. (a) Describe the two types of venous connections/portal system in the circulatory system of a frog.

(b) Mention the function of the following in case of frog:

(i) Sinus venosus

(ii) Conus arteriosus.

SECTION D

29.
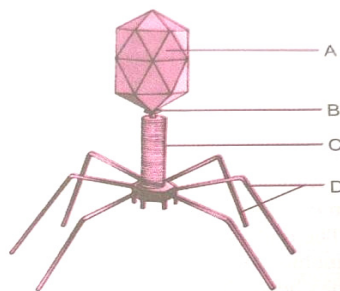
A diagram of a bacteriophage is given above.

(a) What are bacteriophages?

(b) Name the generic material in bacteriophages.

(c) Label the parts A, B, C and D marked in the diagram.

OR

(c) Expand TMV. How does it differ from a bacteriophage?

5

30. Study the two animals (fishes), A and B in the picture given below and answer the questions that follow

A
B
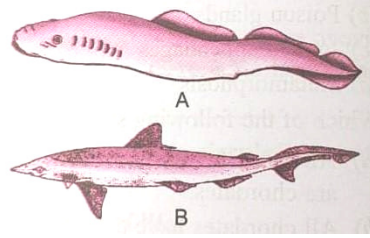
   (a) Identify and write the scientific names of the animals, A and B
   (b) Name the class, which each of them belongs to.
   (c) (i) Write the characteristic features in the reproduction of 'A'.
       (ii) Why should the animal 'B' swim constantly?
                        OR
   (c) Write four similarities in the characteristics of the two animals.

SECTION E

31. (a) Describe the different levels of organisation of body of animals with an examples for each.
    (b) Bring out differences between *Petromyzon, Scoliodon* and *Labeo*
    (c) What is radula? Give its role.
                        OR
    (a) Write an account on the symmetry of animals.
    (b) Name and differentiate between the two types of circulatory system and give an example of each type.
    (c) Mention two unique features that help
        (i) Reptiles survive on land
        (ii) Platyhelminthes to live as an endoparasite.
    `

32. (a) What is meant by phyllotaxy ? Describe the difference type of phyllotaxy with an example of each type.
    (b) Give the differences between racemose and cymose inflorescence.
                        OR
    (a) State the conditions in which flowers are described as
        (i)   perigynous
        (ii)   epigynous
        (iii)   hypogynous
        Give an example of each plant in which these flowers are found.

    (b) (i) Flower is a modified shoot. Justify
        (ii) Differentiate between stamen and staminode

33. (a) Give a brief account of the alimentary canal of frog.
    (b) The nervous system of frogs is highly evolved and function for control and coordination of the functions of different organs along with the endocrine glands. Describe the organisation of nervous system and its components in a frog
    (c) A frog has different types of sense organs. Explain them.
                        OR
    (a) Describe the male reproductive system of frog along with the labelled diagram of the same.
    (b) Frogs exhibit sexual dimorphism. How is a male frog different from a female frog?
    (c) What is bidder's canal? Give its significance.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI	**Subject – Business Studies**
Time – 3 Hours	**Maximum Marks-80**

General Instructions:
  (i)   Answers to questions carrying 1 Mark may be from one word to one sentence.
  (ii) Answers to questions carrying 3 Marks may be 50-75 words.
  (iii) Answers to questions carrying 4 Marks may be about 150 words.
  (iv) Answers to questions carrying 6 Marks may be about 200 words.
  (v)   Attempt all parts of a question together.

SECTION - A

1. _____is a firm or person who acts as a link between parties while carrying out a business transaction.   [1]
   (a) Merchant Banker   (b) Indigenous Banker
   (c) Shroff   (d) Intermediary

2. _____ arise due to change in market condition.   [1]
   (a) Speculative Risk   (b) Pure Risk
   (c) Uncertainty   (d) Profit

3. Define entrepot trade.   [1]

4. Warehousing facilities the availability of goods as and when required. By doing this, which of the following utilities are provided by warehousing?   [1]
   (a) Place Utility   (b) Time Utility
   (c) Both (a) and (b)   (d) Neither (a) nor (b)

5. Suppose Akash is a shareholder in a company holding 200 equity shares of rs.10 each on which he has already paid rs.6 per share. In the event of losses or the company's failure to pay debts, Akash is liable to pay: [1]
   (a) Rs.2,000   (b) Rs.1,200
   (c) Rs.800   (d) Rs.3,200

6. This document is described as the Charter of the Company.   [1]
   (a) Prospectus   (b) Articles of Association
   (c) Memorandum of Association   (d) None of these

7. Provision of residential accommodation to the members at reasonable rates is the objective of:
                                                                                     [1]
   (a) Producers' Cooperative   (b) Consumers' Cooperative
   (c) Housing Cooperative   (d) Credit Cooperative

8. A partner who allows the use of this name and goodwill for the benefit of the firm and can represented as a partner is known as: [1]
   (a) Active Partner   (b) Sleeping Partner
   (c) Nominal Partner   (d) Secret Partner

9. Which of the following is a merit of Sole Proprietorship? [1]
   (a) Quick Decision Making   (b) Direct Incentive
   (c) Ease of Formation and Closure   (d) All of these

10. _____is financed by the government through the allocation of funds in the
    Annual General Budget of Parliament: [1]
    (a) Departmental Undertaking   (b) Statutory Corporation
    (c) Government Company   (d) None of these

11. PSEs are organizations owned by: [1]
    (a) Joint Hindu Family   (b) Government
    (c) Foreign Companies   (d) Private Entrepreneurs

12. Which of the following is a merit of Departmental Undertaking? [1]
    (a) Operational Flexibility   (b) Freedom from Interference
    (c) Autonomous Set-up   (d) Answerable to Parliament

13. A government company is any company in which the paid-up capital held by the government
    is not less than: [1]
    (a) 49%   (b) 51%
    (c) 50%   (d) 25%

14. Centralised control in MNCs implies control exercised by: [1]
    (a) Branches   (b) Subsidiaries
    (c) Headquarters   (d) Parliament

15. Sanyam insures his house for R.4,00,000 with Max Insurance and Rs.8,00,000 with Mini
    Insurance. Sanyam incurs a loss of Rs.4,80,000. Now, the liability of Max Insurance and Mini
    Insurance will be: [1]
    (a) Rs.2,40,000, Rs.2,40,000   (b) Rs.4,80,000, Rs.0
    (c) Rs. 0, Rs.4,80,000   (d) Rs.1,60,000, Rs.3,20,000

16. According to _____the insurer gets all rights against the third party concerningthe
    subject- matter insured, after compensation of the loss of the insured. [1]
    (a) Principle of Subordination
    (b) Principle of Contribution
    (c) Principle of Mitigation
    (d) Principle of Indemnity

17. Every partner acts in the capacity of: [1]
    (a) An agent as well as principal
    (b) Only agent of the firm
    (c) Only the principal of the firm
    (d) None of these

18. There is a full guarantee by the issuing bank branch about its payment to the payee. So, there is
    no risk of _____getting dishonoured. [1]
    (a) Bank Draft   (b) Cheque
    (c) Both (a) and (b)   (d) None of these

19. **Read the following statements carefully and choose the correct alternative from the following:**

   Statement 1: Primary Industries can be further classified as the manufacturing industry and the construction industry.

   Statement 2: Tertiary Industry tries to remove various hindrances that arise during the production and distribution of goods and services.

   Alternatives:
   (a) Both the statements are true
   (b) Both the statements are false
   (c) Statement 1 is true and Statement 2 is false
   (d) Statement 2 is true and Statement 1 is false   [1]

20. Read the following statements: Assertion and Reason. Choose one of the correct alternatives given below:

   Assertion (A): Global Enterprises significantly influence the international economy.

   Reason (R): Global Enterprises are huge, deal in a large number of products use advanced technology and have a network of operations all over the world.

   Alternatives:
   (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 Rease (R) is True.   [1]

SECTION – B

21. P and R are the two partners of the firm. The firm is looking for a lender who can invest in a business. In a social gathering Mr. Q (a close friend of P) talks to the host of the party Mr. A about the growth prospects of the partnership firm of P and R. Mr. A is impressed and is convinced to invest in the business. What type of partner is Mr. Q? Explain this type of partnership.   [3]

22. What is Business Risk? What are the causes of Business Risk?   [3]

23. Write a note on various telecom services available for enhancing business.   [3]

24. Distinguish between 'Statutory Corporation' and 'Government Company' based on: [3]
   (i) Finance   (ii) Formation   (iii) Ownership

SECTION – C

25. Mansi is running a general store. The store was insured against naturaldisasters like floods, earthquake and fire from Hindustan General Insurance Company for Rs 50 lacs.Heavy rain in the city caused massive floods. This left the store without any security. The store was looted by people who were caught on CCTV. She claimed from the insurancecompany the amount of damage of 13 lacs for the material and furniture spoiled from floodand also Rs 5 lacs for the loss of material by theft, she claimed another Rs 25 lacs for now converting the store into fully AC and adding a floor for more storage space. Insurance company after assessing the damage to the property and loss of stock due to the flood and seeing the CCTV footage accepted the claim of Rs 13 lacs. Mansi argued that as she has been paying a premium of Rs 50lacs she should be paid the full claim of Rs 43 lacs.

   i) What is the fundamental principle of insurance?

   ii) Identify the value that motivates her to take insurance.

   iii) By quoting lines, identify and explain two principles of insurance involved by the insurance company by accepting the claim amount.   [4]

26. What is known as the Charter of a company? Briefly discuss its various clauses. [4]

27. Compare Profession & Business based on the following:
    (a) Mode of establishment   (b) Capital Investment
    (c) Transfer of interest   (d) Risk   [4]

SECTION – D

28. 'Kodak Pics' is an advertisement agency initiated by Rahul, Sushmita & Prema. They have
    called a meeting to discuss the below-given points
    (i) Increase the profit margin by 20% in July.
    (ii) Aiming bigger share of the market.
    (ii) Making use of better lenses & improved techniques.
    (iv) Making best use of cameramen, finance, etc. employed by the business
    (v) Improve efficiency in the functioning of business.
    (a) Which aspects of business objectives are being referred to here?
    (b) Also develop each point to be discussed in the meeting by classifying the objective.   [6]

29. Indian Railway' is a part of the Railway Ministry. It is organized and controlled by the Railway
    Ministry. The finances are allocated from the government treasury and whatever revenue it
    earns is deposited to the government treasury only. It is treated as a part of government and
    even the appointment, recruitment, and selection of employees is done in the same way as that
    of civil servants.
    (a) Name the type of public sector enterprise railway is considered.
    (b) Briefly explain its two merits and limitations.
    (c) How does it get its finances?
    (d) What does it do with its revenue?   [6]

30. 'Postal services are important for a modern business. In light of this statement explain various
    facilities offered by Indian Postal Department.   [6]

31. Steel Authority of India Limited (SAIL) is one of the largest steel-making companies in India
    and one of the Maharashtra's of the country's Central Public Sector Enterprises. The vision of
    SAIL is to be a respected world-class corporation and the leader in the Indian steel business in
    quality, productivity, profitability, and customer satisfaction. SAIL was incorporated on 24th
    January 1973 with an authorized capital of rs.2,000 crores and was made responsible for
    managing five integrated steel plants at Bhilai, Bokaro, Durgapur, Rourkela, and Burnpur, the
    Alloy Stel Plant and the Salem Stee Plant. As the Government is the majority shareholder (with
    75% stake), it exercises control over the affairs of the company. Identify the type of Enterprise
    and explain three merits and three demerits of this type of Enterprise.   [6]

32. Aditya is promoting a company. Before the company is formed, he enters into a contract with
    DLF for the purchase of land and also agrees to pay Rs.25 crores within 2 months. The
    company was formed within 1 month. Based on the facts, answer the following questions:
    (i) Which type of contract is entered by Aditya?
    (ii) Is the contract legally binding on the company?
    (iii) Can DLF Ltd. holds Aditya liable for payment of money?
    (iv) What can the company do to prevent Aditya from such a situation?   [6]

33. What are the various types of industries? Explain. What is difference between genetic and
    extracting industries   [4+2=6]

DELHI PUBLIC SCHOOL

SAIL TOWNSHIP, RANCHI

HALF YEARLY EXAMINATION   (2024-25)

Class - XI	**Subject – Chemistry**
Time –3 Hours	**Maximum Marks- 70**

General Instructions:

(i)   This Question Paper contains 33 questions. All questions are compulsory.

(ii)   Question paper is divided into FIVE sections – Section A, B, C, D and E.

(iii)   Section A – question number 01 to 16, are multiple choice type questions. Each question carries 01 mark.

(iv)   Section B – question number 17 to 21, is very short answer type questions. Each question carries 02 marks.

(v)   Section C – question number 22 to 28, is short answer type questions. Each question carries 03 marks.

(vi)   Section D – question number 29 and 30, are case-based questions. Each question carries 04 marks.

(vii)   Section E – question number 31 to 33, is long answer type questions. Each question carries 05 marks.

(viii)   There is no overall choice given in the question paper. However, an internal choice has been provided in few questions in all the sections except Section – A.

(ix)   Use of calculator is NOT allowed.

1. The law of multiple proportions is illustrated by which pair of compounds?
   (a) Sodium chloride and sodium bromide
   (b) Water and heavy water
   (c) Sulphur dioxide and sulphur trioxide
   (d) Magnesium hydroxide and magnesium oxide.   [1]

2. Which of the following contains the largest mass of hydrogen atoms?
   (a) 5.0 moles $C_2H_2O_4$
   (b) 1.1 moles $C_3H_8O_3$
   (c) 1.5 moles $C_6H_8O_6$
   (d) 4.0 moles $C_2H_4O_2$ [1]

3. The value of 1 amu is equal to:
   (a) 1.66×10^{24} g
   (b) 12.00 g
   (c) 1.9924×10^{-24} g
   (d) 1.0 g   [1]

4. The empirical formula of compound is CH_2. One mole of this compound has a mass of 42 g. Its molecular formula is
   (a) C_3H_6
   (b) C_3H_8
   (c) CH_2
   (d) C_2H_2 [1]

5. The elements of which block are called representative elements?
   (a) s-and p-block
   (b) s- block
   (c) d- and f- block
   (d) f-block   [1]

6. The outermost configuration of most electronegative element is:
   (a) ns^2np^5
   (b) ns^2np^6
   (c) ns^2np^4
   (d) ns^2np^3 [1]

7. Out of F_2, Cl_2, Br_2 and I_2 strongest oxidising agent is
   (a) F_2
   (b) Cl_2
   (c) Br_2
   (d) I_2 [1]

8. The relative extent to which the various orbitals penetrate the electron clouds of other orbitals is
   (a) s>p>d>f
   (b) s<p<d<f
   (c) s<d<p<f
   (d) d<s<p<f   [1]

9. Which of the following has the smallest atomic radius?
   (a) F
   (b) Cl
   (c) Cs
   (d) Mg   [1]

10. Which has a maximum repulsive interaction?
    (a) bp-bp
    (b) lp-lp
    (c) lp-bp
    (d) all are equal   [1]

11. C-H bond distance is the longest in
    (a) C_2H_2
    (b) C_2H_4
    (c) C_2H_6
    (d) $C_2H_2Br_2$ [1]

12. Which of the following hybridization possess maximum % s-character?
    (a) sp
    (b) sp^2
    (c) sp^3
    (d) $sp^3 d$ [1]

For questions given below, two statements are given - one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer from the codes (A), (B), (C) and (D) as given below.

A. Both assertion and reason are correct statements, and reason is the correct explanation of the assertion.

B. Both assertion and reason are correct statements, but reason is not the correct explanation of the assertion.

C. Assertion is correct, but reason is wrong statement.

D. Assertion is wrong, but reason is correct statement.

13. **Assertion (A):** Atomicity of oxygen is 2.
    Reason (R): 1 mole of He contains 6.022 x 10^{23} atoms. [1]

14. **Assertion (A).** Threshold frequency is the characteristic for a metal.
    Reason (R): Threshold frequency is the maximum frequency required for the ejection of the electron from the metal surface. [1]

15. **Assertion (A):** Shielding effect increases as we go down the group.
    Reason (R): More is the number of electron in the penultimate shell, more is the shielding effect. [1]

16. **Assertion (A):** Shape of NH_3 molecule is tetrahedral.
    Reason (R): In NH_3, nitrogen is sp^3 hybridized. [1]

SECTION B

17. (a) State the law of definite proportions.
    (b) Write the limitation of the law of definite proportions. [1+1=2]

18. Chlorine has isotopes ^{35}Cl and ^{37}Cl. There are three ^{35}Cl isotopes for every one ^{37}Cl isotopes in a sample of chlorine. Calculate the average atomic mass of chlorine. [2]

19. Define (a) Work function (b) Threshold frequency. [1+1=2]

20. Calculate the wavelength of the spectral line obtained in the spectrum of Li^{2+} ion when the transition takes place between two levels whose sum is 4 and the difference is 2. [2]

OR

A golf ball has a mass of 40 g and a speed of 45 m/s. If the speed can be measured within accuracy of 2%, calculate the uncertainty in the position.

21. (a) Out of σ and π bonds, which one is stronger and why? [1/2+1/2]
    (b) How many σ and π bonds are present in a molecule of $CH_3COC_2H_5$? [1/2+1/2]

SECTION C

22. An organic compound has the following:
    % composition: C=57.82%, H=3.6% and rest is oxygen. Its vapour density is 83. Find its empirical formula and molecular formula. [3]

23. (a) Define limiting reagent.
    (b) In the combustion of methane in air, what is the limiting reactant and why? [1+2=3]

24. (a) Calculate the total number of angular nodes and radial nodes present in 3p orbital.
    (b) Write the significance of ψ and ψ^2. [1+2=3]

3

25. (a) Write the electronic configuration of Co^{3+} and find out the number of unpaired electrons present in it. (Atomic Number of Co=27)
    (b) What is the number of spectral lines emitted when the electron of a hydrogen atom jumps from the n = 4 to the n=1 state?   [2+1=3]

26. (a) What do you understand by the term 'dipole moment'? Give its SI units.
    (b) Inspite of the higher electronegativity of fluorine, NH_3, has higher dipole moment than NF_3. Why?   [1+2=3]

27. (a) Discuss the shape of CIF_3 on the basis of VSEPR theory.
    (b) CO_2 and SO_2 are not isostructural. Explain.   [1+2=3]

28. (a) Give the Lewis dot structureof HNO_3.
    (b) What is zero overlap?
    (c) Explain the formation of the Ethene molecules through orbital overlap.   [1+1+1=3]
                    OR
    (a) What are the types of H-bonding? Give an example of each.
    (b) Although geometries of NH_3 and H_2O molecules are distorted tertrahedral, bond angle in water is less than that in ammonia. Discuss.   [2+1=3]

SECTION:D

29. **Read the following passage given below and answer the following questions:**
    In 1924, Louis de Broglie presented his research thesis, in which he proposed electrons have properties of both waves and particles, like light. Later on the concept was applied to all types of matter. The waves associated with moving particles referred as matter waves or de Broglie waves. The de Broglie wavelength, λ associated with a moving particle is related to its momentum, p by de Broglie equation, which shows that it is not observable in the macroscopic matter.   [1X4=4]

    The following questions are multiple choice questions. Choose the most appropriate answer:

    (i) The de-Broglie wavelength is appreciable for:
       (a) microscopic particles   (b) macroscopic particles
       (c) Both (a) and (b)   (d) none of these.

    (ii) de-Broglie waves are also called:
       (a) electromagnetic waves   (b) mechanical waves
       (c) matter waves   (d) none of these

    (iii) Which constant is involved in the calculation of de-Broglie wavelength of a particle?
       (a) Planck's constant   (b) Rydberg constant
       (c) Bohr radius   (d) no constant is involved.

    (iv) The de-Broglie wavelength of a particle is:
       (a) inversely proportional to mass of particle.
       (b) directly proportional to mass of particle.
       (c) independent of mass.
       (d) inversely proportional to square root of mass.

30. **Read the following passage given below and answer the following question:**

The periodic table has certainly made the study of chemical and physical properties of elements simpler and organized Using the table, scientists find it easy to refer the periodic table and its group designated to a certain element to see how the properties of elements in that group correlate and are able to predict the properties of other elements. Even though so many elements have already been discovered, new element keeps adding into the periodic table. Likewise, scientists can take help from the trends represented by elements in the periodic table and based on these characteristic properties identify new elements that have similar properties to the one that has ordered already been discovered.   [1X4=4]

The following questions are multiple choice questions. Choose the most appropriate answer:

(i) Where are chemically similar elements placed in a periodic table?
  (a) groups
  (b) periods
  (c) anywhere in groups or periods
  (d) none of these

(ii) Periodicity in properties in periodic table is due to:
  (a) repeated similar outer electronic configuration.
  (b) same number of shells.
  (c) little difference in size.
  (d) large difference in electronegativity.

(iii) In which group are inert gases placed in periodic table?
  (a) 13
  (b) 18
  (c) 14
  (d) 12

(iv) The elements of group I are called:
  (a) chalcogens
  (b) halogens
  (c) alkaline earth metals
  (d) alkali metals.

SECTION :E

31. (i) **Define:**   [1+1+1+2=5]
  (a) (n+l) rule .
  (b) Pauli's Exclusion Principle.
  (c) Hund's Rule of Maximum Multiplicity.

(ii) Write the electronic configuration of Fe^{2+} and Cu. (Atomic Number of Fe=26 and Cu=29)
              OR
(i) Why does half-filled and fully fllied subshells possess extra stability?
(ii) Differentiate between emission and absorption spectrum.
(iii) What are degenerate orbitals.   [2+2+1=5]

32. **Answer any five.** [1X5=5]
    (a) Write the general electronic configuration of: 'f' block elements.
    (b) Write the IUPAC name and symbol of element with atomic number 117.
    (c) In the given pairs, indicate which one of the two species is smaller : O^{-2} or S^{-2}.
    (d) Why are electron gain enthalpies of Noble gases positive?
    (e) Why electron gain enthalpy of flourine is less negative than that of chlorine?
    (f) Define electronegativity
    (g) In the second period, why does the first member of each group of the representative elements show anomalous behaviour. Give any two points.

33. (a) What is hybridization? How is the tetravalency of carbon explained?
    (b) Draw the Energy level diagram for molecular orbitals of N_2.
    (c) Why He_2 molecule does not exist. [2+2+1=5]
                    OR
    (a) Differentiate between Valence Bond Theory and Molecular Orbital Theory.
    (b) Draw the Energy level diagram for molecular orbitals of O_2.
    (c) Find bond order of O_2^{2-}.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – Computer Science**
Time – 3 Hours   **Maximum Marks- 70**

General Instructions:
• Please check this question paper contains 17 questions.
• The paper is divided into 4 Sections- A, B, C, D and E.
• Section A, consist of 1 question having sub section (i to xviii). Each question carries 1 Mark.
• Section B, consists of 7 questions (2 to 8). Each question carries 2 Marks.
• Section C, consists of 5 questions (9 to 12). Each question carries 3 Marks.
• Section D, consists of 2 questions (13 to 14). Each question carries 4 Marks.
• Section E, consists of 3 questions (15 to 17). Each question carries 5 Marks.
• All programming questions are to be answered using Python Language only.

SECTION- A

1. **Multiple Choice Questions:**   **[1 x 18 =18]**

   (i) The Software responsible to shift a program from the secondary storage device to the main memory is:
   (a) Compiler   (b) Assembler   (c) Linker   (d) Loader

   (ii) A phase of compiler responsible for generating the intermediate code is called as:
   (a) Lexical analysis   (b) Semantic analysis
   (c) Interpretation phase   (d) Code generation

   (iii) Which memory acts as a buffer between the CPU and the main memory?
   (a) RAM   (b) ROM   (c) Cache   (d) Pen Drive

   (iv) LINUX is a ………………………………..
   (a) Single user operating system   (b) Multi user operating system
   (c) Multi processing operating system   (d) Character user operating system

   (v) To express a hexadecimal number as its binary equivalent, each hexadecimal digit is expressed in:
   (a) 2 bits form   (b) 3 bits form   (c) 4 bits form   (d) None of these

   (vi) The binary equivalent of a hexadecimal digit C is represented by:
   (a) 1010   (b) 1011   (c) 1101   (d) 1100

   (vii) Which of the following GATES will always result in the output high (1) for odd number of high (1) signals in the input bit pattern?
    (a) NOR gate   (b) NAND gate   (c) AND gate   (d) XOR gate

   (viii) Which of the following is the dual relation for A(A+B)=A?
   (a) A+(A+B)=A   (b) A.A'+A.B=A   (c) A.(A.B)=A   (d) A+A.B=A

1

(ix) Which of the following relations is not true?
(a) A+0=0   (b) A.0=0   (c) A+1=1   (d) A+0=A

(x) Who developed the Python programming language?
(a) Charles Babbage   (b) Guido van Rossum
(c) James Gosling   (d) None of these

(xi) The interactive interpreter of Python (IDLE) is the Python Shell. What does the IDLE mean?
(a) Integration Digital learning Environment
(b) Integrated Developing and Learning Environment
(c) Integrated Discrete Language Environment
(d) Integrated Development and Learning Environment

(xii) If a = 5, b = 3.5, then what will be the return data type for (a+b)?
(a) int   (b) float   (c) int or float   (d) None of these

(xiii) If x=5; y=10; z=11 and c=x*y+z/2, then what will be the value stored in c?
(a) 55.0   (b) 55.5   (c) 55   (d) 50

(xiv) Which type of programming does Python support?
(a) Object – oriented programming   (b) Structured programming
(c) functional programming   (d) All of these

(xv) Give the output of math.sqrt(a), when a = 49.
(a) 7   (b) 7.0   (c) 7.00   (d) All of these

(xvi) Which of the following is the valid variable name?
(a) f%2   (b) 20ans   (d) ans   (d) $ans

(xvii) A program snippet using nested loop construct is given below:

```
s = 10

for i in range (1,4):

        for j in range (1,i):

                s + =j

print (s)
```

What will be the final value of 's' when the above program snippet is executed?
(a) 11   (b) 12   (c) 13   (d) 14

(xviii) Which of the following punctuation marks is put at the last of loop statement?
(a) colon   (b) comma   (c) semicolon   (d) None of these

2. **Assertion and Reason based questions:** [2]

   Assertion (A) : An operating system is a system software that manages various resources and the overall operations of a computer system.

   Reason (R) : An operating system coordinates different hardware and software components of a computer system. It also helps in the smooth functioning of various peripherals.

   Based on the above assertion and reasoning, choose an appropriate statement from the options given below:

   (a) Both A and R are true and R is the correct explanation of A.

   (b) Both A and R are true and R is not the correct explanation of A.

   (c) A is true but R is false.

   (d) A is false but R is true.

   (e) Both A and R are false.

3. Verify De Morgan's first and second theorem using truth table. [2]

4. What do you mean by an interpreter? Explain [2]

5. What are the final values stored in the variable x and y below? [2]

   a = 20

   x = (a/2)

   y = (a//2)

6. Predict the output: [2]

   m,n,p = 3, 5, 4

   if(m==n and n!=p):

       print (m*n)

       print(n%p)

   if(m!=n and n==p):

       print(m+n)

       print(m-n)

7. Rewrite the folowing code snippet by using the while loop and give the output. [2]

   p=100

   for i in range(1,5):

       p=p-1

       print(p, end=' ')

8. Predict the output of the given code: [2]

```
for i in range(4):
    for j in range(3):
        print("*", end=' ')
    print ()
```

9. What is an Operating System? How does an operating system manage memory when a number of processes are ready to get executed? [3]

10. (i) Draw a logic diagram by using only NOR gates for the boolean expression given below:
   $(A + B' + C) . (A' + B')$ [2]

   (ii) Verify using truth table: [1]
   $(A+B) . (A.B)' = A.B' + B.A'$

11. Distinguish between: [3]
   (a) Syntax error and Logical error
   (b) Bug and Debug
   (c) for and while loop

12. Write a code in Python to display the following pattern: [2 x 3 = 6]

(a)	(b)

*
 	
   * * *
 	
  * * * * *
 	
 * * * * * * *
 	
 * * * * * * * * *
	5 5 5 5 5
	
	   4 4 4 4
	
	  3 3 3
	
	 2 2
	
	 1

SECTION- D

13. (i) Write a python code to input two numbers. Display the numbers after swapping them without using built-in functions or a third number. [2 X2 = 4]
   Sample Input: a=95 and b=46
   Sample Output: a =46 and b =95

   (ii) A certain amount of money is invested for 3 years at the rate of 6% (r1) , 8% (r2) and 10% (r3) per annum compounded annually. Write a program to calculate:
   (a) The amount after 3 years.
   (b) The compound interest after 3 years
   Accept principal as an input
   [Hint: A = P * (1+ r1/100) * (1+r2/100) * (1+r3/100) and CI = A – P]

14. (i) WAP to enter a number and check whether it is a prime number or not.

(ii) WAP to generate sum of the following series:

s = 1/2 + 1/4 + 1/8 + 1/16 + ………… up to n terms   [2 X2 = 4]

SECTION- E

15. Convert the following: [1 x 5 = 5]

(a) $(ABC9)_{16}$ = (………..)$_8$

(b) $(7156.6)_8$ = (………..)$_2$

(c) $(101110101.111)_2$ = (……….)$_{16}$

(d) $(456.12)_{10}$ = (………)$_2$

(e) $(3761)_8$ = (………..)$_{16}$

16. (i) Write a Python code to find the volume of a cylinder, a sphere and a cone, as per the user's choice. For an incorrect choice, an appropriate error message should be displayed.

[Hint: Volume of a cylinder = π*r*r*h

Volume of a sphere = 4/3 * π*r*r*r

Volume of cone = 1/3 * π*r*r*h]

(ii) An electronics shopping store has announced the following seasonal discounts on purchase of certain items.

Purchase Amount	Discount on Laptop	Discount on Desktop PC
Up to Rs 25000	0.0%	5.0%
Rs 25,001 to Rs 50,000	5.0%	7.5%
Rs 50,001 to Rs 1,00,000	7.5%	10.0%
More than Rs 1,00,000	10.0%	15.0%

Write a Python code to input name, amount of purchase and the type (Laptop/ Desktop PC) of purchase by a customer. Compute and print the net amount to be paid by a customer along with his/her name.   [2.5 x 2 = 5]

17. (i) Write a program to enter a number and check whether the number entered is a palindrome number or not.
[Hint: The reverse of the number is the number itself, such numbers are called palindrome numbers. For ex: 1331, 121 etc.]

(ii) Write a program to find and display the sum of the factorial of all the natural numbers from 1 to n.
S= 1! + 2! + 3! + 4! + ……………….. + n!   [2.5 x 2 = 5]

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI	**Subject – Odissi Dance**
Time – 2 Hours	**Maximum Marks - 30**

General instructions:

> ➤ Please check that this question paper contains 3 questions.
> ➤ Please write down the serial Number of the question before attempting it.

1. **Complete the following sentences**   **(1X8=8 Marks)**

   a) Dance as an art form involves significant body movement with _____.

   b) Folk dance of India are the _____ styles and performed an expression of joy.

   c) The ladies of the households in _____ were called as Gopika.

   d) Gopikas always wanted some excuse to _____.

   e) _____ was a dwarf who represented ignorance and epilepsy.

   f) Lord Shiva in the form of Natraja takes away the ignorance from _____ through the divine act of dance.

   g) Cheer haran of Draupadi was attempted in the court of _____.

   h) Nritta corresponds to pure dance steps performed _____.

2. **Attempt any five questions: (Answer to be written in 30 words).**   **(2X5=10 Marks)**

   a) Write EkaTali with Ukutas.

   b) Write a short note on Sam.

   c) Describe the story of Natya dharma.

   d) Describe the story of Loka dharma.

   e) Write the definition of Matra and Laya

   f) Define the term Nritta?

   g) Define the word Tandava?

3. **Attempt any two question:**   **(2X6=12 Marks)**

   a) Write a brief history of Indian dance.

   b) Briefly describe about Lasya.

   c) Name the Tandavas and write one story briefly.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI	Subject - Economics
Time - 3 Hours	Maximum Marks- 80

GENERAL INSTRUCTIONS:

i. This Question Paper contains two parts:
- Section A - Statistics(40 marks)
- Section B - Microeconomics(40 marks)

ii. Question No.1 – 10 and 18-27 are very short answer questions carrying 1mark each. They are required to be answered in one word or one sentence each.

iii. Question No.11-12 and 28-29 are short answer questions carrying 3 marks each. Answers tothem should not normally exceed 60 - 80 words each.

iv. Question No.13-15 and 30-32 are short answer questions carrying 4 marks each. Answers tothem should not normally exceed 80 - 100 words each.

v. Question No.16–17 and 33-34 are long answer questions carrying 6 marks each. Answers to them should not normally exceed 100-150 words each.

SECTION A-STATISTICS

1. Which of the following statements is not an example of statistics [1]
(a)Birth rate in India is 18 per thousand, as compared to 8 per thousand in the U.S.
(b)Ramesh has a rupee hundred note in his pocket.
(c) Over the last ten years, India has won 60 test matches in cricket and lost 50.
(d) Average pocket allowance of the student of Class 11 is Rs 500 per month.

OR

Welfare definition of Economics has been given by
(a) Lionel Robbins   (b) Adam Smith   (c) Alfred Marshall   (d) Prof Samuelson

2. The activity which is related to the use of scarce resources is called [1]
(a) Non economic activity   (b) Economic activity
(c) Both (a) and (b)   (d) Neither (a) nor(b).

3. Reliability of sampling data depends on [1]
(a) Size of sample   (b) Method of sampling
(c) Training of enumerators   (d) All of these

4. The quickest method to collect primary data is [1]
(a) Direct personal investigation   (b) Indirect oral investigation
(c) Telephonic interview   (d) Mailed questionnaire method.

5. Read the following statements carefully and choose the correct alternative from the following:

Statement I: Classification of data is required for further statistical analysis. [1]

Statement II: Classification helps in simplifying data and enhances understanding.

Alternatives

(a) Both the statements are true.

(b) Both the statements are false.

(c) Statement I is true & Statement II is false.

(d) Statement II is true & Statement I is false

6. Identify the correct sequence of alternatives given in Column 2 by matching them with respective items in Column 1.

[1]

Column 1	Column 2
A. Table	(i) Given for clarification of the reader.
B. Spatial Classification	(ii) Actual presentation of data in the form of rows and columns.
C. Footnotes	(iii) Shows more than three characteristics of the data
D. Manifold Table	(iv) Location becomes a classifying variable.

Alternatives

(a) A-(iv),B-(iii),C-(i),D-(ii)

(c) A-(ii),B-(iv),C-(i),D-(iii)

(b) A-(iii),B-(iv),C(i),D-(ii)

(d) A-(iv),B-(ii),C-(i),D-(iii)

7. Read the following statements carefully, Assertion (A) and Reason (R) and choose the correct alternative

[1]

Assertion (A): In bar diagrams, data are presented in the form of bars or rectangles.

Reason (R): The width of the bar changes in case of bar diagrams .

Alternatives

(a) 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 true.

8. Value of_____can be determined with the help of an ogive.

(a) Mean   (b)Median   (c) Mode   (d) None of these   [1]

9. If there are two groups containing 30 and 20 observations and having 50 and 60 as arithmetic means, then the combined arithmetic mean is

(a) 51   (b) 54   (c) 53   (d) 52   [1]

10. Simple average is sometimes called

(a) Unweighted average   (b) Weighted average

(c) Relative average   (d) None of these   [1]

11. 'Statistics is full of advantages and does not suffer from a single limitation' Defend or refute .

OR

Differentiate between Primary data and Secondary data .   [3]

12. Following is a mid value series of weekly pocket money (in Rs) of 30 teenagers. [3]

Mid value	70	90	110	130	150	170
Frequency	6	6	7	7	3	1

Convert the series into a simple frequency distribution and answer the following questions :
(a) Find the number of teenagers with weekly pocket money more than Rs140 .
(b) How much percent of teenagers have weekly pocket money between Rs80 to Rs120.

13. The estimated percentage breakup of the cost of construction of a house (excluding cost of land) is as follows:

Labour	Bricks	Cement	Steel &Timber	Marble	Miscellaneous
20%	12%	25%	15%	13%	15%

Construct a Pie Diagram to represent the given data. [4]

14. Construct a Histogram from the following data: [4]

Marks	0-10	10-20	20-40	40-70	70-80
No of students	6	8	32	36	4

OR

The table given below shows the amount of sales of 100 companies .

Sales(in crores)	20-30	30-40	40-50	50-60	60-70	70-80
No of companies	7	12	15	30	22	14

With the help of the information prepare a more than ogive.

15. The mean salary paid to 1000 employees of a factory was found to be Rs 180.4. Later on, it was discovered that the wages of two employees were wrongly taken as to 297 and 165 instead of 197 and 185. Find the correct mean salary. [4]

16. Out of total number of 1,650 persons interviewed for appointment in a factory,450 were from textile areas and the rest were from the non textile areas. Among the married men who belonged to textile areas,210 were experienced and 65 inexperienced, while for non textile areas, the corresponding figures are 46 and 505 respectively. The total number of inexperienced persons was 900 of whom 91 resided in textile areas. Present the given data in a suitable table. given data in a suitable table. [6]

17. (a) Explain two merits of Arithmetic mean. [2]
(b) The following table gives the distribution of daily income of 60 families. Calculate the average daily income using step deviation method. [4]

Daily income	Below 75	75-150	150-225	225-300	300-375	375-450	450and above
No of families	6	17	20	6	5	4	2

OR

(c) If each observation of a series is increased or decreased by a constant ,then the Arithmetic Mean of the new series also get increased or decreased by that constant .'Prove this statement with the help of an example. [2]

(d) Find the missing frequency from the following data, if average marks are 17 . [4]

Class interval	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Frequency	10	12	16	?	14	10	8

SECTION-B MICROECONOMICS

18. The opportunity cost of 100kg of rice produced on a land which can also produce 80 tonnes of wheat is :
   (a)100 kg of wheat
   (b) 80 tonnes of wheat
   (c) 8,000 tonnes of wheat
   (d) none of these [1]

19. Concavity of PPF implies:
   (a) increasing slope
   (b) decreasing slope
   (c) constant slope
   (d) none of these [1]

20. Read the following statements carefully and choose the correct alternative from the following:
   Statement I: When consumption is increased beyond the point of satiety, total utility starts rising...
   Statement II: MU is maximum at the point of satiety. [1]
   Alternatives
   (a) Both the statements are true.
   (b) Both the statements are false.
   (c) Statement I is true & Statement II is false
   (d) Statement II is true & Statement I is false.

21. From the set of statements given in Column I and Column II, choose the correct pair of statements: [1]

Column I	Column II
A.IC analysis of consumer's equilibrium	(i)Based on the concept of cardinal measurement of utility.
B. Monotonic preference for a good	(ii)More of a good always gives less satisfaction to the consumers.
C. Equilibrium condition	(iii)$MRS_{XY} = P_X/P_Y$
D. Budget set equation	(iv)$P_1X_1 + P_2X_2 = Y$

Alternatives:
   (a) A-(i)
   (b) B-(ii)
   (c) C-(iii)
   (d) D-(iv)

22. Read the following statements carefully, Assertion (A) and Reason (R) and choose the correct alternative: [1]
   Assertion (A): Slope of budget line is represented by price ratio.
   Reason (R) : Budget line slopes downwards as more of one good can be bought by decreasing some units of the other good.

Alternatives

(a) 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 true.

23. MUx of X is 40 and MUy of Y is 30. If the price of Y is ₹ 9 then price of X at equilibrium will be:

    (a) ₹9   (b) ₹30   (c)₹15   (d)₹12   [1]

24. Two commodities A and B can be inferred as close substitutes of each other if: [1]

    (a) Rise in price of one leads to an increase in demand of the other and vice versa.

    (b) Rise in price of one leads to a decrease in demand of other and vice versa.

    (c) Fall in price of one lead to fall in demand of other one, but not the other way around.

    (d) Rise in price of one lead to rise in demand of the other one, but not the other way round.

                                        OR

    In case of Giffen's Paradox, the slope of demand curve is:
    (a) Negative   (b) Positive
    (c) Parallel to X-axis   (d) Parallel to Y-axis

25. Which of the following is a reason for change in demand: [1]
    (i) Change in income   (ii) Change in price of related goods
    (iii) Population increase   (iv) Price of the good.

    Alternatives: (choose the correct alternative)

    (a) (i), (ii), (iii)   (b) (ii), (iii), (iv)   (c) (i), (iii), (iv)   (d) (i), (ii), (iv)

26. Price elasticity of demand of a good is (- 3). It shows that: [1]
    (a) When price falls by 1% demand rises by 3%.
    (b) When price rises by 1% demand falls by 3%
    (c) Either (a) or(b)
    (d) Neither (a) nor (b)

27. Which of the following influence the price elasticity of demand?   [1]
    (a) Nature of commodity   (b) Income level
    (c) Availability of substitutes   (d) All of these

28. A new steel plant have come up in Jharkhand. Many people who were previously unemployed in the area are now employed. How will this affect the demand for black and white tv ? Discuss with the help of a graph.   [3]

29. When the price of a commodity is ₹ 20 per unit, its quantity demanded is 800 units. When its price rises by ₹ 5 per unit, its quantity demanded falls by 20 per cent. Calculate its price elasticity of demand. Is the demand elastic? Give reason for your answer.   [3]

                                        OR

Calculate the missing figures.

Units	1	2	3	4	5
TU in units	5	9	--	14	--
MU in units	--	--	3	--	1

30. A consumer has total money income of Rs. 250 to be spent on two goods X and Y with prices of Rs 25 and Rs10 per unit respectively. On the basis of the information given, answer the following questions: [4]
(a) Give the equation of the budget line for the consumer.
(b) What is the value of slope of the budget line ?
(c) How many units can the consumer buy if he is to spend all his money income on good X?
(d) How does the budget line change if there is a fall in price of good Y?

31. (a) A country produces two commodities: Tanks and Butter. Its production possibilities are shown in the following table: [4]

Possibility	A	B	C	D	E	F
Tanks (in units)	20	14	9	5	2	0
Butter (in units)	0	1	2	3	4	5

(i) Calculate marginal rate of transformation(MRT);
(ii) Construct a PPF with the help of the various possibilities.
(iii) Comment on the shape of PPF along with its reason.

OR

(b) State whether the following statements are true or false with reason:

(i) 'For whom to produce' is a problem concerned with choice of technique.
(ii) PPF shifts to the left when new resources are discovered in the economy.

32. ' Flatter the demand curve higher the elasticity.' Do you agree? Explain with a diagram. [4]

33. (a)The marginal utility schedule for goods X and Y are given. Price of both the goods are Re 1 and Rs 2 respectively. Income of the consumer is Rs 11.Determine how many units of both the commodities should be consumed by her to be at equilibrium. [4]

Units	MU of Good X	MU of Good Y
1	26	22
2	21	18
3	17	16
4	13	12
5	8	8
6	3	2

(b) Discuss the changes that takes place in the consumption of Good X and Good Y if $MU_x /P_x < MU_y /P_y$. [2]

OR

(c) State the conditions of consumer's equilibrium under Indifference Curve approach. [2]
(d) Discuss the effects of increase in price of bananas and decrease in price of apples on the budget line. [4]

34 Read the following case study carefully and answer the questions (i) to (vi) on the basis of the same.

Petrol and diesel prices were today cut by ₹2 per litre each as international oil prices slumped to five year low. This is the eighth straight reduction in petrol prices since August ,and fourth in diesel since October. New rates will be effective midnight tonight, Indian Oil Corp, the nation's largest fuel retailer, announced here. In Delhi, petrol will cost ₹61.33 litre, the lowest in 44 months, as compared to current price of ₹ 63.33. The price has been cut by ₹2.09 litre in Mumbai ₹ 68.86. Rates differ from state to state because of varied rates of local sales tax or VAT.

Source. Financial express, New Delhi, December 15 ,2014.

(i) Certain goods, which are demanded only because their prices are very high, are called_____ [1]

(a) Articles of distinction   (b) Giffen goods   (c) Inferior goods   (d) none of these

(ii) If two goods X and Y are complementary in nature, then what will happen to the demand for Good-X if price of Good-Y falls?
(a) Fall in demand for Good X   (b) Increase in demand for Good X   [1]
(c) Demand for Good X remain constant   (d) None of these

[1]

(iii)Which of the following is false with respect to income effect.
(a) It relates with the change in real income of the buyer.
(b) It refers to change in demand due to change in absolute income of the buyer.
(c) The total change in demand is divided into price effect and income effect.
(d) Income effect can be both positive or negative.

[1]

(iv)A change in price of substitute goods will lead to a_in the demand curve.

(a) Rotation   (b) Shift   (c) Movement   (d) None of these

(v)Read the following statements carefully and choose the correct alternative among those given   [1]
below:
Statement 1: Slope of demand curve for normal goods is downward sloping.
Statement 2: Increase in the price of bread will also increase the demand for butter.

Alternatives:
(a)Both the statements are true.
(b)Both the statements are false.
(c)Statement one is true statement two is false.
(d)Statement two is true statement one is false.

(vi) If the price of good X rises and this leads to decrease in demand for good Y, then the two   [1]
goods X and Y are substitute goods, true or false.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – English**
Time – 3 Hours   **Maximum Marks-80**

Section–A (Reading) [26]

1. Read the passage given below and answer the questions that follow.   **(1x10=10)**

(1) We live in an age of wonders and miracles. It has been called the 'Age of Science' and different aspects of our life that changed in the preceding centuries have been attributed to science. This is completely true, but it is only one side of the coin. The flip side is that as we have advanced more in the field of technology, something fundamental to humanity has been left behind. Values such as empathy and concern for our fellow human beings are gradually being eroded due to the onslaught of our ever-evolving lifestyles, aided by the marvels of technological advancements

(2) Take the example of the Internet. On the one hand, access to information and knowledge at the click of a button is a veritable boon to everyone (especially students) and this has made our lives much simpler. On the other hand, it has severely limited actual contact with teachers, friends and elders. Thus, the learning that a person gains is incomplete as he or she cannot easily take the advice that another person can give on the basis of knowledge and practical experience that is at his or her disposal.

(3) Today, a small child can access and navigate the Internet with an ease that still astounds those from the older generation. But what is even more astounding is the neglect of the basic human traits of friendship, relationships and family values. Owing to all the technological advancements and the gadgets available today, children often miss out on the most enriching childhood experiences such as playing outdoor games with friends, which apart from being immensely enjoyable and physically exhilarating, also develop traits such as teamwork and discipline at an early age.

(4) But now when the concept of friends is gradually being limited to virtual friends on social networking sites, one shudders to think of the implications for the personality development of a child because the time spent with computers or mobile phones for entertainment can never really substitute for the holistic benefits of outdoor play. Such examples can be found in plenty.

(5) As for me, I think this age of rapid development has created at least as many problems as it has solved, if not more. The reason is that the basic goal of life, which should be the pursuit of happiness, has now been replaced by the pursuit of money. Money and happiness are considered analogous in our present society, but they actually are not so. In this mindless pursuit of money, nobody has time now to appreciate the beauty of life, which consists not of multi- billion-dollar skyscrapers, but a simple act of kindness to someone in a time of need.

(6) So, there is an urgent need to stop for a moment and think about where we are actually heading, is it development or destruction? Do we have to wait until people have grown so much apart from each other that we cannot see the suffering of our own species due to our mindless greed, or can we still mend our ways?

(7) To answer this question, I will take the help of that most magnificent of human feelings - Hope. I sincerely wish that we, as the most intelligent species on earth, would take our fair share of responsibility and sincerely think about the path we should follow. Though mankind will possibly last for a long time thanks to its determination and sheer ingenuity, we have to make sure we do not lose our humanity somewhere along the way.

1.1 Attempt the questions given below by selecting the most appropriate option.

(i) It is only one side of the coin to say that life has changed owing to science because….
   (a) age of science has brought wonders and miracles.
   (b) different aspects of life have changed due to science.
   (c) advancement in technology has also shaken human values.
   (d) this side of coin is true and sufficient to look at.

(ii) Which of the following is not true about the internet?
   (a) It provides an easy access to information and knowledge.
   (b) It has made our lives simpler.
   (c) It has limited actual contact with teachers and friends.
   (d) It can easily give advice based on personal experience.

(iii) Internet hampers the holistic growth of a child by ……………...
   (a) encouraging human traits of friendship, society and family.
   (b) enriching childhood experiences of outdoor games.
   (c) providing virtual friends and gadgets.
   (d) developing teamwork and discipline.

(iv) According to the passage, true happiness lies in ……….
   (a) simple acts of kindness
   (b) rapid development
   (c) multi-billion-dollar skyscrapers
   (d) pursuit of money

(v) The word 'veritable' in para 2 means:
   (a) Actual
   (b) Real
   (c) Latest
   (d) Perfect

1.2 Answer the following questions as briefly as possible

(vi) Internet has severely limited actual contact with …………….

(vii) What are the traits that children miss out on due to technological advancements?

(viii) We cannot see the suffering of our own species due to our …………….

(ix) Why are values like empathy and concern gradually eroding?

(x) Which word in para 3 means same as 'exciting'?

2. Read the following text.   (1x8=8)

(1) In recent years, there has been a surge in both group and solo travel among young adults in India. A survey conducted among young adults aged 18-25 aimed to explore the reasons behind their travel preferences and recorded the percentage variation for 10 common points that influence travel choices.

(2) Among those who prefer solo travel, the most common reason cited was the desire for independence and freedom (58%), followed closely by the opportunity for introspection and self-discovery (52%). Additionally, solo travellers appreciated the ability to customize their itinerary to their preferences (44%) and the chance to meet new people on their own terms (36%).

(3) On the other hand, those who prefer group travel often cited the desire for socializing and making new friends (61%) as their primary reason. Group travel also provided a sense of security and safety in unfamiliar places (51%) and allowed for shared experiences and memories with others (48%). Additionally, group travellers enjoyed the convenience of having pre-planned itineraries and organized transportation (38%).

(4) Interestingly, both groups had similar levels of interest in exploring new cultures and trying new experiences (40% for solo travellers, 36% for group travellers). Similarly, both groups valued the opportunity to relax and escape from the stresses of everyday life (36% for solo travellers, 32% for group travellers).

(5) However, there were also some notable differences between the two groups. For example, solo travellers placed a higher priority on budget-friendly travel options (38%) compared to group travellers (24%). Conversely, group travellers were more likely to prioritize luxury and comfort during their travels (28%) compared to solo travellers (12%).

(6) Overall, the survey results suggest that both group and solo travel have their own unique advantages and appeal to different individuals, based on their preferences and priorities.

Answer the following questions, based on given passage.

(i) What does the survey explore as mentioned in (Para 1) about peoples travel choices of young adults?

(ii) Which travel choice point of the survey would influence tour operators to incorporate group dinners, social events, and shared accommodations in their itinerary?

    (a)   Freedom to customize itinerary
    (b)   Luxury and comfort
    (c)   Security and safety
    (d)   Desire for making new friends

(iii) Customization of itinerary to their preferences is easy for the group travellers.(State True/False)

(iv) Identify the solo traveller / travellers from the following three travellers:
    1.   Reshma-I don't want to keep hunting for rickshaws or taxis. A pre-booked vehicle is perfect.
    2.   Nawaz-I'm happy sharing a room in a room in a hostel. I don't need hotel accommodation.
    3.   Deepak-I'm not worried my well-being, even while exploring remote areas.

    (a) Only 1   (b) Only 2   (c) 1 and 3   (d) 1 and 2

(v) Which of the following is an example of an opportunity for self- discovery?
    (a)   Trying new cuisine
    (b)   Hiring a tour guide
    (c)   Purchasing local artifacts
    (d)   Advance booking travel tickets

(vi) Which type of traveller is likely to be a spendthrift?

(vii) Complete the sentence with an appropriate phrase.
The similarities in the percentage of both solo and group travellers who are interested in exploring new cultures and trying new experiences may be due to_____.

(viii) State TRUE or FALSE.
The title, "Wanderlust: The Solo Travel Trend Among Young Adults in India", is appropriate for this passage.

3. **Read the following passage carefully:** **(8)**

(1) Good decoration reflects the personality of the people who live in the home. It should, first of all, be distinctive, just as each person is distinctive. A home should have unity not only within each room but also throughout the house. Rooms should, to some degree, harmonise with each other. The colour and styling of each room, particularly, should fit into the colour and styling of the rooms which run out of it.

(2) Attractive home furnishings set the stage for pleasant living. If they are an expression of yourself, you will have a feeling of satisfaction every time you enter your home, and friends will share your enjoyment.

(3) However, furnishings and surroundings expressive of just the right note of restfulness, gay informality, or elegant simplicity are not often assembled by accident. Even enthusiasm alone is not enough. For most home decorators, it takes pouring over plans, trying colour schemes, finding ingenious ways to make the best of what you have, and shopping around to search out just the right purchases at prices you can afford to pay. But there is keen pleasure in striving for the perfect result, and great satisfaction in achieving it.

(4) A successful house and successful rooms will depend upon the proper relationship of each element in it to the others and to the whole. Therefore, in selecting each piece it is well to consider the background, the usage, the draperies, the floor covering, the upholstering materials, the woods, shapes, colour scheme and the "feeling" you prefer for the room.

(5) You will get more pleasure out of a house if you have a hobby connected with it-collecting glass or antiques, gardening or indoor flower growing, ceramics, art, cooking, decorating, flower arrangements, etc. And you will get more satisfaction and a great deal of help from studying household activities.

(6) You can select a pleasing combination of colours from a wallpaper, a fabric, an oriental mug, a flower or scene, or even a picture in a magazine. If you don't already have the furniture or mugs, it is a good idea to make up a colour scheme in this way. Let one colour predominate. Limit a colour scheme to two or three colours, with white or grey tones.

(a) On the basis of your reading of the above passage, make notes on it, using headings and subheadings. Use recognizable abbreviations (minimum four) and give an appropriate title. [5]

(b) Write a summary of the passage in about 50 words based on your notes. [3]

Section-B (Grammar & Creative Writing Skills) [23]

Answer ANY SEVEN out of Eight question from Q. No. (4) & (5). **[1x7=7]**

Grammar

4. **Fill in the blanks with the correct form of the verb given in brackets.**

My younger brother, Tinu, (a)_____(fall) off his bicycle yesterday. He (b) _____(hurt) his right ankle and (c) _____ (be) in bed since then. The doctor (d) _____ (examine) him and advised him complete rest for a week. He hopes that Tinu will recover soon.

5. **Read the words and phrases given below and rearrange to form meaningful sentences. Attempt ANY THREE.**

(a) administration / to / tackle / the / plans / city / air / pollution / October / starting from

(b) as /has been / the/ as / described/ dignified/ the/ forgiving/ as/ King/ as/ the /earth/ mountains / as being/ and

(c) ability / is believed / the / to / to/ from / swan / have/ separate / milk / water / the

(d) position / Mumbai / Delhi / city / has / the / to claim / most / overtaken / polluted / of / the /

4

6. **Attempt ANY ONE from either (A) or (B).**

   A. You are Vihaan/ Vibhuti, an Electronics Engineer. You have recently returned from the US and are looking for a suitable job in the IT industry. Draft an advertisement in about 50 words for the classified column of a national daily. **[3]**

<div align="center">OR</div>

   B. Aham is going abroad on a foreign assignment for 5 years. He wants to sell his refrigerator, TV, double bed and branded almirah. Draft an advertisement in about 50 words to be published in the classified column of a local daily.

7. **Attempt ANY ONE from either (A) or (B).**

   A. Prepare a poster to be put up in the school entrance lobby announcing the Annual Athletic Meet of your school, Pathways Academy, Patna in not more than 50 words. **[3]**

<div align="center">OR</div>

   B. Times Eye Bank wishes to build awareness among youth about blindness and the importance of eye donation. Draft a suitable poster in not more than 50 words.

8. **Attempt ANY ONE from either (A) or (B).**

   A. Happiness and sorrow, up and downs, success and failures are the various phases of human life. While life has never been a smooth sail, people usually give up and succumb to the grey shades of life. It is positivity alone which empowers individuals to move on in life.
   As Indira/ Inder of XI A, write a speech in 120- 150 words on "Power of Positive Thinking" to be delivered in the morning assembly so as to motivate students and value the gift called Life. **[5]**

<div align="center">OR</div>

   B. The Student Council of your school is conducting an assembly on 'Relevance of Etiquette and Cultured Behaviour'. As Piyush/Piyali, Head Boy/ Head Girl of your school, you are to deliver a speech on the same topic. Write your speech in 120-150 words.

9. **Attempt ANY ONE from either (A) or (B).**

   A. 'Are celebs responsible for the products they endorse?' Taking a cue from the headlines given below and using your own ideas, write a debate for or against the topic (in 120 –150 words). You are Shivan / Shivani.

   - Amitabh Bachchan steps back from promoting Pepsi after a school girl questions the health impact of the drink. **[5]**

<div align="center">OR</div>

   B. "Peer Pressure is Harmful for Teenagers". Write a debate for an inter – school competition in 120 –150 words either for or against the motion. You are Ankit / Ankita of Delhi Public School, Faridabad.

Section–C (Literature)[31]

Read the extracts given below and answer ANY ONE out of the TWO questions. [1x3=3]

10. **A.** "All three stood still to smile through their hair
   At the uncle with the camera.
   A sweet face, my mother's,
   That was before I was born.
   And the sea, which appears to have changed less
   Washed their terribly transient feet."

(i) What does the phrase "smiling through their hair" signify?
   (a) The girls who were photographed had their hair decorated
   (b) The photographed girls were wearing a mask
   (c) When the girls were smiling at the camera, their hair was covering their faces.
   (d) The hair of the girls in the picture was smiling as well.

(ii) "A sweet face, my mother's that was before I was born."….. this line indicates
   (a) Change is constant
   (b) Time is all powerful
   (c) Beauty lies in the eyes of the be holder
   (d) Both (a) & (b)

(iii) Complete the following analogy correctly.

   Alliteration: stood still :: Transferred Epithet: ....

OR

B. "Then sleek as a lizard, and alert, and abrupt,
She enters the thickness, and a machine starts up
Of chitterings, and a tremor of wings, and trillings-
The whole tree trembles and trills."

(i) 'She' in the second line is_____. She is compared to a lizard because of her _____.

(ii) The 'machine' referred to in the second line is_____
   (a) The chicks of goldfinch
   (b) A motor
   (c) A gardening machine
   (d) The tree

(iii) The whole tree trembles and trills because of the lizard. (State True / False)

11. Read the extracts given below and answer ANY ONE out of the TWO questions.   **[1x3=3]**

A. "My grandfather's portrait hung above the mantelpiece in the drawing room. He wore a big turban and loose – fitting clothes, his long, white beard covered the best part of his chest and he looked at least a hundred years old. He did not look the sort of person who would have a wife or children. He looked as if he could only have lots and lots of grandchildren. As for my grandmother being young and pretty, the thought was almost revolting."

(i) Which part of the country does the author hail from? Justify your answer.
(ii) Author's opinion of his grandfather is based on the way he appeared in his portrait.
   (State True/False)
(iii) What does the author mean by 'the thought was almost revolting.'?
   (a) Revolutionary thought
   (b) Unacceptable thought
   (c) Impressive thought
   (d) Negative thought

OR

B. "Then with a heavy heart, I went below, climbed on my bunk and amazingly, dozed off. When I woke up it was 6 p.m., and growing dark. I knew we must have missed the island, and with the sail we had left, we couldn't hope to beat back into the westerly winds."

(i) The captain dozed off because he was convinced that they would find the island. (State True/False)
(ii) According to his speculation, which island did the author expect to reach?

6

(iii) Which of the following is not a synonym of 'beat back'?
  (a) Defeat
  (b) Ward Off
  (c) Drive Back
  (d) Tempt

12. Read the extracts given below and answer ANY ONE out of the TWO questions.   [1x4=4]

A. "One morning on the way to Fetvajian's deserted vineyard we ran into the farmer John Byro who was on his way to town.

Let me do the talking, my cousin Mourad said. I have a way with farmers.

Good morning, John Byro, my cousin Mourad said to the farmer.

The farmer studied the horse eagerly."

(i) The expression "we ran into the farmer" means_____.

(ii) "I have a way with farmers": What does this statement refer to?

  (a) I know how to deal with farmers.

  (b) Farmers and I have a special code language

  (c) I know the tactics farmers use.

  (d) I am smarter than farmers.

(iii) The meaning of the word "deserted" is _____

(iv) The farmer studied the horse eagerly because he was fascinated by the looks of the horse.
(State True / False)

OR

B. "In the train back I saw Mrs. Dorling in front of me again as I had the first time, I met her. It was the morning after the day my mother had told me about her. I had got up late and, coming downstairs, I saw my mother about to see someone out. A woman with a broad back.

'There is my daughter', said my mother. She beckoned to me. The woman nodded and picked up the suitcase under the coat – rack. She wore a brown coat and shapeless hat.

'Does she live far away?' I asked, seeing the difficulty she had going out of the house with the heavy case."

(i) The word 'back' in the first line of the extract is indicative of the fact that….
  (a) Mrs. Dorling was standing behind the author.
  (b) The author met Mrs. Dorling in the train.
  (c) The author recollected her first meeting with Mrs. Dorling.
  (d) None of the above.

(ii) Inspite of the author being introduced by her mother, the woman (Mrs. Dorling) simply nodded. Why do you think she did so?
  (a) She was not interested in talking to her.
  (b) She was in a hurry to take away the heavy suitcase.
  (c) She was more interested in 'things' than 'person'
  (d) All of the above.

(iii) The author was inquisitive about Mrs. Dorling. (State True / False)

(iv) The word _____ from the above extract means 'to show somebody with a movement of your hand that you want him/ her to come closer'.

13. **Attempt <u>ANY TWO</u> out of FOUR questions given below in not more than 40-50 words.   [3x2=6]**

   (i) 'Hardships often bring out the best in people.' Justify this statement giving evidences from the story, "We are Not Afraid to Die……. If We Can All Be Together."

   (ii) "I was sure my grandmother would be upset." What was the author sure about? Was he right?

   (iii) Shirley Toulson has brought out her grief beautifully. Explain.

   (iv) 'She stokes it full'. Explain this phrase with reference to the poem 'The Laburnum Top'.

14. **Attempt <u>ANY ONE</u> out of TWO questions given below in not more than 40-50 words.   [3x1=3]**

   (i) 'The distribution of the various kinds of spirit of our tribe had been from the beginning capricious and vagrant.' Why did Aram say so and what did he mean?

   (ii) 'Well, you knew my mother?' Why did Marga Minco have such an assertive approach towards Mrs. Dorling?

15. **Attempt <u>ANY ONE</u> out of TWO questions given below in not more than 120-150 words. [6x1=6]**

   (i) 'Mother's absence, even if momentary, creates a void in one's life'.
   In the light of the given statement express your views with reference to 'A Photograph' and 'The Laburnum Top'.

   (ii) "My grandmother accepted her seclusion with resignation". How far is it justified to isolate the older members of the family? How could the grandmother's presence and experience be handled in a better way by the family members? Discuss in the light of the lesson 'The Portrait of a Lady'.

16. **Attempt <u>ANY ONE</u> out of TWO questions given below in not more than 120-150 words.   [6x1=6]**

   (i) 'Though Mourad stole the horse, he was a good soul – kind and gentle.' Justify and support the statement citing suitable examples from the lesson 'The Summer of the Beautiful White Horse'.

   (ii) People like Mrs Dorling forget the ultimate end of man. For some earthly gain, people discard their values. Elucidate.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)
Class – XI

Subject – Fine Art Painting (049) /Graphics (050) /Commercial Art (052)
Time – 2 Hours   **Maximum Marks - 30**

General Instructions:
▪ Section-A: Attempt all Questions (Each Question will carry 1 Mark)
▪ Section-B: Attempt all Questions (Each Question will carry 2 Marks)
▪ Section-C: Attempt any two Questions (Each Question will carry 6 Marks)

SECTION-A
Select the right answer from the given options: **[1x8=8]**

1. A. The Lost-wax process is an important technique, for which of the following?
   (1) Cave Painting   (2) Terracotta Pottery
   (3) Bronze sculpture   (4) Graphics print

   B. The rock shelters of Bhimbetikawere declared as a World Heritage site in which year?
   (1) 1888   (2) 2003
   (3) 1920   (4) 1957

   C. The first representation of the Buddha in human form is attributed to which of the
      following eras?
   (1) Gupta period   (2) Mauryan dynasty
   (3) Sunga period   (4) Kushan period

   D. Which of the following is not included in the subject matter of Ajanta paintings?
   (1) Trimurti   (2) Natural scenes
   (3) Bodhisatvas   (4) Jataka tales

   E. "SEATED BUDDHA FROM KATRA TILA" is a typical example of the image of Buddha, 27
      inch height, as it was evolved during the Kushana period in the 2nd century A.D. It is an
      example of the Mathura style of Buddha from Katra Tila (Mound) having no foreign
      influence. Now it is a collection of Museum of Archaeology, Mathura.Archaeology is related
      with _____ .
   (1) Anthropology   (2) Proto-History
   (3) Excavation history   (4) Geology

   F. The art of Mathura carried on the early tradition found at Bharhut and Sanchi. The headless
      statue of Kanishka and Katra Bodhisattva are a creditable creation of Mathura school of art.
      Mathura School was indigenous school. What is Indigenous character in art?
   (1) Foreign influence   (2) Modern values
   (3) Religious influence   (4) Regional characteristics

G. **Assertion (A):** The Lion Capital of Sarnath pillar was executed during the reign of Ashoka (Mauryan Period) in the 3rd century BC at Sarnath between 242-232 B.C. It is now in the collection of Sarnath Arachnological Museum, Sarnath. It is the finest specimen of Maurya period found in 1904 at Sarnath and was designed by the Emperor Ashoka himself.

Reason (R): It is highly polished monolithic lion-capital found at Sarnath, carved out of 7 feet high single sandstone

(1) Both A and R are true and R is the correct explanation of A.

(2) Both A and R are true, R is not the correct explanation of A.

(3) A is true, but R is false.

(4) A is false, but R is true.

H. Vihara caves of Ajanta were used for _____ purpose and Medium of the seals are generally_____ in Indus Valley Civilization?

SECTION-B
(Short answer type questions)
The answer to this question is expected around 100 to 150 words.   **[2x5=10]**

2. **(a)** Write a note on any one painting of Bhimbetka.
                    OR
   (b) What are the artistic aspects of the cave painting?

3. **(a)** What is the visual difference between Dancing Girl and Male Torso sculptures?
                    OR
   (b) What is the difference between 'Mother Goddess' and 'Dancing girl' of Indus Valley Civilization?

4. **(a)** Describe in short aboutAjantacaves. Discuss the themes,technique also.
                    OR
   (b) Describe the sculpture Mahavira (Jain Tirthankar) of Gupta Period.

5. **(a)** Describe the seated Buddha sculpture from your course of study that epitomizes the expertise of Gupta sculptors.
                    OR
   (b) Write an appreciative note on the artistic achievements of Mathura Buddha.

6. **(a)** Describe the characteristic features of the 'Chauri bearer' a famous sculpture of Maurya dynasty.
                    OR
   (b) What is Stupa in Buddhism? What is significant Difference among the architectures Chaitya and Vihara?

SECTION-C
Attempt any two questions from the given options (Long answer type questions)
An answer for this question is expected in around 250 to 300words   **[6x2=12]**

7. **(a)** Why Bhimbetika is important discovery. Write about its name, location, discovery, different subjects & expressions. medium & features.
   (b) Purpose of Prehistoric Cave Paintings and write about different period cave art.

8. How can you say that the Art of Indus Valley Civilization was highly developed? Write about the method, material and subjects of sculptures found at Indus Valley.

9. Write about Mauryan style of Art. Write about the details of 'Lion Capital'. What is the symbolic representation of 'Lion Capital'?

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – Geography**
Time – 3 Hours   **Maximum Marks - 70**

GENERAL INSTRUCTIONS:

1. This question paper contains **32** questions. **All** questions are **compulsory**.
2. This question paper is divided into **five** sections. **Sections - A, B, C, D and E.**
3. *Section A* - Question numbers **1 to 20** are Multiple Choice type questions carrying 1 mark each.
4. *Section B -* Question numbers 2**1 and 22** are Source based questions carrying 3 marks each.
5. *Section C*- Question numbers **23 to 25** are Short Answer type questions carrying 3 marks each.
   Answer to these questions shall be written in 80 to 100 words.
6. *Section D -* Question numbers **26 to 30** are Long Answer type questions carrying 5 marks each.
   Answer to these questions shall be written in 120 to 150 words.
7. *Section E -* Question numbers **31 and 32** are Map based questions.

SECTION - A

(Question numbers 1 to 20 are Multiple Choice type questions.)

1. Match the Column I with Column II and choose the correct option.   [1]

Column I	Column II
I. Meteorology	1. Oceanography
II. Pedology	2. Geomorphology
III. Geology	3. Climatology
IV. Hydrology	4. Soil Geography

   Options:

	I	II	III	IV
(A)	3	4	2	1
(B)	2	3	4	1
(C)	2	4	3	1
(D)	3	1	4	2

2. Consider the following statements and choose the correct answer with the help of the given options.   [1]

   Assertion (A) : Shield volcanoes are not steep.
   Reason (R) : Shield volcanoes are mostly made up of granite, a type of lava that is very fluid when erupted.
   Options:
   (A) (A) is correct, but (R) is false.
   (B) (A) is false, but (R) is correct.
   (C) Both (A) and (R) are correct and (R) is the correct explanation of (A).
   (D) Both (A) and (R) are correct and (R) is not correct explanation of (A).

3. Which one of the following is not related to the formation or modification of the present atmosphere? [1]
   (A) Solar winds
   (B) Differentiation
   (C) Degassing
   (D) Photosynthesis

4. Life on the earth appeared around how many years before the present? [1]
   (A) 13.7 billion
   (B) 4.6 billion
   (C) 3.8 billion
   (D) 3.8 million

5. What is the mean thickness of continental crust? [1]
   (A) Around 5 km
   (B) Around 30 km
   (C) Around 50 km
   (D) Around 70 km

6. The location where sinking of a plate occurs is called a [1]
   (A) Subduction Zone
   (B) Reduction Zone
   (C) Induction Zone
   (D) Deduction Zone

7. Consider the following statements and choose the correct answer with the help of given options. [1]
   I. Tillite is the metamorphic rock formed out of deposits of glaciers.
   II. The glacial tillite provides unambiguous evidence of palaeoclimates and also of drifting of continents.
   Options:
   (A) Only statement I is correct.
   (B) Both the statements are correct
   (C) Only statement II is correct.
   (D) Both the statements are incorrect.

8. The phenomenon of wearing down of relief variations of the surface of the earth through erosion is known as [1]
   (A) Weathering
   (B) Gradation
   (C) Oxidation
   (D) Hydration

9. Which of the following statement is NOT true regarding mass movements? [1]
   (A) These movements transfer the mass of rock debris down the slopes under the direct influence of gravity.
   (B) The movements of mass may range from slow to rapid.
   (C) Weathering is a pre-requisite for mass movement as it aids mass movements.
   (D) Mass movements are very active over weathered slopes rather than over unweathered materials.

10. Which of the following is NOT an erosional landform of karst topography? [1]
    (A) Stalactites
    (B) Pools
    (C) Sinkholes
    (D) Lapies

11. Outwash Plains are formed by [1]
    (A) Rivers
    (B) Groundwater
    (C) Winds
    (D) Glaciers

12. Which one of the following countries shares the longest land frontier with India? [1]
    (A) China
    (B) Pakistan
    (C) Myanmar
    (D) Bangladesh

13. The length of coastline of the Indian mainland is [1]
    (A) 7,517 km
    (B) 6,100 km
    (C) 7,217 km
    (D) 5,100 km

14. Consider the following statements regarding the northern plains of India and choose the correct answer with the help of given options. [1]

    I. The northern plains extend approximately 3,200 km from the east to the west.
    II. The average width of the northern plains varies between 150-300 m.
    Options:
    (A) Only statement I is correct.
    (B) Both the statements are correct.
    (C) Only statement II is correct.
    (D) Both the statements are incorrect.

15. Which of the following is the highest peak of the Western Ghats? [1]
    (A) Dodabeta
    (B) Mahendragiri
    (C) Mukurthi
    (D) Anaimudi

16. What is the approximate length of the Great Himalayan range from east to west? [1]
    (A) 2,000 km
    (B) 3,000 km
    (C) 2,500 km
    (D) 3,700 km

17. Which of the following has been correctly arranged in ascending order according to their length? [1]
    (A) Mahanadi, Kaveri, Tapi, Krishna
    (B) Tapi, Kaveri, Mahanadi, Krishna
    (C) Tapi, Mahanadi, Kaveri, Krishna
    (D) Tapi, Mahanadi, Krishna, Kaveri

    Observe the given map and answer question no 18 to 20

18. Identify the river marked as X on the map   [1]
    (A) The Indus
    (B) The Ganga
    (C) The Brahmaputra
    (D) The Narmada

19. Where is the origin of this river?   [1]
    (A) The Chemayungdung glacier
    (B) The glaciers of Mapchachungo
    (C) The Satopanth glacier
    (D) None of the above

20. Which one of the following rivers is not the right bank tributary of this river?   [1]
    (A) Subansiri
    (B) Dhansari
    (C) Kameng
    (D) Manas

SECTION - B

(Question numbers 21 & 22 are Source based questions.)

21. **Read the given passage carefully and answer the questions that follow:** [3]

The Indus system is one of the largest river basins of the world, covering an area of 11,65,000 sq. km (in India it is 321, 289 sq. km) and a total length of 2,880 km (in India 1,114 km). The Indus also known as the Sindhu, is the westernmost of the Himalayan rivers in India. It originates from a glacier near Bokhar Chu (31°15' N latitude and 81°40' E longitude) in the Tibetan region at an altitude of 4,164 m in the Kailash Mountain range. In Tibet, it is known as 'Singi Khamban; or Lion's mouth. After flowing in the northwest direction between the Ladakh and Zaskar ranges, it passes through Ladakh and Baltistan. It cuts across the Ladakh range, forming a spectacular gorge near Gilgit in Jammu and Kashmir. It enters into Pakistan near Chilas in the Dardistan region. The Indus receives a number of Himalayan tributaries such as the Shyok, the Gilgit, the Zaskar, the Hunza, the Nubra, the Shigar, the Gasting and the Dras. It finally emerges out of the hills near Attock where it receives the Kabul river on its right bank. The other important tributaries joining the right bank of the Indus are the Khurram, the Tochi, the Gomal, the Viboa and the Sangar. They all originate in the Sulaiman ranges. The river flows southward and receives 'Panjnad' a little above Mithankot. The Panjnad is the name given to the five rivers of Punjab, namely the Satluj, the Beas, the Ravi, the Chenab and the Jhelum. It finally discharges into the Arabian Sea, east of Karachi.

(A) Which is the westernmost of the Himalayan rivers in India?

(B) What is Panjnad?

(C) Why is the Cheab river known as Chandrabhaga?

22. **Observe the given figures and answer the following questions:** [3]
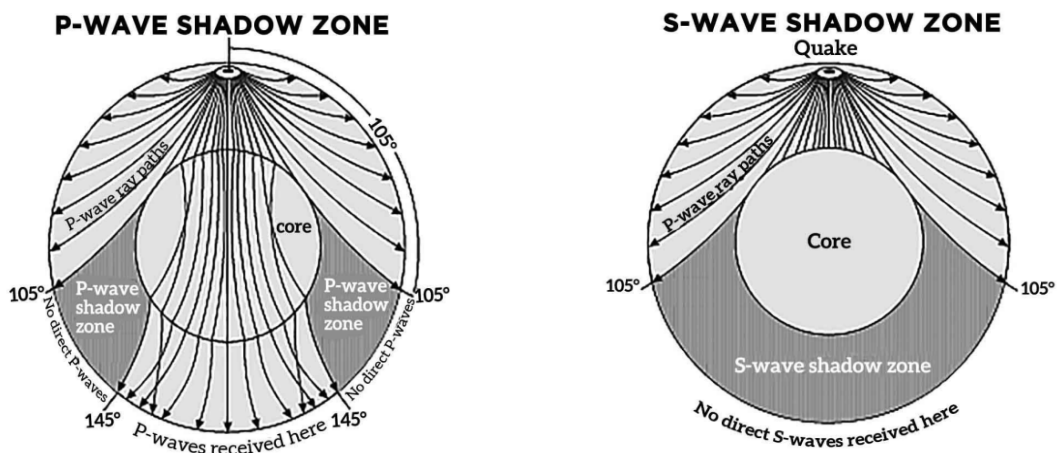
Earthquake Shadow Zones

(A) Where do earthquake waves get recorded?

(B) Which body waves are the first to arrive at the surface?

(C) Why was a zone between 105° and 145° from epicentre identified as the shadow zone for both P and S-waves?

SECTION - C

(Question numbers 23 to 25 are Short Answer type questions.)

23. Explain the different stages involved in the development of planets. [3]

OR

How did the oceans come into being?

5

24. Explain the significance of weathering. [3]

25. Distinguish between the western coastal plains and eastern coastal plains of India. [3]

OR

"The land of India is characterised by great diversity in its physical features". Justify the statement.

SECTION - D

(Question numbers 26 to 30 are Long Answer type questions.)

26. "Geography is a discipline of synthesis". Justify the statement. [5]

OR

Explain the different branches of Human Geography.

27. What facts have been revealed by the study of the mapping of the ocean floor and palaeomagnetic studies of rocks from oceanic regions? [5]

28. "Our earth is a playfield for two opposing groups of geomorphic processes." Discuss. [5]

OR

What is the role of parent material and topography as two important control factors in the formation of soils?

29. Explain the formation of various types of sand dunes. [5]

OR

Explain the erosional landforms made by the rivers.

30. Explain any five features of the Peninsular Plateau of India. [5]

SECTION - E

(Question numbers 31 & 32 are Map Based Questions)

31. Locate and label **any five** of the following geographical features on the Political Outline map of World: [5]
    (A) Southern Ocean
    (B) Pacific Ocean
    (C) African Plate
    (D) Indo-Australian Plate
    (E) Caroline Plate
    (F) Arabian Plate
    (G) Caribbean Plate

32. Locate and label **any five** of the following geographical features on the Political Outline map of India with appropriate symbols: [5]
    (A) The easternmost longitude of India in degree
    (B) Karakoram Range
    (C) Shipki La Pass
    (D) Kanchenjunga Peak
    (E) Tapi River
    (F) Rann of Kachch
    (G) Gulf of Mannar
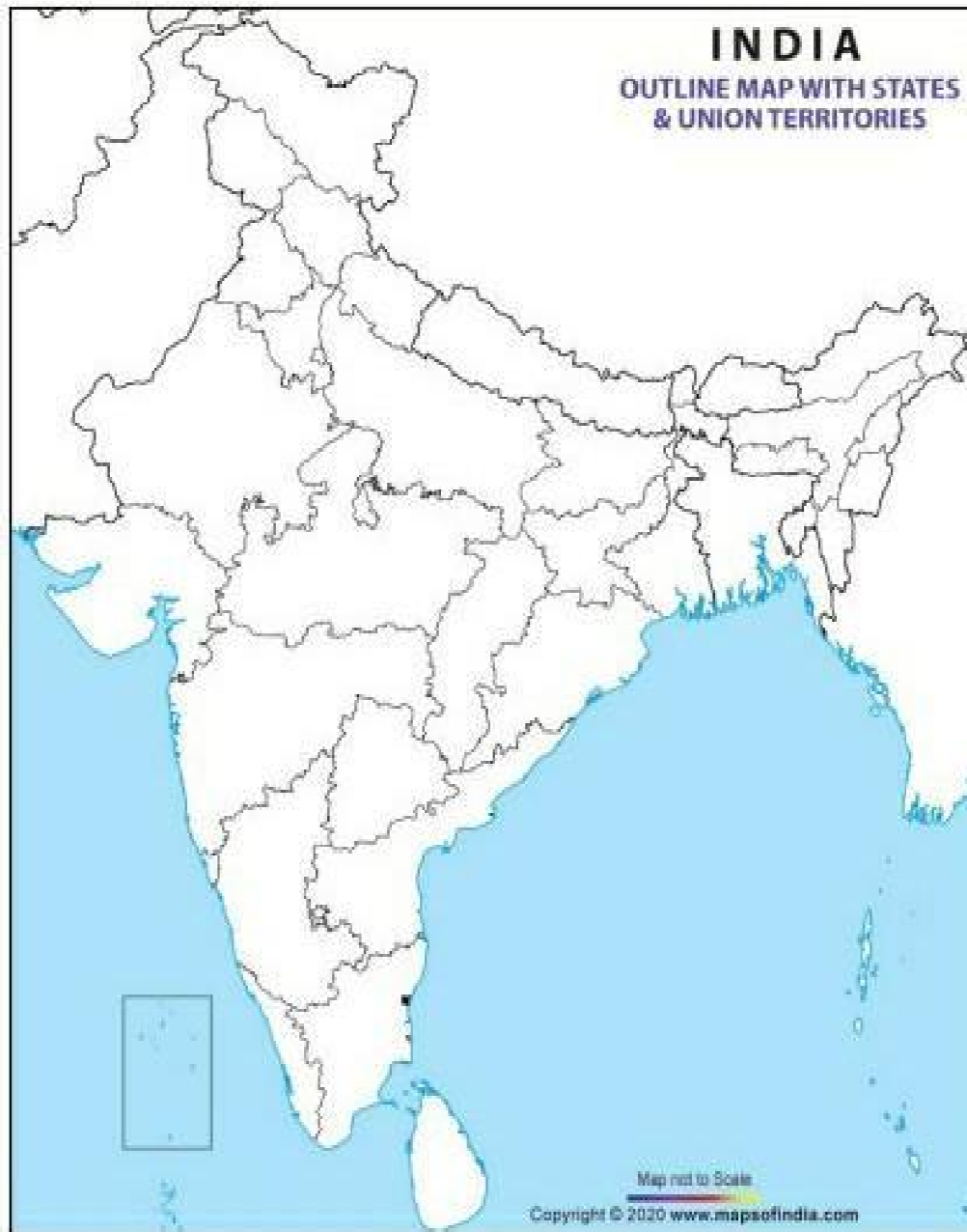
6

Q. 31

Q.32

DELHI PUBLIC SCHOOL

SAIL TOWNSHIP, RANCHI

HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – General Studies**
Time – 1 Hours   **Maximum Marks- 50**

SECTION I: MULTIPLE CHOICE QUESTIONS

Select the best option for each question.   **(1x10=10 Marks)**

1. Which famous artist is known for painting the "Mona Lisa"?
   a) Vincent van Gogh
   b) Leonardo da Vinci
   c) Pablo Picasso
   d) Michelangelo

2. Who is the current Secretary-General of the United Nations?
   a) António Guterres
   b) Ban Ki-moon
   c) Kofi Annan
   d) Boutros Boutros-Ghali

3. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl?
   a) Brother
   b) Nephew
   c) Uncle
   d) Son-in-law

4. Who won the Ballon d'Or award for the best football player in 2023?
   a) Lionel Messi
   b) Cristiano Ronaldo
   c) Robert Lewandowski
   d) Karim Benzema

5. During which Five Year Plan was the Green Revolution initiated in India?
   a) Second
   b) Third
   c) Fourth
   d) Fifth

6. Who invented the World Wide Web?
   a) Tim Berners-Lee
   b) Alan Turing
   c) Bill Gates
   d) Steve Jobs

7. What does the abbreviation "SIM" stand for?
   a) Subscriber's identity Module
   b) Subscriber's identity Machine
   c) Self Identity Machine
   d) Self Identity Module

8. Who was the first Indian woman to win an Olympic medal?
   a) Mary Kom
   b) P.V. Sindhu
   c) Karnam Malleswari
   d) Saina Nehwal

9. What is the primary goal of the Indian government's "Make in India" initiative?
   a) Increase foreign investment
   b) Boost manufacturing sector
   c) Promote tourism
   d) Enhance agricultural productivity

10. What is the full form of "ICU"?
    a) International Components Unicode
    b) Injective Care Unit
    c) Intensive Care Unit
    d) Immediate Care Unit

SECTION II: SHORT ANSWER QUESTIONS

Answer the following questions in 120-150 words each. (Attempt any 4)   **(4x8=32 Marks)**

1. Explain the importance of balancing environment protection with development. Provide examples.
2. Describe the significance and symbolism of the Indian national flag.
3. Analyze the main causes and impacts of the global recession in 2023.
4. Provide an overview of the key events and consequences of the Russia-Ukraine war.
5. Analyze the impact of artificial intelligence on employment in India.

SECTION III: CASE STUDY

Analyze the following case study in 120-150 words.   **(1x8=8 Marks)**

Case Study:

You are a policy advisor to the Indian government. The country is facing a significant decline in agricultural productivity due to climate change, affecting food security. Propose a comprehensive strategy to address this issue, considering sustainable practices, technological advancements, and government policies.

Class – XI	Subject – Hindustani Music Vocal
Time – 2 Hours	Maximum Marks- 30

सामान्य निर्देश :

इस प्रश्न पत्र में तीन खण्ड है **क , ख और ग।**

खण्ड-क 1 अंको का है। सभी प्रश्न अनिवार्य है।

खण्ड-ख 2 अंको का है। सभी प्रश्न अनिवार्य है।

खण्ड-ग 6 अंको का है। सभी प्रश्न अनिवार्य है।

<div align="center">

खण्ड क   [1×8=8]

</div>

1. सा, म ,प की कितनी श्रुतियाँ मानी गई है?

   i) दो-दो

   ii) तीन -तीन

   iii) चार -चार

   iv) पाँच- पाँच

2. पाँच स्वरों वाले राग को कौन सी जाति का राग कहा जाता है?

   i) औडव -औडव

   ii) सम्पूर्ण- सम्पूर्ण

   iii) षाडव - षाडव

   iv) कोई नहीं

3. मंद्र सप्तक के स्वरों पर बिंदी कहा आती है?

   i) निचे

   ii) ऊपर

   iii) दायी ओर

   iv) बाई ओर

4. बाईस श्रुतियों मे से कितनी श्रुतियों को स्वर कहते है?

   i) सात

   ii) आठ

   iii) नौ

   iv) बारह

5. बड़े ख्याल, धुपद , धमार, मसीतखानी गतों मे कौन सी लय का प्रगोय करते है?

    i) विलंबित लय

    ii) मध्य लय

    iii) द्रुत लय

    iv) अति द्रुत लय

6. मिलान कीजिये:

       I   II

    क. अचल स्वर   1. 7

    ख. थाठ   2. प

    ग. तीव्र स्वर   3. 10

    घ. शुद्ध स्वर   4. म

    i) क-4 , ख-1, ग-2, घ-3

    ii) क-4, ख-3, ग-2, घ-1

    iii) क-2, ख-1, ग-4, घ-3

    iv) क-2, ख-3, ग-4, घ-1

7. **कथन- I** तानपुरा का प्राचीन नाम तम्बूरा है।

   कथन -II तानपुरे मे छः खूंटियां लगी होती है।

   इन कथनों के आलोक मे निम्न लिखित विकल्पों मे से सही उत्तर चुने:

   i) कथन (अ) सही है, किन्तु (ब) गलत है।

   ii) कथन (अ) गलत है, किन्तु (ब) सही है।

   iii) कथन (अ) और कथन (ब) दोनो सही है।

   iv) कथन (अ) और कथन (ब) दोनो गलत है ।

8. सही कथन को चुनिए-

   क. राग भैरवी मे रे,ग,ध,नि स्वर कोमल लगते है।

   ख. राग बिहाग , काफी थाठ का राग है।

   ग. तीनताल मे खाली नौ वी मात्रा पर आती है।

   घ. दादरा ताल मे चार विभाग होते है।

   i) क और ख

   ii) ख और ग

   iii) क और ग

   iv) ख और घ

9. नाद किसे कहते है? नाद की विशेषताएं लिखिए।

अथवा

श्रुति किसे कहते है?एक सप्तक मे कितनी श्रुतियाँ मानी गई है।

10. तानपुरे मे कितने तार होते है बताते हुए अंगों का वर्णन कीजिए ।

अथवा

जनक थाठ किसे कहते है,उदाहरण दीजिए ।

11. तीनताल का पूर्ण परिचय ठेका सहित लिखिए।

12. राग भैरवी का परिचय पकड़ सहित लिखिए।

अथवा

राग मे वादी- संवादी स्वर का क्या महत्व है?

13. ध्रुपद गायन शैली के बारे मे संक्षेप मे लिखें ।

अथवा

निम्नलिखित में से किसी **एक** राग का थाठ , वादी- संवादी , जाति तथा पकड़ लिखिए:

i) राग बिहाग

ii) राग भैरवी

खण्ड ग   [6×2=12]

14. अपने पाठयक्रम् के आधार पर किसी **एक** राग मे छोटे ख्याल की स्वरलिपी लिखिए।

अथवा

किसी ऐसे ताल का परिचय और उसका ठेका लिखिए जिसमे 6 मात्राएँ होती हो? उसकी दुगुन और चौगुन भी लिखें।

15. थाठ कितने माने जाते है? प्रत्येक थाठ मे कौन कौन स्वर प्रयोग किए जाते है? लिखिए।

अथवा

वी. एन. भातखंडे जी के जीवन परिचय और संगीत के प्रति किए गए योगदान के बारे मे लिखिए।

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI   **Subject – History**
Time – 3 Hours   **Maximum Marks - 80**

General Instructions:

i.   Question paper comprises five Sections – A, B, C, D and E. There are 34 questions in the question paper. All questions are compulsory.
ii. Section A – Question 1 to 21 are MCQs of 1 mark each.
iii. Section B – Question no. 22 to 27 are Short Answer Type Questions, carrying 3 marks each. Answer to each question should not exceed 60-80 words.
iv. Section C – Question no 28 to 30 are Long Answer Type Questions, carrying 8 marks each. Answer to each question should not exceed 300-350 words.
v.   Section D – Question no.31 to 33 are Source based questions - with three sub questions - and are of 4 marks each.
v.   Section-E – Question no. 34 is Map based, carrying 5 marks that includes the identification and location of significant test items. Attach the map with the answer book.
vi. There is no overall choice in the question paper. However, an internal choice has been provided in few questions. Only one of the choices in such questions have to be attempted.
vii. In addition to this, separate instructions are given with each section and question, wherever necessary.

SECTION A

1. Which one of the following statement is not true.
   a. In Mesopotamian society the joint family is the norm
   b. Married son and family resided with his family
   c. The father was the head of the family
   d. Gifts were exchanged during marriage

2. The major player/s in the Roman Empire are
   a. The emperor and senate
   b. The army and senate
   c. The senate
   d. The emperor, The senate and the army

3. Identify the name of the ruler from the information given.
   i.   He ascended the throne in 1295
   ii. He was the first Khanid ruler tk convert to Islam
   iii. He was a descendant of Tolui
   a. Genghis Khan
   b. Ghazan Khan
   c. Mugloui Khan
   d. Chengitai

4. Arrange in sequence
   I. Tiberius
   II. Augustus
   III. Constantine
   IV. Justinian
   Codes
   a. II, III, I, IV
   b. II, I, III, IV
   c. II, I, III, IV
   d. II, IV, I, III

5. Which ruler of Uruk is associated with connecting trade and writing
   a. Enmerker
   b. Gilgamish
   c. Zilmerim
   d. Achaemenids

6. Consider the following statements and choose the correct option
   I. As early as 9th century BCE, China suffered much from nomad intrusion
   II. The Jurchen of China ruled South China from Peking
   a. Only I is correct
   b. Only II is correct
   c. Both I and II are correct
   d. Both I and II are incorrect

7. There are two statements marked as Assertion(A) and Reason (R). Mark your answer as per the codes provided below.
   Assertion (A): Abu salabikh was excavated through modern methods of excavation and great deal of emphasis was laid on collection of data
   Reason(R): It was the biggest city of Mesopotamian civilisation
   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 correct but R is wrong
   d. A is wrong but R is correct

8. Who was Genghis Khan's mother?
   a. Boardu
   b. Temuijin
   c. Yesugei
   d. Oelun-eke

9. Genghis khan followed which religion
   a. Islam
   b. Buddhist
   c. Christian
   d. Shaman

10. There are two statements marked as Assertion(A) and Reason (R). Mark your answer as per the codes provided below.

 Assertion (A): From Genghis Khan's reign the Mongols had recruited civil servants from the locals

 Reason(R): Chinese secretaries were deployed Iran and Persians in China

 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 correct but R is wrong
 d. A is wrong but R is correct

11. Consider the following statements and choose the correct option
 I. Augustus was the first emperor of Roman Empire
 II. He established the regime called the principalities in 27 CE
 Codes
 a. Only I is correct
 b. Only II is correct
 c. Both I and II are correct
 d. Both I and II are not correct

12. The oven shaped huts of the pastoraland Semi nomadic communities in Numidia in the Roman Empire were called as
 a. Napalia
 b. Lapalia
 c. Sapalia
 d. Mapalia

13. Arrange in sequence.
 I. Sumerian
 II. Armenian
 III. Hebrew
 IV. Akkadian
 Codes
 a. I, II, III, IV
 b. I, III, II, IV
 c. I, IV, II, III
 d. I, IV, III, II

14. Consider the following statements and choose the correct answer
 a. Columella condemned the use of slave gangs
 b. Pliny the elder recommended that landowners should keep a reserve stock of implements and tools
 c. Draco was a Greek law giver
 d. Slavery was an offence in Roman empire

15. Genghis Khan means?
 a. Blessed Ruler
 b. The Successful Ruler
 c. The strong Ruler
 d. The universal Ruler

16. The capital of the Assyrian kings of ancient Mesopotamia was
    a. Babylonia
    b. Nineveh
    c. Ur
    d. Uruk

17. Name a sasanian Ruler of Iran who proved to be an important challenge to the Roman empire in the third century crisis?
    a. Birsha Khan
    b. Genghis Khan
    c. Shapur I
    d. Nishapur

18. Who declared the Great Khan of the Mongols as Genghis Khan?
    a. Kuomintang
    b. Choiskies
    c. Keryits
    d. Quriltai

19. Identify the site of Mesopotamia
    i. Most of the territory was used for pasturing sheep and goats
    ii. Amorites were the major kings of this area
    iii. It is a good example of urban centre prospering in trade
    a. Ur
    b. Uruk
    c. Mari
    d. Babylonia

20. Which two rivers watered different ancient civilisations
    a. Tigris and Euphrates
    b. Niles and Indus
    c. Euphrates and Milan
    d. All of the above

21. Identify the following figure of a statue
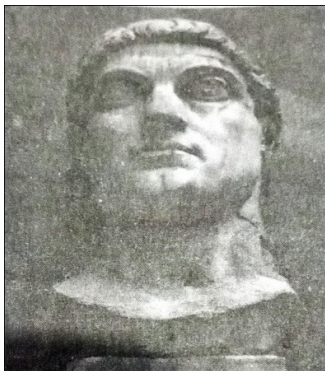
    a. Constantine
    b. Justinian
    c. Augustus
    d. Trojan

SECTION B

22. Discuss the position of women in Roman empire

23. Communication was difficult in the Mongolian steppes. But the system developed by Genghis Khan was successful. Discuss

24. Explain the importance of cities of the Roman empire.

25. The legends of the kings of Uruk tells us about the importance of writing in trade and the importance of cities. Explain.

26. How did Temuijin emerge as a dominant personality in the politics of the steppe lands

27. What do you understand about the religion of Mesopotamians?

SECTION C

28. How far do you know about the society and culture of the Roman empire.

29. 'Mesopotamians have made tremendous progress in writing' Elucidate

30. Compare the perspective of the Mongols and the rest of the world in regard to Genghis Khan . Give Reasons for the difference of these perspectives.

SECTION D

31. Read the source given below and answer the questions that follow.

Ghazan Khan's Speech

Ghazan Khan (1295-1304) was the first Il-Khanid ruler to convert to Islam. He gave the following speech to the Mongol-Turkish Nomad commanders, a speech that was probably drafted by his

Persian wazirRashiduddin and included in the minister's letters:

'I am not on the side of the Persian peasantry. If there is a

Purpose in pillaging them all, there is no one with more power to do this than I. Let us rob them together. But if you wish to be certain of collecting grain and food for your tables in the future,I must be harsh with you. You must be taught reason. If you insult the peasantry, take their oxen and seed and trample their crops into the ground, what will you do in the future? … The obedient peasantry must be distinguished from the peasantry who are rebels…'

i. To whom Ghazan Khan gave the speech to? [1]
ii. Who drafted his speech? [1]
iii. What was Ghazan Khan trying to teach? 2 marks

32. **Read the source given below and answer the questions that follow.**

The Palace at Mari of King Zimrilim (1810-1760 BCE)
The great palace of Mari was the residence of the royal family, the hub of administration, and a place of production, especially of precious metal ornaments. It was so famous in its time that a minor king came from north Syria just to see it, carrying with him a letter of introduction from

a royal friend of the king of Mari, Zimrilim. Daily lists reveal that huge quantities of food were presented each day for the king's table: flour, bread, meat, fish, fruit, beer and wine. He probably ate in the company of many others, in or around courtyard, paved white.

You will notice from the plan that the palace had only one entrance, in the North. The large, open courtyards were beautifully paved. The King would have received foreign dignitaries and his own people in Audience hall, a room with wall paintings that would have awed the visitors. The palace was a sprawling structure, with 260 rooms and covered an area of 2.4 hectares.

(i) What was great palace of Mari used for? How many entrances does the palace has and in which direction?

(ii) What was mainly produced in great palace of Mari?

(iii) What were the varieties of food that king had each day? Whom did king receive in Audience hall?

33. **Read the source given below and answer the questions that follow.**
   On the Treatment of Slaves
   Soon afterwards the City Prefect, Lucius PedaniusSecundus, was murdered by one of his slaves. After the murder, ancient custom required that every slave residing under the same roof must be executed. But a crowd gathered, eager to save so many innocent lives; and rioting began. The senate-house was besieged. Inside, there was feeling against excessive severity, but the majority opposed any change (…) [The senators favouring execution prevailed. However, great crowds ready with stones and torches prevented the order from being carried out. Nero rebuked the population by edict, and lined with troops the whole route along which those condemned were taken for execution.'

   (i) Who was murdered by a slave? What was the ancient custom if a slave committed murder?
   (ii) Why did crowd gather? What did they do?
   (iii) Who was the emperor at this time? What did the emperor do to execute the decision?

SECTION E
34. (I) Locate and label the following locations in the given map
      Capitals of Roman Empire (mark 1 and 2)

34. (II)
   A. Samarqand
   B. Egypt
   C. Arabia

DELHI PUBLIC SCHOOL

SAIL Township, Ranchi

Half Yearly Examination 2024

Class: XI   **Subject: Informatics Practices (065)**

Max Marks: 70   **Time: 3 Hours**

General Instructions:

- *There are 4 sections (I, II, III, IV)*
- *Section-A contains 21 marks, MCQ Type, attempt all 20 questions choosing the best option.*
- *Section-B contains total 15 marks questions of 2 marks each*
- *Section-C contains total 15 marks questions of 3 marks each*
- *Always keep margin at the left side of your answer script & clearly write the Question Numbers*
- *Try to maintain the order of the questions in each group during answering.*
- *Keep spaces and mark 'line-of-separation' in between two answers.*

SECTION-A

Q1. Answer the following questions (Objective type):   **[21X1=21]**

1) **RAM works to:**

   (A) Store Temporary Files   (B) Run Files   (C) Delete File   (D) None of these

2) **Zero Track is used for:**

   (A) Keeping Files Records   (B) File Allocation Table Location

   (C) Both A & B are wrong   (D) Both A & B are correct

3) **CPU is used to:**

   (A) Take Input from user   (B) Send information to Output unit

   (C) Manage CU, ALU, MU   (D) All correct

4) **Difference between 3GL & 4GL is/are:**

   (A) 3GL has Low Programming skill but 4GL has High Programming Skill

   (B) 3GL has High Programming skill but 4GL has High Data Managing Skill

   (C) 3GL has High Data Managing skill but 4GL has Low Programming Skill

   (D) 3GL has High Programming skill but 4GL has Low Data Managing Skill

5) **Difference of Compiler and Interpreter respectively is/are:**

   (A) Faster and Slower   (B) Runs Step-Wise and runs One-Go

   (C) Both are Correct   (D) Both are wrong

6) **When a value is assigned to an identifier, then:**

   (A) Existing value is replaced by the new value   (B) Existing value gets Deleted

   (C) New value gets added to the existing one   (D) None of these

7) Parallelogram is a pictorial representation in a flowchart as:

(A) Decision making   (B) Initialising   (C) Processing   (D) Inputting/Outputting

8) Logical representation of a program can be done by:

(A) Simple English Language as Assembly language (B) Graphical representation as FlowDiagram

(C) Writing a program in a simplified binary form   (D) Non-verbal Facial Expression

9) The: (colon) is put _____

(A) Between *if……else*   (B) After *while*   (C) Before *for*   (D) Between *elif*

10) The _____ operator gives FALSE output when any one of the conditions is wrong.

(A) AND   (B) OR   (C) NOT   (D) NOR

11) The difference between % & // respectively in division are:

(A) Give decimal & integer quotient   (B) Give integer & decimal quotient

(C) Give quotient & decimal reminder   (D) Give reminder & quotient

12) Which of the following is correct in terms of range() function? _____

(A) It begins from 1 (B) 3 arguments are must (C) Runs up to final-value minus 1   (D) All

13) Difference between while () and for () loop is:.

(A) initialization   (B) increment/decrement (C) Both i & ii   (D) None i & ii

14) In a list L=[10,20,30,40,50], print(L[: -2]) gives _____output.

(A) [10,20,30]   (B) [40,50]   (C) [10,20]   (D) [10,20,30,40]

15) A dictionary is:

(A) Mutable   (B) Homogeneous   (C) Has +ve & -ve index   (D) All

16) Output of a Dictionary D after running the following statement is: *for i in D:*

print(i)

(A) Values   (B) Keys   (C) Items   (D) All

17) Break statement terminates the:

(A) Block, made of if…else   (B) Block, made of Loop (C) Both A & B   (D) None A or B

18) The difference between = = & = respectively are:

(A) Equality & Similarity   (B) Assignment & Equality

(C) Equality & Assignment   (D) Similarity & Equality

19) Choose the right statement on String:

(A) +ve index starts from 1 and left side   (B) -ve index begins from -1 and right side

(C) Both are correct   (D) Both are wrong

20) In print() function %d prints:

(A) The numeric value of the variable with %   (B) The character value of the variable with %s

(C) Both of A , B   (D) None of A , B

21) Output of following code is:
y={'Amit' : 489 , 'Debesh' : 488, 'Brajesh' : 477}
y['Rahim']=478
print(y)

(A) {'Rahim': 478, 'Amit': 489, 'Debesh': 488, 'Brajesh': 477}

(B) {'Amit': 489, 'Brajesh': 477, 'Debesh': 488, 'Rahim': 478}

(C) {'Amit': 489, 'Debesh': 488, 'Brajesh': 477, 'Rahim': 478}

(D) Error

SECTION-B

[40 marks]

22) Answer the following questions on a Software-Development-Project based case studies, where you are supposed to write notes of the followings for PPT presentations to train employees:

(i) Write a note on the Difference between the System Software and Application Software. **[2]**

(ii) Write Disk Memory Management System in the disk, explain with diagram. **[2]**

(iii) Explain to your junior:

(a) How does Cache-Memory work with RAM and CPU. (b) Function of ROM **[2]**

(iv) Explain with example the basic purpose of development Customized-Software. **[2]**

(v) Explain with diagram the various types of Programming? **[2]**

23) Write an algorithm to: **[4X1=4]**

(i) Calculate the Total and Average Marks of a class out of 3 subjects (to be entered by the user).

(ii) Input two numbers from the user and Swap those using 3rd variable. Finally print.

(iii) Find the Area of a rectangle.

(iv) Find the greater number of any 2 input numbers

24) Draw a Flowchart to: **[3X2=6]**

(i) Draw a menu driven flowchart to input 2 numbers and a choice (i.e. 1,2,3) to calculate as given:

Choice	Function
a	Addition of those 2 entered nos & print
b	Subtraction of those 2 entered nos & print
c	Termination of the flow of coding

(ii) Draw a flowchart to find the sum of 50 even and odd numbers separately in the same program.

(iii) Draw a flowchart to print the reverse of an entered number.

25) Show the steps to find the final output (True/False) of the following statement, if x=10, y=20 & z=30. **[2]**

! (((x==y) AND (y!=z)) OR (!(z>=x) OR (y>z)))

26) Write a Python program to enter Marks of 5 subjects and print average marks wise Grade as given: **[2]**

Average Marks	Grade
0 - 40	D
41-60	C
61-80	B
80-100	A

27) Re-write the code using while loop, then write the output: **[2]**

```
s=0
for i in range( 5 ):
   s=s+i
print(s)
```

28) Write a command to generate a 2d list named **Lst** of 5X5 elements, initialize by 0. **[2]**

29) Write a command to answer the following questions on the basis of the list given below: **[2]**

L=[101 , 202 , 303 , 404 , 505]

   (i) Print 3rd to last element using -ve index.

   (ii) Print from 1st element, skipped by 1 element.

30) Write a program to create a Dictionary named **class** which has Section wise (F, G, H, I) number of students viz. 30,35,40, 37, where section is Key and no of student is Value. **[2]**

31) Write a program to enter your name as a string, then print each of the letter/character of the name with a gap of one tab (hind: "\t") horizontally. **[2]**

32) Write a Python program to find the following output: **[2]**

```
      *
    * *
  * * *
```

33) Write a Python code to check a triangle is isosceles or not. **[2]**

34) Write a Python program to find s=1+1+2+3+5+8+------------ Nth term. **[2]**

SECTION-C

[9 marks]

35) Write program to input a value and check whether it is present in the following list. If found then print "The Value is Present". The list is: L=[10,20,30,40,50,60,70,80,90,100] **[3]**

36) Write a Python program as asked, assuming a 2-D list is L=[[0,0,0], [0,0,0], [0,0,0], [0,0,0]] **[2X3=6]**

   (i) Replace each 0 of the above said **L** by values entered by the user and print row wise sum.

   (ii) Display the 2-D array in row-column (2-D formatted) form.

###

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION(2024-25)

Class - XI
Time – 3 hours

Subject – Core Mathematics
Maximum Marks- 80

General Instructions:

1. This Question paper contains - **five sections A, B, C, D and E**. Each section is compulsory. However, there are internal choices in some questions.
2. **Section A** has **18 MCQ's** and **02 Assertion-Reason based questions of 1 mark each.**
3. **Section B** has 5 Very Short Answer (VSA)- type questions of 2 marks each.
4. **Section C** has **6 Short Answer (SA)-type questions of 3 marks each.**
5. **Section D** has **4 Long Answer (LA)-type questions of 5 marks each.**
6. **Section E** has 3 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

SECTION - A

1. In set-builder method, the null set is represented by
   (a) { }
   (b) Φ
   (c) $\{x: x = x\}$
   (d) $\{x: x \neq x\}$

2. Two finite sets have m and n elements respectively. The total number of subsets of first set is 56 more than the total number of subsets of the second set. The value of m and n respectively are:
   (a) 7, 6
   (b) 5, 1
   (c) 6, 3
   (d) 8, 7

3. For any two sets A and B, (A-B) ∪ (B-A) =
   (a) (A-B) ∪ A
   (b) (B-A) ∪B
   (c) (A ∪B) – (A∩B)
   (d) (A ∪B) ∩(A∩B)

4. A relation R is defined from {2,3,4,5} to {3,6,7,10} by : $x \, R \, y \leftrightarrow x$ is relatively prime to y, then, domain of R is
   (a) {2,3,5}
   (b) {3,5}
   (c) {2,3,4}
   (d) {2,3,4,5}

5. The range of the function $f(x) = \frac{x+2}{|x+2|}, x \neq -2 \, is$
   (a) {-1,1}
   (b) {-1,0,1}
   (c) {1}
   (d) (-1,1)

6. The value of $\tan x. \tan \left(\frac{\pi}{3} - x\right). \tan \left(\frac{\pi}{3} + x\right)$ is
   (a) $\cot 3x$
   (b) $2 \cot 3x$
   (c) $\tan 3x$
   (d) $3 \tan 3 \, x$

7. If 2B = A+C, then $\frac{\sin A - \sin C}{\cos C - \cos A} =$
   (a) tan B
   (b) cot B
   (c) tan 2 B
   (d) None of these

8. If tan $\theta = \frac{1}{2}$ and tan $\emptyset = \frac{1}{3}$, then the value of $\theta + \emptyset$ is
   (a) $\frac{\pi}{6}$
   (b) π
   (c) 0
   (d) $\frac{\pi}{4}$

9. If tan A + cot A = 4, then $\tan^4 A + \cot^4 A$ is equal to
   (a) 110
   (b) 191
   (c) 80
   (d) 194

10. The value of $(1+i)^4 + (1-i)^4$ is
    (a) 8
    (b) 4
    (c) -8
    (d) -4

11. If $\frac{1-ix}{1+ix} = a + ib$, then $a^2 + b^2 =$

   (a) 1   (b) -1   (c) 0   (d) None of these

12. Given that x, y and b are real numbers and $x < y, b > 0$, then

   (a) $\frac{x}{b} < \frac{y}{b}$ (b) $\frac{x}{b} \leq \frac{y}{b}$ (c) $\frac{x}{b} > \frac{y}{b}$ (d) $\frac{x}{b} \geq \frac{y}{b}$

13. Find all pairs of consecutive even positive integers, both of which are larger than 5, such that their sum is less than 23.

   (a) (6,8), (8,10)   (b) (6,8),(8,10), (10,12)   (c) (8,10), (10,12)   (d) None of these

14. IQ of a person is given by the formula: $IQ = \frac{MA}{CA} \times 100$, where MA is mental age and CA is chronological age. If $80 \leq IQ \leq 140$ for a group of 12 year children, find the range of their mental age.

   (a) $9 \leq MA \leq 17$ (b) $9.6 \leq MA \leq 17$ (c) $9 \leq MA \leq 16.8$ (d) $9.6 \leq MA \leq 16.8$

15. The product of r consecutive positive integers is divisible by

   (a) r!   (b) r! + 1   (c) (r + 1)!   (d) None of these

16. The number of different signals which can be given from 6 flags of different colors taking one or more at a time, is

   (a) 1958   (b) 1956   (c) 16   (d) 64

17. If $^{15}C_{3r} = {}^{15}C_{r+3}$, then r is equal to

   (a) 5   (b) 4   (c) 3   (d) 2

18. Everybody in a room shakes hands with everybody else. The total number of handshakes is 66. The total number of persons in the room is

   (a) 11   (b) 12   (c) 13   (d) 14

ASSERTION-REASON BASED QUESTIONS

In the following questions, a statement of Assertion (A) is followed by a statement of Reason(R). Choose the correct answer out of the following choices.

   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.

19. **Assertion (A):** If R is a relation on a finite set A having n elements, then the number of relations on A is 2^{n^2}.

   Reason (R): A relation on a set A is a subset of set A.

20. **Assertion (A):** For any two complex number z_1, z_2, we have
$$|z_1 + z_2|^2 + |z_1 - z_2|^2 = 2(|z_1|^2 + |z_2|^2)$$
   Reason (R): For any two complex number z_1, z_2, we have

$$|z_1 \pm z_2|^2 = |z_1|^2 + |z_2|^2 \pm 2 \, Re \, (z_1 . \bar{z_2})$$

SECTION - B

21. Let A = {1,2,4,5}, B = {2,3,5,6}, C = {4,5,6,7}. Verify the following identities:
   (a) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
   (b) $A - (B \cap C) = (A - B) \cup (A - C)$

22. Find the domain and range of the function f given by $f(x) = \frac{x-2}{3-x}$

OR

Draw the graph of the reciprocal function $f(x) = \frac{1}{x}$, where x≠0 and write its domain and range.

23. If the arcs of the same length in two circles subtend angles 65° and 110° at the center. Find the ratio of their radii.

24. If $\sin x + \cos x = 0$ and x lies in the fourth quadrant, then find $\sin x$ and $\cos x$.

25. Find the modulus and conjugate of the complex number : $\frac{1+2i}{1-3i}$.

OR

Find the least positive integral value of n for which $\left(\frac{1+i}{1-i}\right)^n$ is real.

SECTION - C

26. Suppose A_1, A_2, ……,A_{30} are thirty sets each with five elements and B_1, B_2,….., B_n are n sets each with three elements. Let $\cup_{i=1}^{30} A_i = \cup_{j=1}^{n} B_j = S$. Assume that each elements of S belongs to exactly ten of the A_i 's and exactly 9 of the B_j 's. Find n.

OR

Show that for any two sets A and B (i) $A = (A \cap B) \cup (A - B)$
$\qquad$ (ii) $A \cup (B - A) = A \cup B$

27. A = {1,2,3,5} and B = {4,6,9}. Define a relation R from A to B by R = {(x,y) : the difference between x and y is odd, $x \in A, y \in B$}.
(a) Write R in Roster form.

(b) Represent R using arrow diagram.

(c) Write the domain and range of R

28. Prove that: $\sin\frac{\pi}{10} = \frac{\sqrt{5}-1}{4}$.

29. If Z_1, Z_2 are complex numbers such that $\frac{2Z_1}{3Z_2}$ is purely imaginary number, then find $\left|\frac{Z_1-Z_2}{Z_1+Z_2}\right|$.

30. Solve the following system of inequations: $\quad \dfrac{5x}{4} + \dfrac{3x}{8} > \dfrac{39}{8}$
$$\text{and}$$
$$\frac{2x-1}{12} - \frac{x-1}{3} < \frac{3x+1}{4}$$

OR

The water acidity in a pool is considered normal when the average pH reading of three daily measurements is between 7.2 and 7.8. If the first two pH reading are 7.48 and 7.85, find the range of pH value for the third reading that will result in the acidity level being normal.

31. (i) Find the number of words formed by permuting all the letters of the word 'CONSTANTINOPLE'
(ii) How many of these words, will start with the letter T
(iii) How many of these words are there, where vowels are all together

SECTION - D

32. If $f(x) = \frac{2^x+2^{-x}}{2}$, then prove that (i) $f(x+y).f(x-y) = \frac{1}{2}\{f(2x) + f(2y)\}$

$\qquad$ (ii) If $f(x) = f(y)$, then $x = \pm y$

33. If $\tan \beta = \dfrac{\tan \alpha + \tan \gamma}{1 + \tan\alpha.\ \tan\gamma}$, prove that $\sin 2\beta = \dfrac{\sin 2\alpha + \sin 2\gamma}{1 + \sin 2\alpha.\sin 2\gamma}$

OR

Show that: $\sqrt{2 + \sqrt{2 + \sqrt{2 + 2\cos 8x}}} = 2\cos x,\ 0 < x < \dfrac{\pi}{8}$

34. What is the number of ways of choosing 4 cards from a pack of 52 playing cards? In how many of these
   (a) four cards are of the same suit? (b) four cards belong to four different suits?
   (c) four cards are face cards? (d) two are red cards and two are black cards ?
   (e) cards are of the same colour?

OR

There are 18 points in a plane,
   (i) If these 18 points are taken on the circle, then find the number of possible chords.
   (ii) If among those 18 points, five points are collinear, then how many (a) straight lines (b) triangles can be formed by joining them?

35. If α and β are different complex numbers with $|\beta| = 1$, find $\left|\dfrac{\beta - \alpha}{1 - \bar{\alpha}\beta}\right|$.

SECTION - E

36. Let n be a positive integers such that $1 \le n \le 100$, Let M_n be the number of integers in the set $X_n = \{\sqrt{n+1}, \sqrt{n+2}, \ ... .\ \sqrt{n+100}\ \}$ let $a = \text{Max } \{M_n : 1 \le n \le 100\}\ \&\ b = \text{Min } \{M_n : 1 \le n \le 100\}$
   (i) Find the number of elements in the set X_{50} [1]

   (ii) Find M_{25} [1]

   (iii) Find $a - b$ [2]

   OR

   (iii) Find $X_1 \cup X_2 \cup X_{3.........} \cup X_{100}$. [2]

37. There are 15 students in a class in which 8 are boys and remaining 7 are girls. They are assembled together for a class photography.

4

(i) In how many ways can they sit together, if there are 15 chairs in a row and there is no restrictions. [1]

(ii) In how many ways can they arrange themselves, if boys are to sit on 8 chairs in a row and girls stand in a row behind them. [1]

(iii) In how many ways can they arrange themselves, if girls sits on even numbered chairs and boys sit on odd numbered chairs and there are 15 chairs in a row. [2]

OR

(iii) In how many ways can 7 girls be arranged in a row, if two particular girls are never together. [2]

38. In drilling world's deepest hole, the Kola Superdeep Borehole , the deepest man made hole on earth and deepest artificial point on earth, as a result of a scientific drilling project, it was found that the temperature T in degree Celsius, x km below the surface of earth, was given by
T = 30 +25(x-3) ; 3 ≤x≤15.
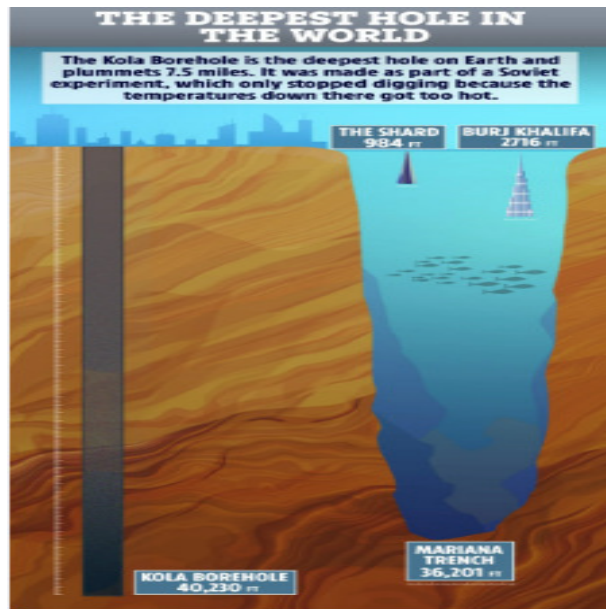
(i) Find the depth, x when the temperature lie between 200^0C and 300^0C [1]

(ii) Find the temperature range in ^{o}C when the depth x lies between 5 km to 12 km. [1]

(iii) Find the temperature range in ^{o}F which lie between 60^0C and 70^0C. Use the conversion formula $C = \frac{5}{9}(F - 32)$, where C and F represents temperatures in degree Celsius and degree Fahrenheit respectively. [2]

OR

(iii) Calculate the absolute difference between the least temperature in ^{o}C and maximum temperature in ^{o}F. [2]

Class - XI
Time – 3 Hours

Subject – Physics
Maximum Marks - 70

General Instructions:

(1) There are 33 questions in all. All questions are compulsory.

(2) This question paper has five sections: Section A, Section B, Section C, Section D and Section E.

(3) All the sections are compulsory.

(4) Section A contains **sixteen questions, twelve** MCQ and **four** Assertion Reason based of **one mark each,** Section B contains **five questions** of **two marks** each, Section C contains **seven questions** of **three marks each**, Section D contains **two case study based** questions of **four marks each and** Section E contains **three long answer questions** of **five marks each.**

(5) There is no overall choice. However, an internal choice has been provided in one question in Section B, one question in Section C, one question in each CBQ in Section D and all three questions in Section E. You have to attempt only one of the choices in such questions.

(6) Use of calculators is not allowed.

SECTION A

1. The angle of projection for which the maximum height and range of the projectile are same is
    (a) $\tan^{-1}(2)$
    (b) $\tan^{-1}(4)$
    (c) $\tan^{-1}(40)$
    (d) $\tan^{-1}(50)$

2. For an object under uniform circular motion, which of the following remains constant?

    (a) Kinetic energy
    (b) Speed
    (c) Magnitude of acceleration
    (d) All of the above

3. The muzzle speed of a certain rifle is 330 ms^{-1}. At the end of one second, a bullet fired straight up into the air will travel a distance of:
    (a) 330 m
    (b) (330 – 4.9) m
    (c) (330 – 9.8) m
    (d) (330 + 4.9) m

4. Three vectors $\vec{P}$, $\vec{Q}$ and $\vec{R}$ satisfy the relation $\vec{P}.\vec{Q}$ = 0 and $\vec{P}.\vec{R}$ = 0. The vector $\vec{P}$ is parallel to
    (a) $\vec{Q}$
    (b) $\vec{R}$
    (c) $\vec{Q} \times \vec{R}$
    (d) $\vec{Q}.\vec{R}$

5. If $x = a + bt + ct^2$, where x is in metre and t in second, then what is the unit of 'c'?
   (a) m/s
   (b) m/s²
   (c) kg m/s
   (d) m²/s

6. The ratio of the average acceleration during the intervals OA and AB in the velocity-time graph as shown below is
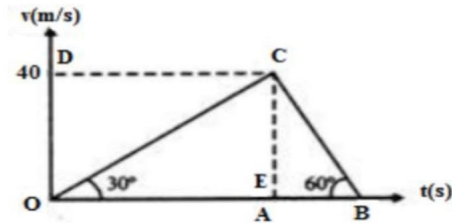
   (a) 1⁄2
   (b) 1⁄3
   (c) 1
   (d) 3

7. When a body is thrown up work done by gravity on the body is
   (a) zero
   (b) positive
   (c) Negative
   (d) Cannot say

8. A ball is projected with kinetic energy E, at an angle of 60° to the horizontal. The kinetic energy of this ball at the highest point of its flight will become :
   (a) Zero
   (b) E/2
   (c) E/4
   (d) E

9. A force F = (2 + x) N acts on a particle in the x-direction. The work done by this force during a displacement from x = 1 m to x = 2 m is-
   (a) 2.1 J
   (b) 2.5 J
   (c) 3.5 J
   (d) 4.5 J

10. The displacement of a body is given to be proportional to the cube of time elapsed. The velocity-time graph of motion of the body is,
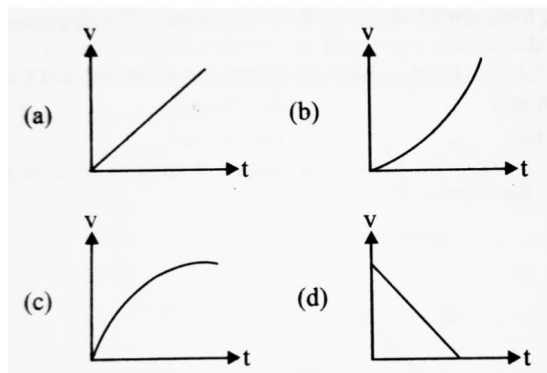
11. A particle has an initial velocity of $3\hat{\imath} + 4\hat{\jmath}$ and an acceleration of $0.4\hat{\imath} + 0.3\hat{\jmath}$. Its speed after 10 sec is
    (a) 10 units
    (b) 7 units
    (c) $7\sqrt{2}$ units
    (d) 8.5 units.

12. A particle of mass 50 gm moves with a linear velocity of 5m/sec on a circular path of radius 50 cm, then the centripetal acceleration will be
    (a) $25m/sec^2$
    (b) $50m/sec^2$
    (c) $2.5m/sec^2$
    (d) $100m/sec^2$

Direction: Question no. 13 to 16 contain two statements- one labelled as Assertion and the other as Reason. Each of these questions also has four alternative choices, only one of which is the correct answer. You have to select one of the codes (a), (b), (c) and (d) given below.
(a) Assertion is correct, reason is correct; reason is a correct explanation for assertion.
(b) Assertion is correct, reason is correct; reason is not a correct explanation for assertion
(c) Assertion is correct, reason is incorrect
(d) Assertion is incorrect, reason is correct.

13. **Assertion (A)**: If power of an engine depends on mass, angular speed, torque and angular momentum then the formula of power is not derived with the help of dimensional method.
    Reason (R): In mechanics, if a particular quantity depends on more than three quantities, then we cannot derive the formula of the quantity by the dimensional method.

14. **Assertion (A)**: Inertia is the property by virtue of which the body is unable to change by itself the state of rest only.
    Reason(R): The bodies do not change their state unless acted upon by an unbalanced external force.

15. **Assertion (A)**: In projectile motion, the angle between the instantaneous velocity and acceleration at the highest point is 180°.
Reason(R): At the highest point, velocity of projectile will be in horizontal direction only.

16. **Assertion (A)**: The position-time graph of a uniform motion in one dimension of a body can have negative slope.
Reason(R): When the speed of body decreases with time, the position-time graph of the moving body has negative slope.

SECTION – B

17. A particle moves so that its position vector as a function of time t in SI units is given by
$\vec{r} = \hat{\imath} + 4\,t^2\hat{\jmath} + t\,\hat{k}$.
Write expressions for (a) its velocity and (b) its acceleration, as function of time.

18. If unit vectors $\hat{A}$ and $\hat{B}$ are inclined at an angle θ then prove that $|\hat{A} - \hat{B}| = 2\sin\theta/2$

19. The number of particles crossing the unit area perpendicular to the x –axis per unit time, is given by $n = -D\dfrac{(n_2 - n_1)}{(x_2 - x_1)}$
Where n_1 and n_2 are the numbers of particles per unit volume for the values of x meant to be x_1 and x_2 respectively. What is the dimensional formula for the diffusion constant D?

20. The expression for force is given in terms of time t and displacement x by the equation
F = A cos B x + C sin D t
What is the dimensional formula of $\dfrac{AD}{B}$.
OR
Mention four advantages of International System of units (SI).

21. If $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$ find the angle between $\vec{A}$ and $\vec{B}$.

SECTION - C

22. (i) If the velocity of light c, the gravitational constant G and Planck constant h are chosen as the fundamental units, find the dimension of time in the new system.
(ii) Mention two limitations of dimensional analysis method.

23. State the principle of homogeneity of dimensions. What is its basis?
Test if the following equation is dimensionally correct.
$h = \dfrac{2\,S\cos\theta}{r\,\rho\,g}$
where h=Height, S=Surface Tension, ρ = Density, r= Radius, g= Acceleration due to gravity

24. The relation between time t and distance x is $t = ax^2 + bx$, where a and b are constants. Express the instantaneous acceleration in terms of instantaneous velocity.

25. A body moving with uniform acceleration covers 12m in 2nd second and 20m in 4th second. How much distance will it cover in 4 seconds after the 5th second ?
OR
A car starts from rest and accelerates uniformly for 10 s to a velocity of 8 ms^{-1}. It then runs at a constant velocity and is finally brought to rest in 64 m with a constant retardation. The total distance covered by the car is 584 m. Find the value of acceleration, retardation and total time taken.

26. Define centripetal acceleration. Derive an expression for the centripetal acceleration of a particle moving with uniform speed 'v' along a circular path of radius 'r'. Give the direction of this acceleration.

27. State law of conservation of linear momentum. A body of mass 1kg initially at rest explodes and breaks into three fragments of masses in the ratio1:1:3. The two pieces of equal masses fly off perpendicular to each other with a speed of 30 m/s each. What is the velocity of heavier fragment?

28. A particle moves from a point having co-ordinates (3, 2,−6) to another point having co – ordinates (14, 13, 9) in meter under the action of a constant force $\vec{F} = \left(4\hat{\imath} + \hat{\jmath} + 3\hat{k}\right)$ N. Write expressions for
(i) initial position vector
(ii) final position vector &
(iii) displacement of the particle.
Calculate the work done by the force.

SECTION - D
CASE STUDY BASED QUESTIONS
Read the following paragraph and Answer the questions that follows:

29. According to Newton's second law of motion, F=ma, where F is force required to produce an acceleration a in a body of mass m. If a =0, then F=0 i.e. no external force is required to move a body uniformly along a straight line. If a force act on a body for t seconds, the effect of force is given by impulse = F x t = change in linear momentum of body.
A cricket ball of mass 150 g is moving with a velocity of 12 m/s and hit by a bat so that the ball is turned back with a velocity of 20 m/s.
With the help of passage given above, choose the appropriate alternative for each of following questions:

(i) If duration of contact between the ball and the bat is 0.01s the impulse of force is
    (a) 7.4 Ns   (b) 4.8 Ns
    (c) 1.2 Ns   d) 4.7 Ns

(ii) Average force exerted by the bat is
    (a) 480 N   (b) 120 N
    (c) 1200 N   (d) 840 N

(iii) The retardation of ball is
    (a) 1600 m/s²   (b) 320 m/s²
    (c) 3200 m/s²   (d) 160 m/s²

(iv) The force acting on the body whose linear momentum changes by 20 kg m/s in 10 s is
    (a) 2 N   (b) 20 N
    (c) 200 N   (d) 0.2 N
                               OR
(iv) An impulsive force of 100 N acts on a body for 1 s. The change in its linear momentum is
    (a) 100 kgm/s   (b) 10 kgm/s
    (c) 1000 kgm/s   (d) 1 kgm/s

30. When Product of vector quantity is taken then we get either a scalar or vector as resultant so Product of vector are of two type:

(A) Scalar Product of Two Vectors: The scalar product (or dot product) of two vectors is defined as the product of the magnitude of two vectors with cosine of angle between them. Thus if there are two vectors A and B having angle θ between them, then their scalar product written as $\vec{A}.\vec{B}$. is defined as $\vec{A}.\vec{B}$ =AB Cosθ.

Properties: It is always a scalar which is positive if angle between the vectors is acute (i.e.,<90°) and negative if angle between them is obtuse (i.e.90°<0<180°).

(B) Vector product of vectors:- The cross product of two vectors is given by Vector $\vec{C} = \vec{A} \times \vec{B}$. The magnitude of the vector defined from cross product of two vectors is equal to product of magnitudes of the vectors and sine of angle between the vectors. Direction of the vectors is given by right hand corkscrew rule and is perpendicular to the plane containing the vectors.

$\therefore \vec{C} = \vec{A} \times \vec{B}$ =A B sin θ $\hat{n}$, Where, $\hat{n}$, is the unit vector perpendicular to the plane containing the vectors A and B. Following are properties of vector product.

For perpendicular vectors, θ = 90°, vector $|A \times B|$ = AB sin 90° $|cap\ n|$ = AB.

$\hat{i} \times \hat{i} = \hat{j} \times \hat{j} = \hat{k} \times \hat{k} = 0$

$\hat{i} \times \hat{j} = \hat{k}; \quad \hat{j} \times \hat{k} = \hat{i}; \quad \hat{k} \times \hat{i} = \hat{j}$

$\hat{j} \times \hat{i} = -(\hat{i} \times \hat{j}) = -\hat{k} \quad ; \hat{k} \times \hat{j} = -(\hat{j} \times \hat{k}) = -\hat{i} \quad ; \hat{i} \times \hat{k} = -(\hat{k} \times \hat{i}) = -\hat{j}$.

(i) Which of the following statements is false?
   (a) Cross product is commutative
   (b) Cross product is distributive over addition
   (c) Dot product of two vectors gives a scalar
   (d) Dot product is commutative

(ii) The resultant vector from the cross product of two vectors is _____
   (a) perpendicular to any one of the two vectors involved in cross product
   (b) perpendicular to the plane containing both vectors
   (c) parallel to to any one of the two vectors involved in cross product
   (d) parallel to the plane containing both vectors

(iii) Find the vector product $(\vec{a} \times \vec{b})$ of the two given vectors: $\vec{a}= 2\hat{i} + 3\hat{j} + 4\hat{k}$, $\vec{b} = 3\hat{i} + 5\hat{j}$. Here, $\hat{i}, \hat{j}$ & $\hat{k}$ are unit vectors along three mutually perpendicular axes.
   (a) $-20\hat{i} + 12\hat{j} + \hat{k}$.
   (b) $10\hat{i} + 6\hat{j} + \frac{1}{2}\hat{k}$
   (c) $20\hat{i} - 12\hat{j} - \hat{k}$.
   (d) $10\hat{i} - 6\hat{j} - \frac{1}{2}\hat{k}$

(iv) Two vectors are perpendicular to each other: $\vec{A}= -2\hat{i} +3\hat{j} +8\hat{k}$ and $\vec{B} = 4\hat{i} +4\hat{j} +a\hat{k}$. The value of a is
   (a) -½.   (b) ½.   (c) 1.   (d) -1

OR

(iv) The angle between
 $\vec{A} = \hat{i} + \hat{j}$ and $\vec{B} = \hat{i} - \hat{j}$ is ,
   (a) 40^0 (b) 90^0 (c) -45^0 (d) 180^0

SECTION - E

31. What is a projectile? A projectile is fired with a velocity u, making an angle θ with the horizontal. Obtain expressions for its
    (a) equation of path
    (b) time of flight
   (c) maximum height &
    (d) horizontal range.

OR

(i) State parallelogram law of addition of vectors. Using it derive an expression for the magnitude and direction of the resultant vector of two vectors acting at angle θ.

(ii) If $\vec{A} = 3\hat{\imath} + 4\hat{\jmath}$ and $\vec{B} = 7\hat{\imath} + 24\hat{\jmath}$, find a vector having the same magnitude as $\vec{B}$ and acting parallel to $\vec{A}$.

32. (i) Define angle of repose. Deduce its relation with coefficient of limiting friction?

(ii) What is the acceleration of the block and trolley system shown in fig. if the coefficient of kinetic friction between the trolley and the surface is 0.04?
What is the tension in the string? (Take g=10ms^{-2}. Neglect the mass of the string.

OR
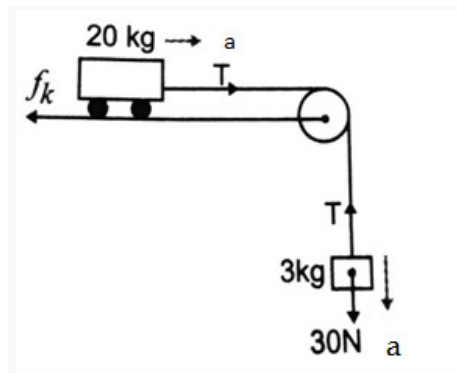
(i) State laws of friction.
(ii) In terms of masses m_1, m_2 and g find the acceleration of both the blocks shown in Fig. Neglect friction and mass of the pulley.
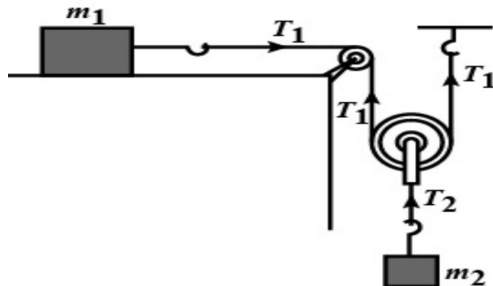
33. (i) Deduce the following equations for uniformly accelerated motion.

(a) v=u+at

(b) s=ut+$\frac{1}{2}$ at²

Where the symbols have their usual meaning.

(ii) Points P,Q and R are in vertical line such that PQ=QR. A ball at P is allowed to fall freely. What is the ratio of the times of descent through PQ and QR ?

OR

(i) A body covers one-third of its journey with speed 'u' , next third with speed 'v' and the last third with speed 'w'. Calculate the average speed of the body during the entire journey.

(ii) The deceleration experienced by a moving motorboat after its engine is cut off is given by $\frac{dv}{dt} = -Kv^3$ where k is constant. If v_0 is the magnitude of the velocity at cut-off, find the magnitude of the velocity at a time t after the cut-off.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI	**Subject – Political Science**
Time – 3 Hours	**Maximum Marks-80**

General Instructions:

All questions are compulsory.
  I. Question numbers 1-12 are multiple choice questions of one mark each.
 II. Question numbers 13-18 are of 2 marks each. Answers to these questions should not exceed 50 words each.
III. Question numbers 19-23 are of 4 marks each. Answers to these questions should not exceed 100 words each.
 IV. Question numbers 24-26 are passage, cartoon and map-based questions. Answer accordingly.
  V. Question numbers 28-30 are of 6 marks each. Answers to these questions should not exceed 180 words.

SECTION A (1 Mark each)

1. Which political theory argues for the abolition of private property and a classless society?
    A. Liberalism
    B. Socialism
    C. Conservatism
    D. Fascism

2. Identify the leader who advocated the cause of the scheduled castes.
    A. Machiavelli
    B. B.R. Ambedkar
    C. Karl Marx
    D. Aristotle

3. Who quoted this –" I disapprove of what you say, but I will defend to death your right to say it"
    A. Rousseau
    B. Hegel
    C. Voltaire
    D. Mill

4. Who gave this statement " Swaraj is my birth right and I shall have it."
    A. BR Ambedkar
    B. Mahatma Gandhi
    C. Bal GangadharTilak
    D. Chandrashekhar Azad

5. Who gave the Harm Principal?
   A. Rousseau
   B. Hegal
   C. Mill
   D. Marx

6. Who was the director to the famous movie "Water" a film made about the plight of widows in India?
   A. Aubrey Menon
   B. Salman Rushdi
   C. MeghnaGulzar
   D. Deepa Mehta

7. The idea of our Preamble is borrowed from the
   A. Canada constitution
   B. U.K constitution
   C. U.S constitution
   D. French constitution

8. Which constitution of the world was called as "Castle of Cards"
   A. Nepal
   B. Iraq
   C. Arab
   D. USA

9. The entire country (India) is divided into how many constituencies?
   A. 555
   B. 543
   C. 549
   D. 565

10. Which year the ammendment was made to change the adult age of Indian citizens?
   A. 1987
   B. 1985
   C. 1989
   D. 1992

11. Who is the current at Auditor and Comptroller general of India ?
   A. DY Chandrachuda
   B. Girish Chandra Murmu
   C. Edmund Drummond
   D. Shashi Kant Sharma

12. How many General Elections have been held so far in India ?
   A. 15
   B. 16
   C. 18
   D. 17

SECTION B (2 Marks)

13. Mention 4 fundamental duties of the citizens of India all (2)

14. "Liberty cannot be divorced from equality. Equality cannot be divorced from liberty. Non can liberty and equality with divorced from fraternity. Without equality, liberty would produce the supremacy of the few over the many." Who said this? (2)

15. Quote the formula for PR election system. (2)

16. Define Politics. Is it correct to say that Politics is only what politicians do? (2)

17. Give two reasons as to why do we study Political theory? (2)

18. Explain the concept of Harm Principal. Who propagated this theory? (2)

SECTION C(4 Marks question)

19. What are electoral reforms? Mention any three reforms for a better system. (4)

20. Why is it necessary for a country to have clear demarcation of powers and responsibilities in the Constitution? What would happen in the absence of such a demarcation? (4)

21. What does Article 324(1) say? How much importance does the body consume mentioned in Article 324(1). Write any two functions of the same. (4)

22. Explain in brief the three dimensions of Equality. (4)

23. What is meant by freedom of expression? What in your view would be reasonable restriction on this freedom? Give example (4)

SECTION D(Source Based 4 Marks)

24. Read the passage and answer the following question.:-

John Stuart Mill, apolitical thinker and an activist from the 19th century Britain, offered a passionate difference of freedom of expression, including freedom of thought and discussion, in his book. He offered 4 reasons why there should be freedom of expression, even for those who espouse ideas that appear false or misleading today. Last reason states that very often ideas that were considered false at one point by the entire society and therefore suppressed turned out to be true later on. A society that completely suppresses all ideas that are not acceptable today runs the danger of losing the benefits of what might turn out to be very valuable knowledge.

i)   What was the name of the book written by J.S Mill? (1)

ii) What were the first two ideas that he mentioned in the book ? (2)

iii) Mention any one book with its author's name which have been banned for some reasons of overlapping ideas in society? (1)

25. The real test of the rights given by any constitution is in their actual implementation. The poor, illiterate and the deprived sections of the society must be able to exercise their rights. Independent organisations have been working as watchdogs against the violations of rights. In this background, the government has established an institution, the National Human Rights Commission. The Commission's functions include inquiry at its own initiative or on a petition presented to it by a victim into complaint of violation of human rights; visit to jails to study the condition of the inmates; undertaking and promoting research in the field of human rights, etc. The Commission receives complaints in thousands every year. These relate to custodial death, custodial rape, disappearances, police excesses, failure in taking action, indignity to women, etc." ON the basis of the paragraph answer the following: (4)

i. Which one of the following is an independent organization of the NHRC?
   A. PURC
   B. PUDR
   C. PUBC
   D. PUCPP

ii. NHRC was established in the year:
   A. 1892
   B. 1993
   C. 1893
   D. 1976

iii. Who among the following is not a member of the NHRC?
   A. CJI of the Supreme Court of India.
   B. Former judges of the SC
   C. Former chief justice of HC
   D. Other members with knowledge in matters of human rights.

iv. The commission has the power to:
   A. Prosecute
   B. Sentence
   C. Recommend to courts
   D. Order the government

26. Study these maps and write down the names of country and the provisions of constitution adopted from these countries. (4)

1

2

3

4

SECTION E(6 marks)

27. Which article of Indian constitution provides for constitutional remedies, describe them all.

28. Explain the main functions of the Constitution.

29. Mention the difference between FPTP and PR system of Election.

30. What is the meaning of the term Socialism? How can we promote equality in society?

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class – XI	**Subject – Psychology**
Time – 3 Hours	**Maximum Marks - 70**

General Instructions:

i.   All questions are compulsory except where internal choice has been given.
ii. QuestionNos.1-15 in Section A carry 1mark each.
iii. Question Nos. 16-20 in Section B are Very Short Answer Type-I questions carrying2 marks each. Answer to each question should not exceed 30 words.
iv. Question Nos.21-25 in Section C are Short Answer Questions Type-II carrying 3marks each. Answer to each question should not exceed 60 words.
v.   Question Nos.26-28 in Section D are Long Answer Type I questions carrying 4 marks each. Answer to each question should not exceed 120 words.
vi. Question No. 29-31 in Section E is a Long Answer Type II question carrying6 marks. Answer to this question should not exceed 200 words.

SECTION - A

1. Dr. Akansha has a Medical degree with years of specialized training in the treatment of psychological disorders .Correctly identify her profession from the options given below .

   a) Clinical Psychologist   b) Psychiatrist
   c) Health Psychologist   d) Counselling Psychologist

2. Anuj has conducted a research for determining the relationship between the amount of screen time exposure and academic achievement of school students. Which research method will be appropriate in this regard?

   a) Correlational   b) Interview   c) Case Study   d) Observation

3. A psychological test developed for urban students may contain items that are familiar withthe stimuli available in urban setting .Such a test is not suitable for being used for children living in rural or tribal areas This example explains which aspect of psychological enquiry?
   a) Psychological measurements are not reliable and valid
   b) Tools of psychological enquiry are relative in nature
   c) Psychological enquiry can only be conducted on individuals residing in urban areas
   d) None of the given options correctly relates to the above example

4. Subh is a highly athletic boy and can play games that involve bodily movements very well. However, he faces so much of difficulty in drawing and writing that he takes a long time even to write one alphabet clearly. This is indicative of his………………
   a) Good fine motor skills
   b) Poor fine motor skills
   c) Poor gross motor skills
   d) Good gross motor skills

5. According to the Life span perspective, when do development changes occur?
    a) During infancy and early childhood
    b) During adolescence and early adulthood
    c) During middle and late adulthood
    d) Throughout the entire life span

6. The areas surrounded by others tend to be perceived as figures, explain:
    a) The principle of surroundness
    b)The principle of symmetry
    c)The principle of smallness
    d)The principle of largeness

7. Erik Erikson was founder of:
    a) Psychosocial development
    b) Sociological development
    c) Psychological development
    d) Both A & B

8. The littlest difference within the value of two stimuli is termed as
    a) Absolute limen
    b) Absolute threshold
    c) Psychophysics
    d) Difference threshold

9. Assertion: People largely differ with respect to psychological characteristics (like intelligence /personality /memory / learning ability) although they share a commonality of belonging to the same species of 'homo sapiens'
    Reason: We all have inherited the human genetic codes from our parents that provides a distinct blueprint and timetable for development. However genes do not exist in isolation and development occurs in the context of individual's environment which makes each of us unique .
    a) Both A and R are true, but R is the correct explanation of A
    b) Both A and R are true, and R is not the correct explanation of A
    c) A is true, R is false
    d) A is false, R is true

10. **Assertion (A)**: Delinquency refers to variety of behaviors, ranging from legal offences, to criminal acts e.g.: truancy, stealing etc.
    Reason (R): Delinquency is not associated with low parental support, inappropriate discipline and family discord
    a) Both A and R are true, but R is the correct explanation of A
    b) Both A and R are true, and R is not the correct explanation of A
    c) A is true, R is false
    d) A is false, R is true

Case study : A young man who suffered a brain injury in an accident, claimed after coming back from that hospital that his parents have been replaced by their 'duplicates'. They were imposters .

11. Select the statement which appropriately explains the above mentioned case.
    a) The person has suffered damage in some part of the brain but his mind has remained intact
    b) Human mind can exist even without a brain
    c) The man acquired some supernatural powers/abilities after the accident so he is behaving in this manner
    d) None of the explanations correctly explains the case study.
        Avneesh has got a research position in the department of Psychology Delhi University?

12. Identify the correct step-wise sequence in for conducting a psychological research ?
    a) Conceptualization of problem /Data Collection/Drawing Conclusions /Revising Conclusions
    b) Revising Conclusion /Drawing Conclusion /Data Collection/ Conceptualization of Problem
    c) Data Collection /Drawing Conclusion / Conceptualization of Problem/ Revising Conclusion
    d) Drawing Conclusion/ Data Collection/ Conceptualization of Problem/ Revising Conclusion

13. **ASSERTION (A):** Ego-centrism means children see the world from other's perspective.
    REASON(R): Children because of ego-centrism engage in animism thinking all things are living

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

Answer the following questions in one word.

14. Adolescents are faced with a conflict as to who they are .The phenomenon refers to _____confusion.

15. Name the Psychologist who has presented the ecological model for understanding development of children in Indian context.

SECTION –B (2 MARKS)

16. Define the terms Reliability and Validity in the context of standardization of psychologicaltest.
17. State the difference between Growth and Development with examples.
    OR,
    Explain the term 'teratogens' with examples.
18. Define the term behaviour including its types along with examples.
19. Define attention and name the properties of attention.
20. Differentiate between bottom up and top down processing.

SECTION – C (3 MARKS)

21. 'Adolescents also develop a special kind of egocentrism'. Define 'egocentrism' and explain the components of egocentrism observed during adolescence.
    OR
    Name and explain the elements that child development in Indian context.

22. Discuss the three limitations of psychological enquiry.

23. Krishna is going to study relationship between poverty and unemployment in her locality in her locality after the pendamic. She decided to use experimental method for it. Define experimental method abd explain different type of variable.

24. Discuss the steps in conducting scientific enquiry.

25. Explain the assumptions (any three) according to lifespan perspective of Development.

26. **Read the case and answer the questions that follow.**

Hanna is one of your classmates. You have often noticed that in majority of class she plays Sudoku or doodles instead. However, her performance is beyond par level. She tops the class. When asked about this, she answered that it helps her to focus. Although it seems paradoxical, she tells that doing puzzle or doodle helps her to distract from unnecessary things and focus on class work.

(i) Identify the attentional process that Hanna is exhibiting? Discuss the process.   (2)

(ii) What are the characteristics of automatic processing?   (2)

OR

What do you understand by binocular disparity?   (4)

27. **Read the case and answer the questions that follow.**

Parker is a Child psychologist who works on the theory of Jean Piaget. When he observes children of infancy stage he founds different activities done by these infants. During his research work he observed that the child during infancy experiences the world through senses and interactions with objects i.e. through looking, hearing, touching, mouthing and grasping. 'The newborn lives in the present. If something is out of sight, it is out of mind of children at this stage. For example, once Parker hid a toy in front of a child with which the child was playing. The young infant did react as if nothing has happened, i.e. she did not search for the toy. The child assumed the toy did not exist. Parker recalls the theory of Jean Piaget that children at this stage have lack object permanence i.e. the awareness that the objects continue to exist when not perceived. Gradually by 8 months of age, the child starts pursuing the object partially covered in her/his presence. As per this theory Vocalisation begins with the infant's babbling, sometime between 3 to 6 months of age. Jean Piaget stressed that children actively construct their understanding of the world. Information does not simply enter their minds from the environment. As children grow, additional information is acquired and they adapt their thinking to include new ideas, as this improves their understanding of the world.

(i) Parker works on which theory of which theory of child psychology?

    a) Social Construct theory

    b) Behavioural theory of B.F Skinner

    c) Cognitive theory of Jean Piaget

    d) Humanist theory of Carl Rogers

(ii) In the theory of Jean Piaget, Parker observed which phenomenon during infancy stage?

    a) Word Formation

    b) Usage of Correct Grammar

    c) Lack of Object Permanence

    d) All of the above

(iii) As per the theory of Jean Piaget, vocalisation begins with the infant's babbling, sometime between the age of:

    a) 0 to 3 months

    b) 3 to 6 months

    c) 6 to 7 months

    d) 9 to 11 months

(iv) What is object permanency?
   a) The ability to reach out and grab an object
   b) The ability to name an object
   c) The ability to know that not seeing an object does not mean it does not exist
   d) The ability to know that the object has a specific function in the environment

28. Define the term data. Explain the different types of data collected in psychological research with examples

SECTION – E (6 MARKS)

29. What is selective attention? Explain different theories proposed for selective attention.

30. Sheela and her colleagues are studying the moral behaviour of UG College students. Explainin detail the ethical guidelines that the psychologists needs to follow while conducting any Psychological enquiry.

31. 'Any discipline which deals with people would definitely recognize the knowledge of psychology'. Discuss in detail how the knowledge of psychology can be applied to other disciplines.

OR

'Development is always embedded in a particular socio-cultural context'. Discuss in detail the contextual view of development as explained by Urie Bronfenbrenner.

DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2024-25)

Class - XI	**Subject – Sociology**
Time – 3 Hours	**Maximum Marks-80**

General Instructions

1. The question paper is divided into four sections.

2. There are 35 questions in all. All questions are compulsory.

3. Section A includes question No. 1-16. These are objective type questions.

4. Section B includes question No. 17-25. These are very short answer type questions carrying 2 marks each. Answer to each question should not exceed 30 words.

5. Section C includes question No. 26-32. These are short answer type questions carrying 4 marks each. Answer to each question should not exceed 80 words. Question no. 26 and 27 are case based questions with 4 parts each carrying 1 mark, making the questions of 4 marks each.

6. Section D includes question No. 33-35. They are long answer type questions carrying 6 marks each. Answer to each question should not exceed 200 words each. Question no 35 is to be answered with the help of the passage given.

SECTION - A

1. A term referring to the fact that the groups and societies of which we are part "exert a conditioning influence on our behaviour ", called as----------------------.
   A. Obligations
   B. Social constraints
   C. Stereotyping
   D. Prohibition

2. -------------, the French scholar, considered to be the founder of sociology.
   A. C. Wright Mills
   B. Auguste Comte
   C. Peter Berger
   D. Herbert Spencer

3. The Psychology is associated with the sociology in terms of--------
    i) Science of behaviour
   ii) Contemporary or recent Past.
   iii)   Production and distribution of goods and services.
   iv) Intelligence, learning, motivation, and memory.
   A. i, ii and iii.
   B.   ii and iv.
   C. i, iii and iv.
   D. i and iv.

4. **Assertion. (A):** In the 18th And 19 centuries. The tempo of agricultural and manufacturing labour increasingly came to be set by the clock and calendar, in a way very different from pre modern forms of work.

   Reason (R): Prior to the development of industrial capitalism, work rhythms were set by factors such as the period of daylight. The break between tasks, and the constraints of deadline or other social duties.

   Codes.

   A. Both A and R. True and r is the correct explanation of A.
   B. Both A and R are true, but are is not the correct explanation of A?
   C. A is false, but R is true.
   D. A is false, but R is true.

5. Modes of action which do not conform to the norms or values held by most of the members of a group or society are------

   A. Sanction
   B. Norms
   C. Deviance
   D. Value

6. Personal, uncodified and unofficial type of social control is called ----------

   A. Informal
   B. Functional
   C. Formal
   D. None of these

7. **Assertion (A):** Every aspect of the life of every individual and household is affected by stratification.

   Reason (R): In traditional India, different castes formed a hierarchy of social presidents. Each position in the caste structure was defined in terms of its purity or pollution relative to others.

   Codes.
   A. Both A and R. True and r is the correct explanation of A.
   B. Both A and R are true, but are is not the correct explanation of A
   C. A is false, but R is true.
   D. A is false, but R is true.

8. Colonialism was an essential part of modern capitalism and industrialisation. The writings of western sociologist on capitalism and other aspects of modern society are therefore relevant for understanding social change in India. Which of the following is true in the given context?
   A. Colonialism is always important to be a capital state.
   B. One can get an understanding of society with the help of western writing
   C. Modern society welcomes the idea of social change.
   D. Modern capitalism and industrialisation are influenced by colonialism.
   Code.
   A. i and ii.
   B. ii. iii and iv.
   C. iii and iv.
   D. All of these.

9. -------------- emphasises the analysis of social systems and population on large scale.
   A. Functionalist theory
   B. Conflict theory
   C. Micro sociology
   D. Macro sociology

10. According to sociologist ...., the number of joint families have gradually increased in post independence India. According to him, the rising life expectancy in India is a contributing factor.
    A. A.M. Shah
    B. Emile Durkheim
    C. Herbert Spencer
    D. George Simmel

                    OR
    For ....no society can survive without a 'common base', a certain number of ideas, sentiments and practises which education must inculcate in all children indiscriminately to whatever social category they belong.
    A. Max Weber
    B. Auguste Comte
    C. Emile Durkheim
    D. Clifford Geertz

11. A family where couple lives with the man's parents is called------
    A. Matrilineal
    B. Patrilineal
    C. Matrilocal
    D. Patrilocal

12. **Assertion (A):** Sociological study of religion is similar as a religious or theological study of religion in many ways.
    Reason(R): Sociology conducts empirical studies of how religion actively function in society and its relationship to other institutions.
    Codes
    A. Both A and R. True and r is the correct explanation of A.
    B. Both A and r are true, but are is not the correct explanation of A
    C. A is false, but R is true.
    D. A is false, but R is true.

13. The most important agent of Socialisation in the early childhood is----
    A. Family
    B. Peer group
    C. School
    D. Mass media

14. ------- culture refers to the intangible elements of culture
    A. Material
    B. Non-material
    C. Explicit
    D. Mass

15. The process of socialisation which takes place in school and other institutions is known as----
    A. Personality development
    B. Secondary socialisation
    C. Primary Socialisation
    D. Both A and B

16. **Assertion (A):** Sociological studies are often concerned with investigating how literacy can be made relevant to the lives of people whose families have never gone to school.
    Reason (R): Students of Indian classical music are still discouraged from writing down what they learn rather than carrying it in their memory.
    Codes.
    A. Both A and R. True and r is the correct explanation of A.
    B. Both A and R are true, but are is not the correct explanation of A?
    C. A is false, but r is true.
    D. A is false, but R is true

SECTION – B

17. How sociology is a progressive science?

18. What is Anthropology?

19. Give two differences between Sociology and History.

20. What is a reference group?

21. What is social stratification?
        OR
    What is sanction?

22. What do you understand by the term stateless society?

23. What are the two objectives behind marriage?

24. What do you mean by ethnocentrism?

25. What is custom?

SECTION C

26. List any four relationships between Sociology and Psychology.

27. Write down scope of sociology in detail.

28. Write the difference between in-group and out - group in your own words.
        OR
    Role and status are twin concepts. Explain.

29. What are political institutions? Also differentiate between power and authority.

30. Elucidate social functions of education.

31. Media is extremely important agent of socialization. Discuss.

        OR
    Discuss two different approaches to study cultural change.

32. How culture shapes personality development?

33. Elaborate social importance of stratification.

<center>**OR**</center>

Discuss the important characteristic features of primary group.

34. 'Types of families and their forms are based on various parameters'. How can you find the list of types of family and family forms?

35. **Read the paragraph and answer the questions that follow.**

Clifford Geertz suggested that we look at human actions in the same way as we look at words in a book and see them as conveying a message. "….Man is an animal suspended in web of significance. He himself has a spun. I take culture to be those words….". The research is not for a casual explanation, but for an interpretive one, that is in search for meaning. (Geertz 1973:5) Likewise, Leslie White had placed a comparable emphasis on culture as a means of adding meaning to objective reality, using the example of people regarding water from particular source as holy.

Apart from his mention of art, all the things listed by Tylor are non-material. This is not because Tylor himself never looked at material culture. He was in fact a museum curator, and most of his anthropological writing was based on the examination of artefacts and tools from societies across the world which he had never visited.

a. Discuss the cognitive and normative dimensions of culture. [3]
b. What do you mean by sub cultural groups? Discuss. [3]

PHYSICS CLASS – XII
BLUE PRINT

Unit	Chapter	1 mark	2 Marks	3 marks	4 marks	5 marks	Total
Unit -I	Electrostatics and Current Electricity	5	2	3			18
Unit –II	Moving Charges and Magnetism	4	1	1	1	1	18
Unit –III	Electromagnetic Induction and Alternating Current	4	1	1	1	1	18
Unit –IV	Electromagnetic waves and Ray Optics	3	1	2	-	1	16
	Total No. Of Questions	16	5	7	2	3	33
	Total Marks	16	10	21	08	15	70