



परमाणु ऊर्जा शिक्षण संस्था

Atomic Energy Education Society

वार्षिक परीक्षा / Annual Examination 2025-26

कक्षा /Class : VIII

अवधि/Duration : 3 Hours

विषय / Subject : Mathematics

अधिकतम अंक/ Maximum Marks : 80

सामान्य निर्देश / General Instructions:

1. This question paper contains 38 questions. All Questions are compulsory.
2. This Question Paper is divided into 5 Sections A, B, C, D and E.
3. In Section A, Question numbers 1-18 are multiple choice questions (MCQs) and questions no.19 and 20 are Assertion- Reason based questions of 1 mark each.
4. In Section B, Question numbers 21-25 are very short answer (VSA) type questions, carrying 02 marks each.
5. In Section C, Question numbers 26-31 are short answer (SA) type questions, carrying 03 marks each.
6. In Section D, Question numbers 32-35 are long answer (LA) type questions, carrying 05 marks each.
7. In Section E, Question numbers 36-38 are case study-based questions carrying 4 marks each with sub parts of the values of 1, 1 and 2 marks each .
8. There is no overall choice. However, an internal choice has been provided in the 2 mark question of Section E. Only one of the choices in such questions must be attempted

SECTION – A (1 Mark x 20 = 20 Marks)

1. Which digit should replace * in $84*2$ so that the number is divisible by 11?
a) 3 b) 6 c) 7 d) 9
2. The value of $52^2 - 48^2$ is
a) 400 b) 200 c) 300 d) 500
3. Which of the following is equal to 24%?
a) $\frac{6}{25}$ b) $\frac{12}{25}$ c) $\frac{3}{25}$ d) $\frac{48}{50}$
4. If 25% of a number is 30, what is the number?
a) 60 b) 90 c) 100 d) 120
5. If $k = 2$, then the value of the expression $5k - 2$ is
a) -2 b) 8 c) 5 d) 4
6. In an isosceles right triangle with equal sides of length 1 unit, the length of the hypotenuse is:
a) 1 unit b) 2 units c) $\sqrt{2}$ units d) $\sqrt{3}$ units

7. Which of the following best describes the number $\sqrt{2}$?
a) A terminating decimal
b) A fraction
c) A non-terminating decimal
d) A whole number
8. If (a, b, c) is a Baudhāyana triple, then which of the following is also a Baudhāyana triple?
a) $(a + 1, b + 1, c + 1)$
b) (a^2, b^2, c^2)
c) $(2a, 2b, 2c)$
d) $(a-1, b-1, c-1)$
9. A man mixes 600 mL of orange juice with 900 mL of apple juice to make a fruit drink. The ratio (in the simplest form) of orange juice to apple juice is
a) 9 : 6
b) 6 : 9
c) 2 : 3
d) 3 : 2
10. In a pie chart, if a category represents 25% of the data, the angle corresponding to this category is:
a) 45°
b) 90°
c) 60°
d) 120°
11. Which of the following numbers is divisible by 9?
a) 4051
b) 418
c) 83547
d) 1001
12. If x and y are inversely proportional and $x_1 = 4, y_1 = 10$, then when $x_2 = 5$, y_2 is:
a) 8
b) 12
c) 10
d) 20
13. Nandini has 25 marbles, of which 15 are white. The percentage of her white marbles is
a) 10%
b) 15%
c) 25%
d) 60%
14. If $(a+b)(a-b) = 45$ and $a=7$, then b is
a) 2
b) 1
c) 4
d) 3
15. The ratio of the angles of a triangle is 2:4:6, the largest angle of the triangle is
a) 30°
b) 90°
c) 60°
d) 120°
16. A car travels 90 km in 150 minutes. If it continues at the same speed, the distance it covers in 4 hours is
a) 90km
b) 144 km
c) 240 km
d) 60 km
17. The population of elephants in national park increased by 5% in the last decade. If the population of the elephants last decade is p , the population now is

- | | |
|--------------------|-------------------|
| a) $p \times 0.5$ | c) $p \times 1.5$ |
| b) $p \times 1.05$ | d) $p + 1.50$ |

18. If 24 pencils cost ₹ 120, then the cost of 20 pencils is

- | | |
|----------|----------|
| a) ₹ 120 | b) ₹ 100 |
| c) ₹ 60 | d) ₹ 240 |

DIRECTIONS: In the question number 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option:

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

19. **Assertion(A):** A number divisible by 4 must be even.

Reason (R) : Every multiple of 4 contains factor 2

20. **Assertion (A) :** $(a + b)(a - b) = a^2 + b^2$.

Reason (R) : The middle terms cancel out when the distributive property is applied in the above statement.

SECTION – B (2 Marks x 5 = 10 Marks)

21. The maximum marks in a test are 75. If students score 80% or above in the test, they get an A grade. How much should Anil score at least to get an A grade?
22. If the hypotenuse of an isosceles right triangle is $\sqrt{72}$ units. Find its other two sides.
23. Compute 397×403 using an appropriate identity
24. The sum of four consecutive numbers is 34. What are these numbers?
25. When Neelima was 3 years old, her mother's age was 10 times her age. What would be the ratio of their ages when Neelima is 12 years old?

SECTION – C (3 Marks x 6 = 18 Marks)

26. Fill in the blanks:

- | | |
|--------------------------|-----|
| (i) 3 is ____ % of 300. | [1] |
| (ii) ____ is 40% of 4. | [1] |
| (iii) 40 is 80% of ____. | [1] |

27. Check the divisibility of 857076 by 3, 4 and 11 [3]

28. A tap takes 15 seconds to fill a mug of water. The volume of the mug is 500 mL. How much time does the same tap take to fill a bucket of water if the bucket has a 10 litre capacity? [3]
29. To make a special shade of purple, paint must be mixed in the ratio Red : Blue : White :: 2 : 3 : 5. If Yasmin has 10 litres of white paint, how many litres of red and blue paint should she add to get the same shade of purple? What is the total volume of this purple paint? [3]
30. (i) Expand $(a+ab-3b^2)(4+b)$.
 (ii) Consider two numbers a and b . Find the change in the product of the numbers when both numbers are increased by 1. [3]
31. (a) Find the sidelength of a rhombus whose diagonals are of length 24 units and 70 units.
 (b) Find the diagonal of a square with sidelength 5 cm. [3]

SECTION – D (5 Marks x 4 = 20 Marks)

32. Giridhar borrows a loan of ₹12,500 at 12% per annum for 3 years without compounding and Raghava borrows the same amount for the same time period at 10% per annum, compounded annually. Who pays more interest and by how much? [5]
33. i) By applying distributive property, expand $(-2a + 3)^2$
 ii) Express 100 as the difference of two squares.
 iii) Write an algebraic expression for the statement -
 (a) Two more than a square number s
 (b) Sum of the squares of two consecutive numbers. [5]
34. a) Write the digital root of the number 489710.
 b) Find multiple of 9 that is closest to and greater than the number 6000.
 c) Find a number that leaves a remainder of 2 when divided by 3, a remainder of 3 when divided by 4, and a remainder of 4 when divided by 5. What is the smallest such number possible?
 (d) 'If a number is divisible by 12, then the number is also divisible by all the factors of 12'. Determine whether the statement is Always True, Sometimes True or Never True [5]
35. (a) If 5 workers can move 4500 bricks in a day, how many workers are needed to move 18000 bricks in a day?
 (b) A school has food provisions to feed 80 students for 15 days. If 20 more students join the school, for how many days will the provisions last?
 (c) Find two ratios that are proportional to 4 : 9. [5]

SECTION – E (4 Marks x 3 = 12 Marks)

36. A stone pillar is broken at a point and the top touches the ground 9 units away from the foot of the pillar. The broken part of the pillar measures 15 units.

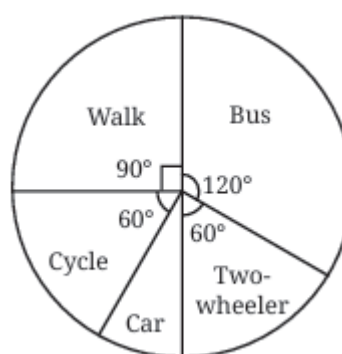
- a) Find the height of the unbroken part of the pillar [1]
- b) What is the original height of the pillar. [1]
- c) If $(9, x, 41)$ forms a Baudhāyana triple, then find x . [2]

OR

- c) Find a primitive Baudhāyana triple with the 13^{th} odd number as one of the terms of the triple. [2]

37. The pie chart on the right shows the result of a survey carried out to find the modes of transport used by children to go to school.

Study the pie chart and answer the following questions.



- i) What fraction of children travel by car? [1]
- ii) By which modes of transport are equal numbers of children travelling? [1]
- iii) If 18 children travel by car, how many children took part in the survey? [2]

OR

- iii) If 18 children travel by car, how many children travel by two wheeler ? [2]

38. A farmer harvested 500 kg of wheat in one season.

- He sold 40% of the wheat in the local market.
- From the remaining wheat, he stored 60% in his granary.

- i) Write the fraction of wheat that was sold by the farmer. [1]
- ii) How much wheat (in kg) was sold by the farmer? [1]
- iii) How much wheat (in kg) was finally stored in the granary? [2]

OR

- iii) If he stored 400 kg of the total wheat harvested, in the granary, how much percentage of wheat is sold by him? [2]
