



Minervaa International Scholarship Examinations

Sample Question Paper

Class- 8

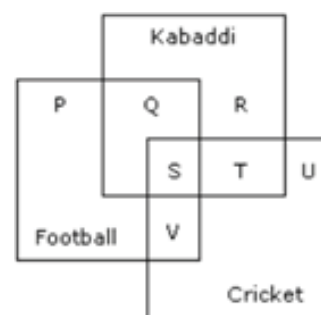
Subject- Mathematics



LOGICAL REASONING

- Which term fits the pattern?
121, 144, 169, ?, 225
a) 182 b) 196 c) 200 d) 188
- If $\otimes$ means add 2 to a number, and $\oplus$ means subtract 1, what is the result of:
 $\oplus(\otimes 3) \otimes (\oplus 4) = ?$
a) 9 b) 8 c) 7 d) 6
- A code language follows the rule:
BALL = 12, CALL = 13, DOLL = ?
a) 14 b) 15 c) 16 d) 12
- If 'star' is coded as '1234', and 'rats' is coded as '4231', then how is 'arts' coded?
a) 2341 b) 3241 c) 2431 d) 4321
- The diagram given below represent those students who play Cricket, Football, Kabaddi.
How many students play both Kabaddi and Football but not Cricket?

- P
- Q
- S
- T



MATHEMATICS

- Which of the following is equal to $2^3 \times 2^4$

a) 2^7 b) 2^{12} c) 2^1 d) 2^{3+4}

- Match the following:

1. 10^3	A. 1
2. 10^6	B. 0.01
3. 10^0	C. 1000
4. 10^{-2}	D. 1,000,000

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

8. What is the simplified form of $\frac{2^5 \times 2^3}{2^6}$

- a) 2^2
- b) 2^1
- c) 2^5
- d) 2^8

9. Which of the following is equal to $(3^2)^3$?

- a) 3^5
- b) 3^6
- c) 9^3
- d) 3^9

10. Which number will lie exactly between $\frac{3}{8}$ and $\frac{7}{8}$ on the number line?

- a) $\frac{4}{8}$
- b) $\frac{6}{8}$
- c) $\frac{5}{8}$
- d) $\frac{9}{8}$

11. True or False with reasoning:

Statement: The sum of two negative rational numbers is always negative.

- a) True, as signs remain same
- b) False, because one can be greater
- c) True, as rational numbers cancel
- d) False, as subtraction occurs

12. Which of the following rational numbers is the smallest ?

- a) $-\frac{3}{4}$
- b) $\frac{2}{5}$
- c) $-\frac{1}{2}$
- d) $\frac{1}{3}$

13. Which of the following is the factorized form of $x^2 + 5x + 6$?

- a) $(x+2)(x+3)$
- b) $(x-2)(x+3)$
- c) $(x-3)(x-2)$
- d) $(x+1)(x+6)$

14. Which of the following cannot be factorised further?

- a) $x^2 - 9$
- b) $x^2 + 2x + 1$
- c) $x^2 + 7$
- d) $x^2 + 9$

15. Match the following:

- 1. $a^2 - b^2$
- 2. $(a + b)^2$
- 3. $(a - b)^2$
- 4. $ab + ac$

- A. $(a+b)(a-b)$
- B. $a^2 + 2ab + b^2$
- C. $a(c+b)$
- D. $a^2 - 2ab + b^2$

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

16. The common factor of $6xy$ and $9x^2y$ is

- a) $3xy$
- b) $6x^2y$
- c) $9xy$
- d) $3x^2y$

17. Which of the following is a monomial ?

- a) $3x + 4$
- b) $5xy$
- c) $x^2 + y^2$
- d) $x + y + z$

18. What is the degree of the polynomial $7x^3 - 5x^2 + x - 2$?

- a) 1
- b) 2
- c) 3
- d) 4

19. Simplify: $(2x + 3y) + (4x + 5y)$

- a) $6x - 2y$
- b) $2x - 2y$
- c) $6x + 8y$
- d) $2x + 8y$

20. Find the value of $(5x + 3)^2$

- a) $25x^2 + 9$
- b) $25x^2 + 30x + 9$
- c) $5x^2 + 9x + 9$
- d) $25x^2 - 30x + 9$

21. Which of these numbers will have an odd number of factors?

- a) 36
- b) 49
- c) 60
- d) 72

22. What is the square root of 0.0081?

- a) 0.81
- b) 0.09
- c) 0.09
- d) 0.9

23. True or False with reasoning:

Statement: Every positive number has exactly one square root.

- a) True, because square roots are positive
- b) False, because there are two square roots
- c) True, because negatives are ignored
- d) False, because no number has square roots

24. Find the least number that must be added 88 to make it a perfect square.

- a) 1
- b) 2
- c) -7
- d) -4

25. The square root of which number is an irrational number?

- a) 81
- b) 100
- c) 50
- d) 49

26. The number of digits in the square root of 12321 is

- a) 1
- b) 2
- c) 3
- d) 4

27. Which number needs to be multiplied to 128 to make it a perfect cube?

- a) 2
- b) 4
- c) 8
- d) 16

28. The cube of -3 is

- a) -9 b) 9 c) -27 d) 27

29. What is the value of $(\sqrt[3]{-64})$?

- a) 4 b) - 4 c) 8 d) -8

30. If 30% of a number is 60, what is the number?

- a) 180 b) 200 c) 150 d) 100

31. If a man saves 20% of his income and spends ₹8000, find his income.

- a) ₹10000 b) ₹8000
c) ₹12000 d) ₹16000

32. If the population of a town increases from 20000 to 25000, what is the percentage increase?

- a) 20% b) 25% c) 30% d) 35%

33. In an examination, 480 students appeared and 360 passed. What is the pass percentage?

- a) 65% b) 70% c) 75% d) 80%

34. Which of the following sets of data is sufficient to construct a unique quadrilateral?

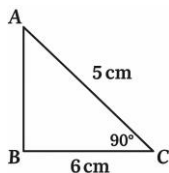
- a) 4 sides and 1 angle
b) 2 sides and 3 angles
c) 3 sides and 2 angles
d) 4 angles only

35. Match the following:

- | | |
|--|------------------|
| A. Opposite sides equal and parallel | 1. Parallelogram |
| B. Four right angles | 2. Rectangle |
| C. All sides equal but angles not 90° | 3. Rhombus |
| D. All sides equal and angles 90° | 4. Square |

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

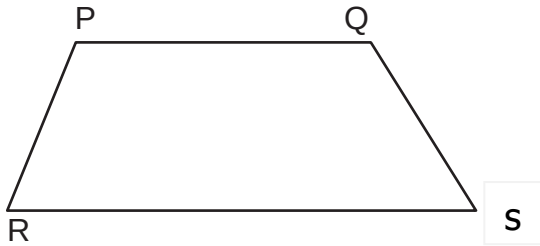
36. Diagram-based:



Based on the diagram, what type of quadrilateral will you get if AD = 5 cm and CD = 6 cm?

- a) Square b) Rectangle
c) Rhombus d) Trapezium

37. Diagram-based:



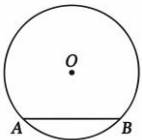
Which property must be used to complete construction of PQRS?

- a) Diagonals are equal
- b) Opposite sides are equal
- c) Opposite sides are parallel
- d) Diagonals bisect at right angles

38. Which of the following is true for a diameter of a circle?

- a) It is half of radius
- b) It is equal to radius
- c) It is twice the radius
- d) It is one-fourth the radius

39. Diagram-based:



If AB passes through O, then AB is

- | | |
|---------------|-------------|
| a) A radius | b) A chord |
| c) A diameter | d) A secant |

40. If the radius of a circle is doubled, what happens to its circumference?

- | | |
|-----------------|-----------------|
| a) Remains same | b) Doubles |
| c) Triples | d) Becomes half |

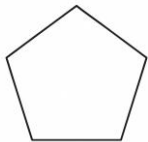
41. The area of a circle with radius 7cm is

- | | | | |
|-----------------------|-----------------------|-----------------------|----------------------|
| a) $49\pi\text{cm}^2$ | b) $14\pi\text{cm}^2$ | c) $28\pi\text{cm}^2$ | d) $7\pi\text{cm}^2$ |
|-----------------------|-----------------------|-----------------------|----------------------|

42. Which of the following has rotational symmetry but no line symmetry?

- | | |
|-------------------------|---------------------|
| a) Equilateral triangle | b) Scalene triangle |
| c) Circle | d) Rectangle |

43. Diagram-based:



How many lines of symmetry does the figure have?

- | | | | |
|------|------|------|------|
| a) 5 | b) 3 | c) 2 | d) 4 |
|------|------|------|------|

44. The ratio of two numbers is 4:5. If 20 is added to both, the ratio becomes 6:7. Find the original numbers.

- | | | | |
|-----------|-----------|------------|-----------|
| a) 40, 50 | b) 60, 75 | c) 80, 100 | d) 32, 40 |
|-----------|-----------|------------|-----------|

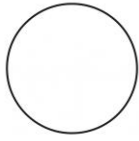
45. If the ratio of A to B is 2:3 and B to C is 4:5, what is the ratio A:B:C?

- a) 8:12:15 b) 2:4:5 c) 3:6:5 d) 4:8:5

46. Which 3D solid's cross section is always a circle when cut horizontally?

- a) Cube b) Cone c) Sphere d) Cylinder

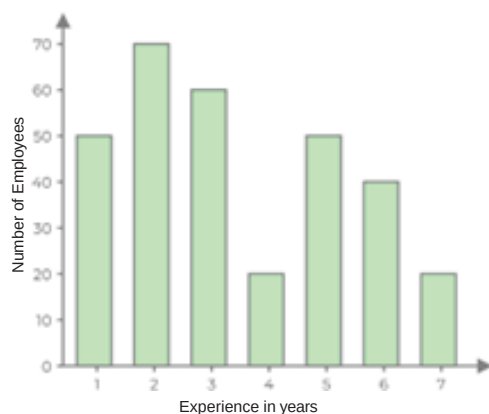
47. Diagram-based



What shape will you see in the top view?

- a) Rectangle b) Circle
c) Square d) Triangle

48. Following chart shows experience (in years) for employees working in an organization. Employees with experience of 3 years and above are considered senior staff, while rest are considered junior staff. Find the number of junior staff in the organization.

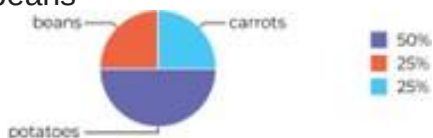


- a) 110 b) 120 c) 130 d) 140

49. The radius of a circle is increased by 20%. By what percent does the area of the circle increase?

- a) 20% b) 40% c) 44% d) 48%

50. The chart shows the production of different vegetables in a farm. If the production of beans was 3000 kg, find the combined production of potatoes and beans



- a) 8760 kg. b) 9000 kg.
c) 9120 kg. d) 8880 kg.

1.b	2.d	3.a	4.b	5.b	6.a	7.a	8.a	9.b	10.c
11.a	12.a	13.a	14.c	15.a	16.a	17.b	18.c	19.c	20.b
21.b	22.b	23.b	24.c	25.c	26.c	27.b	28.c	29.b	30.b
31.a	32.b	33.c	34.a	35.a	36.d	37.c	38.c	39.b	40.b
41.a	42.b	43.a	44.a	45.a	46.d	47.b	48.b	49.c	50.b