

1. Which of the following statements is correct?

- A. All natural numbers are whole numbers, all whole numbers are integers
- B. All whole numbers are integers, all integers are natural numbers
- C. All integers are whole numbers, all natural numbers are integers
- D. All integers are whole numbers, all integers are natural numbers

2. The value of $+|7|+|5|-|7|-|-3|$, where $||$ is absolute value of an integer is _____.

- A. 0
- B. 1
- C. 2
- D. 3

3. The value of $(-5) \times (-4) \times (-3) \times (-2) \times (-1) \times 0 + 0 \times (1) \times (2) \times (3) \times (4) \times (5)$ is _____.

- A. 120
- B. -120
- C. 240
- D. 0

4. Which pair of numbers does not have a product equal to 36?

- A. $\{-4, -9\}$
- B. $\{-3, -12\}$
- C. $\left\{\frac{1}{2}, -72\right\}$
- D. $\{1, 36\}$

5. A rational number $\frac{-2}{3}$

- A. Lies to the left side of 0 on the number line
- B. Lies to the right side of 0 on the number line
- C. It is not possible to represent on the number line
- D. Cannot be determined on which side the number lies

6. How many pieces of equal size can be cut from a rope of 30 metres long, each measuring $3\frac{3}{4}$ metres?

- A. 8
- B. 10
- C. 6
- D. 12

7. For any two rational numbers x and y which of the following properties are correct?

- (1) $x < y$
- (2) $x = y$
- (3) $x > y$

- A. Only 1 and 2 are correct

- B. Only 2 and 3 are correct
- C. Only 2 is correct
- D. All 1, 2 and 3 are correct

8. Which of the following statements is true?

- A. 1 and -1 are reciprocal of themselves
- B. Zero has no reciprocal
- C. The product of two rational numbers is a rational number
- D. All of the above

9. The value of x so that $\frac{3}{4}(7x - 1) - \left(2x - \frac{1-x}{2}\right) = x + \frac{3}{2}$ is _____.

- A. 2
- B. 3
- C. 1
- D. 0

10. If $\sqrt{1 + \frac{x}{144}} = \frac{13}{12}$, then x is equal to _____.

- A. 0
- B. 12
- C. 13
- D. 25

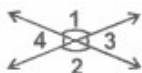
11. A person travelled $\frac{5}{8}$ th of the distance by train, $\frac{1}{4}$ th by bus and the remaining 15 km by boat. The total distance travelled by him was _____.

- A. 90 km
- B. 120 km
- C. 150 km
- D. 180 km

12. If $7x + 3 = 17$, what is the value of $7x - 3$?

- A. 14
- B. 11
- C. 0
- D. -3

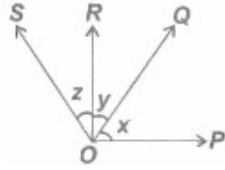
13. Which of the following is false?



- A. $\angle 1 = \angle 2$
- B. $\angle 1 + \angle 3 = 180^\circ$
- C. $\angle 1 = \angle 4$

D. $\angle 3 = \angle 4$

14. In the given figure $\angle POR = 90^\circ$ and OQ bisects $\angle POS$, then the value of $2y + z$ is _____.



- A. 60°
- B. 45°
- C. 90°
- D. 30°

Which of the following statements is true?

p: A ray OP is denoted by \overrightarrow{OP}

15. q: A line AB is denoted by \overline{AB}

- A. Both p and q are true
- B. p is true and q is false
- C. p is false and q is true
- D. Both p and q are false

16. The angle between two hands of a clock at 4 : 30 pm is _____

- A. 45°
- B. 90°
- C. 180°
- D. 60°

17. In the given $\triangle ABC$ if $AB = AC$ and $BD = DC$, then $\angle ADC =$ _____



- A. 60°
- B. 120°
- C. 90°
- D. 45°

18. In $\triangle ABC$, $AB = AC$ and AD is perpendicular bisector of BC. The property by which $\triangle ADB$ is not congruent to $\triangle ADC$ is _____.

- A. SAS property
- B. SSS property
- C. RHS property
- D. AAA property

19. If the two legs of a right angled triangle are equal and the square of the hypotenuse is 100 cm^2 , then the length of each leg is _____

- A. 10 cm
- B. $5\sqrt{2}$ cm
- C. $10\sqrt{2}$ cm
- D. $13\sqrt{2}$ cm

20. Which of the following statement(s) is/are true?

- A. In an isosceles triangle, the angles opposite to equal sides are equal.
- B. The bisector of the vertical angle of an isosceles triangle bisects the base at right angles.
- C. If the hypotenuse and an acute angle of one right angled triangle is equal to the hypotenuse and the corresponding acute angle of another triangle, then the triangles are congruent.
- D. All of the above.

21. P can do a piece of work in 9 days. Q is 50% more efficient than P. The number of days it takes Q to do the same piece of work is _____.

- A. $13\frac{1}{2}$
- B. $4\frac{1}{2}$
- C. 6
- D. 3

22. A man buys a radio for Rs. 600 and sells it at a gain of 25%. He sold the radio for _____.

- A. Rs.700
- B. Rs.750
- C. Rs.900
- D. Rs.1000

23. A business man sells shirts at a profit of $12\frac{1}{2}\%$ and invests the proceeds to buy pants which he sells at a profit of 20%. If he makes a net profit of Rs. 700, the cost of the shirts is _____.

- A. Rs.2300
- B. Rs.2500
- C. Rs.2000
- D. Rs.2400

24. The CP of 25 articles is equal to the SP of 20 articles. Then gain % is _____.

- A. 25%
- B. 20%
- C. 30%
- D. 50%

25. An object is dropped from a small plane flying at a height of 1000 cm above the ground. As the object falls, d , its distance above the ground after t seconds is given by the formula below $d = -16t^2 + 1000$. How far above the ground is the object, when it has fallen for 4 seconds?

- A. 984 cm
- B. 936 cm
- C. 872 cm
- D. 744 cm

26. Simplify $(a^3 - 2a^2 + 4a - 5) - (-a^3 - 8a + 2a^2 + 5)$

- A. $2a^3 + 7a^2 + 6a - 10$
- B. $2a^3 + 7a^3 + 12a - 10$
- C. $2a^3 - 4a^2 + 12a - 10$
- D. $2a^3 - 4a^2 + 6a - 10$

27. On simplification the product of given expression $\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)$ is _____.

- A. $x^3 - \frac{1}{x^3}$
- B. $x^3 + \frac{1}{x^3}$
- C. $x^4 - \frac{1}{x^4}$
- D. $x^4 + \frac{1}{x^4}$

28. By how much is $a^4 + 4a^2b^2 + b^4$ more than $a^4 - 8a^2b^2 + b^4$?

- A. $12 a^2 b^2$
- B. $- 12a^2 b^2$
- C. $2a^4 + 2b^4$
- D. $10 a^2b^2$

29. The value of $a^b - b^a$, if $a = 3$, $b = 7$ is _____.

- A. 1825
- B. 1840
- C. 1844
- D. 1850

30. $\left[\left\{ \left(-\frac{1}{2} \right)^2 \right\}^{-2} \right]^{-1} = ?$

- A. $\frac{1}{16}$
- B. 16
- C. $\frac{-1}{16}$
- D. -16

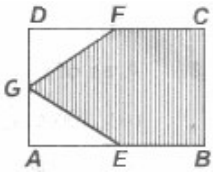
31. By what number should we multiply 4^{-3} so that the product may be equal to 64?

- A. 4^5
- B. 2^{12}
- C. 2^6
- D. 2^8

32. Express 0.0084 in scientific notation.

- A. 84×10^{-4}
- B. 8.4×10^{-3}
- C. 0.84×10^{-2}
- D. 8.4×10^{-5}

33. Calculate the area of the shaded region of the following figure. ABCD is a rectangle having length 30 cm, breadth 20 cm. E, F and G are midpoints of AB, CD and AD respectively.



- A. 400 cm^2
- B. 450 cm^2
- C. 375 cm^2
- D. 325 cm^2

34. The length of a minute hand of a wall clock is 8.4 cm. Find the area swept by it in half an hour.

- A. 100 cm^2
- B. 110.88 cm^2
- C. 120 cm^2
- D. 130 cm^2

35. The area of two circles are in the ratio 25 : 36. Then the ratio of their circumference is _____

- A. 6:5
- B. 3:4
- C. 4:3
- D. 5:6

36. A horse is tied to one corner of a rectangular field, 60 m by 40 m, by a rope 14 m long. On how much area can the horse graze?

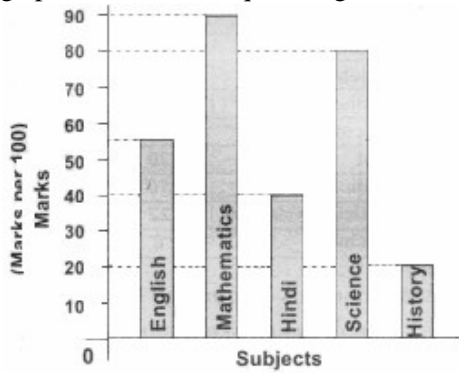
- A. 150 m^2
- B. 154 m^2
- C. 160 m^2
- D. 165 m^2

37. There are two teams A and B in a football match. A coin is tossed to decide which team starts the game. The probability that team A will start the game is _____

- A. 0
- $\frac{1}{2}$

- B. 2
- C. 1
- $\frac{1}{4}$
- D. 4

38. Read the following graph and answer the question given below:



What is the percentage obtained by the student?

- A. 80%
- B. 63%
- C. 57%
- D. 90%

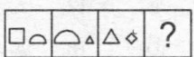
39. Mean of first six prime numbers is _____.

- A. 4.83
- B. 6.83
- C. 5.83
- D. 7.83

40. After rotating by 60° about a centre, a figure looks exactly the same as at its original position. At what other angle will this happen for the figure?

- A. 120°
- B. 100°
- C. 150°
- D. 90°

41. Find the appropriate figure from the answer figures so that question figures form a series.



- A.
- B.
- C.
- D.

42. If A is B's brother, B is C's sister and C is D's father then D is A's

- A. Brother
- B. Sister
- C. Nephew
- D. Data inadequate

43. A die has A, B, C, D written in a clockwise order on the adjacent faces and E & F at the top and bottom respectively. When C is at the top, what will be at the bottom?

- A. B
- B. A
- C. C
- D. F

44. Two hours later would be as long until midnight. What time is it now?

- A. 18:30
- B. 20:00
- C. 21:00
- D. 22:00

45. Ram and his mom are baking cupcakes. The recipe calls for one egg for every dozen cupcakes. Ram finds five eggs in his refrigerator and makes a chart to see how many cupcakes he can make.



Eggs	1	2	3	4	5
Cupcakes	12	24	36	48	-

What is the missing value in the chart?

- A. 17
- B. 49
- C. 60
- D. 72

46. Ela can run 100 metres in 20 seconds. If she competes in the 400 metres race, about how many seconds will it take her to run the race?

- A. 5 secs
- B. 4 secs
- C. 80 secs
- D. 20 secs

47. Choose the expression represented by the model.



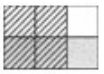
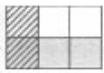


- A. $16 \div (-4)$
- B. $16 \div 4$
- C. $-16 \div 4$

D. None of these

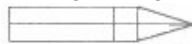
48. What kind of answer results when a rational number is multiplied by zero?

- A. The answer is zero
- B. The answer is the original number
- C. The answer depends on the original number
- D. The answer is the opposite sign of the original number

49. Which model best represents the expression $\frac{1}{2} \times \frac{2}{3}$?

- A. 
- B. 
- C. 
- D. 

50. How many rectangles are there in the given figure ?



- A. 6
- B. 7
- C. 8
- D. 9