परमाणु ऊर्जा शिक्षण संस्था

Atomic Energy Education Society

टर्म-I परीक्षा / Term-I Examination 2025- 26

कक्षा/ Class : VIII **अवधि/Duration :3 Hours**

विषय/Subject :Mathematics **अधिकतम अंक/Maximum Marks : 80**

सामान्य निर्देश / General Instructions:

- This Question Paper has 5 Sections A, B.C, D and E.
- Section A has 20 MCQ carrying 1 mark each.
- Section B has 5 Question carrying 2 marks each.
- Section C has 6 questions carrying 3 marks each.
- Section D has 4 questions carrying 5 marks each.
- Section E has 3 case based integrated assessments carrying 4 marks each.
- All questions are compulsory.

SECTION A

(Questions 1 to 20 carry 1 mark each)

Q1] The square of 111 is _____. 1

(a) 14641 (b) 12321 (c) 126021 (d) 13231

Q2] _____ has a palindrome pattern. 1

(a) 132201 (b) 1020101 (c) 17701 (d) 18981

Q3] The common multiple of 21 and 27 is _____. 1

(a) 189 (b) 180 (c) 170 (d) 179

Q4] The point (0,0) lies on: 1

(a) X axis (b) Y axis (c) Origin (d) All of these

Q5] _____ is the number whose sum of digits is 25. 1

(a) 8809 (b) 8880 (c) 7773 (d) 77705

Q6] 2.084×10^4 is equal to 1

(a) 2084 (b) 20840 (c) 208.40 (d) 20.84

Q7] Cube of two-digit number will be a 1

(a) 2-digit number (b)3-digit number

(c) 4-digit number (d) 4 to 6-digit number

Q8] The sum of first n odd natural numbers is _____. 1

(a) $2n - 1$ (b) $2n + 1$ (c) $n - 1$ (d) n^2

Q9] Which one among the following has last digit 4? 1

(a) 13^2 (b) 29^2 (c) 32^2 (d) 16^2

Q10] In general, the square root of n^2 is: 1

(a) ±n (b) -n (c) +n (d) 2n

Q11] Which one among the following is a Taxicab number? 1

(a) 1792 (b) 1729 (c) 4103 (d) 4102

Q12] A number is a perfect cube if its prime factors can be split into _____ identical groups. 1

(a) one (b) two (c) three (d) four

Q13] The value of the expression $(-3)^2 \times (-5)^2$ is: 1

(a) $-(3\times5)^2$ (b) -225 (c)15 (d) 225

Q14] Compute the value of $(-3)^5$. 1

(a) -243 (b) 243 (c) -15 (d) 15

Q15] Which among the following can be is represented by the roman numeral XXVII ? 1

(a) 27 (b) 28 (c) 29 (d) 26

Q16] A _____ number system is called a decimal number system. 1

(a) base-4 (b) base-5 (c) base-8 (d) base-10

Q17] Which one among the following has last digit 3? 1

(a) 27^3 (b) 24^3 (c) 23^3 (d) 21^3

Q18] 1 Trillion = _____. 1

(a) 10^{11} (b)10^{12} (c) 10^{13} (d) 10^{14}

Q19] Assertion: The cube of a negative number is always negative. 1

Reasoning: The product of three negative numbers is always negative.

Which of the following options is correct?

a) Both assertion and reasoning are true, and the reasoning explains the assertion.

b) Both assertion and reasoning are true, but the reasoning does not explain the assertion.

c) The assertion is true, but the reasoning is false.

d) The assertion is false, but the reasoning is true

Q20] Assertion: $\sqrt{(16 \times 9)} = \sqrt{16} \times \sqrt{9}$ 1

Reasoning: $\sqrt{(ab)} = \sqrt{a} \times \sqrt{b}$ for all non-negative real numbers a and b.

Which of the following options is correct?

a) Both assertion and reasoning are true, and the reasoning explains the assertion.

b) Both assertion and reasoning are true, but the reasoning does not explain the assertion.

c) The assertion is true, but the reasoning is false.

d) The assertion is false, but the reasoning is true

SECTION B

(Questions 21 to 25 carry 2 marks each)

Q21] Using the digits 3, 4, 5 form any four palindromic numbers (a digit can repeat two times only) 2

Q22] Identify two super cells in following series. 2

7865	4321	5000	3999	2365	999

Q23] How many numbers lie between the squares of 13 and 14? 2

Q24] Find the value of the expression $(3^0 \times 7^2 \times 2^3) - 2^3$. 2

Q25] Represent the following numbers in the Roman system. 2

(a) 324 (b) 37

SECTION C

(Questions 26 to 31 carry 3 marks each)

Q26] Consider 618, 6 + 1 + 8 = 15. 3

Find six more three-digit numbers that give the sum of the digits as 15.

Q27] Find the length of the side of a square whose area is 729 m^2. What is the perimeter of this square? 3

Q28] Find cube root of 1728. 3

Q29] Express the following in exponential form: 3

(a)5 x 5 x 5 x 2 x 2 x 7 x 7 x 7

(b) a x a x b x a x a x c x c x b x c x a

Q30] Add the following roman numerals. CCXXXIV + CCCXII 3

Q31] Find the smallest square number that is divisible by each of the following numbers: 4, 9, and 10. 3

SECTION D

(Questions 32 to 35 carry 5 marks each)

Q32] Find the smallest number by which 968 must be multiplied so that the product is a perfect square. Find the square root of the product. 5

Q33] (i) Evaluate the following: 2*2½

(a) $\frac{8^{-1} \text{ x } 5^3}{2^{-4}}$ (b) $\frac{(5^{-1} \text{ x } 2^{-1}) \text{ x } 6^{-1}}{2^0}$

Q34] 8649 students were sitting in a lecture room in such a manner that there were as many students in a row as the number of rows in the lecture room.

(a) Is 8649 a perfect square?(Explain with proper steps) 2

(b) How many students were there in each row of the lecture room? 2

(c) How many rows were there in lecture room? 1

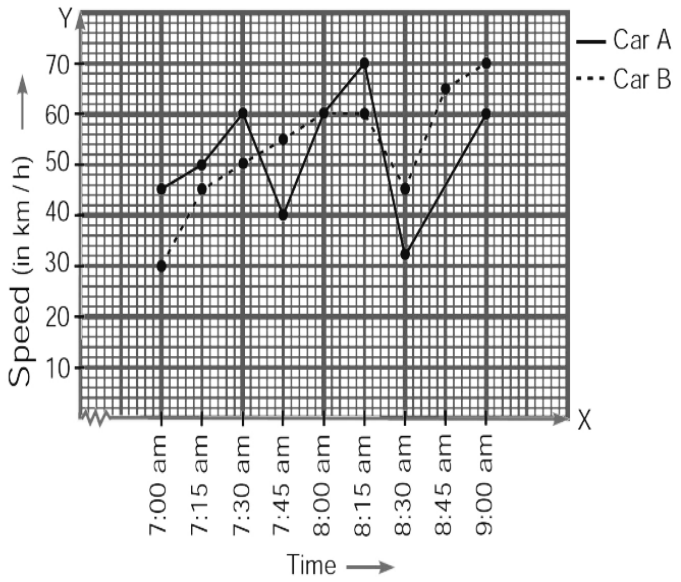
Q35] The number of bottles of milk sold by a shopkeeper on six consecutive days is as given. Prepare a bar graph of the data. 5

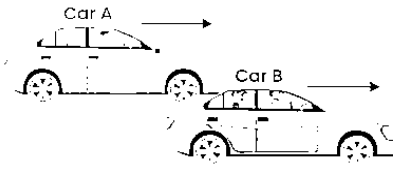
Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
No. of Bottles	**350**	**200**	**300**	**250**	**150**	**100**

SECTION E

(Questions 36 to 38 carry 4 marks each)

Q36] The given graph shows the Speed-Time graph for car A and car B. Read the graph and answers the following questions.





a) What is the difference in the speeds of car A and car B at 7:30am? 1

b) At what time is the speed of car A the maximum? 1

c) What is the difference in the speed of car B at 7 am and 9 am? 2

Q37] The weight of a poppy seed is 0.0002985 g. A jar contains 50,40,000 poppy seeds approximately. A measuring cup that can hold approximately 45,000 poppy seeds is used to measure the seeds. Based on the above information answer the following:

(a) Express the weight of a poppy seed in standard form. 1

(b) A teaspoon can hold 3125 seeds approx. Express 3125 in exponential form. 1

(c) Write the reciprocal of $\frac{1}{50,00,00,000}$ and express it in the exponential form. 2

Q38] Ramesh who is working in a multinational company earns ₹1,50,000 per month. Out of his earnings he spends $1/10^{th}$ on food items, $1/4^{th}$ on shopping with family and $1/5^{th}$ of remaining on education of his two kids and the rest he saves.

Based on the above information, answer the following

i. How much money does he spend on shopping? 1

ii. How much money does he spend on food items? 1

iii. Calculate the amount spent by Ramesh on the education of children 2

***