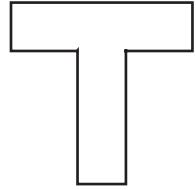


**CENTRE FOR PEDAGOGICAL STUDIES IN MATHEMATICS (CPSM)
ACHIEVEMENT-CUM-DIAGNOSTIC TEST IN MATHEMATICS-2023**

INSTRUCTION: Write your Name, Class Roll No. etc. in the answersheet. Select the correct answer out of (a), (b), (c) and (d) of particular item and fill the specific rectangle ■ with blue/black ball pen denoting the correct answer. For example, if (c) is the correct answer to Q. No. X: blacken like this: Q. No. X: . Rough work is to be done on separate paper. Marks will be deducted for wrong answer. Don't waste time for answering a question which appears difficult to you, better try the next question.

1. Number of right angles in the adjoining figure is

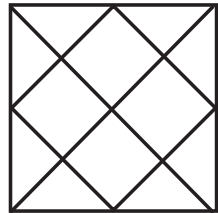


- (a) 6 (b) 12
(c) 8 (d) 10

2. The number of edges of a cube is—

- (a) 4 (b) 8 (c) 16 (d) 12

3. Number of triangles in the adjoining figure is—

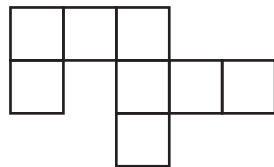


- (a) 14 (b) 16
(c) 20 (d) 18

4. Number of surfaces of a thick hollow right circular cylinder is—

- (a) 2 (b) 3 (c) 4 (d) none of these

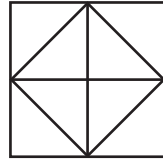
5. If each side of the smallest square in the adjoining figure be 2 cm then the perimeter of the above figure is



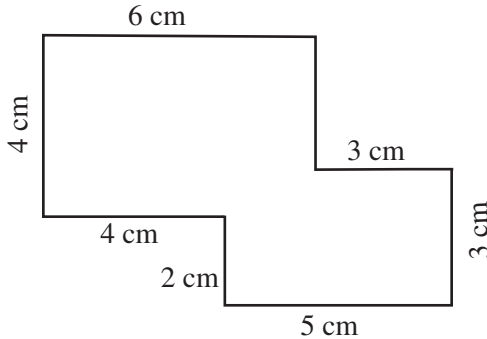
- (a) 32 cm (b) 24 cm
(c) 18 cm (d) 36 cm

6. Number of squares in the adjoining figure is—

- (a) 5 (b) 6
(c) 8 (d) 4



7.

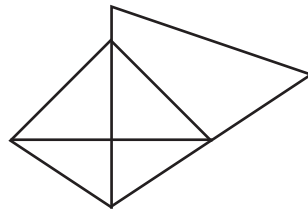


The shape is made of two overlapping rectangles. The lengths of the corresponding sides are given in the figure. What is the area of the figure.

- (a) 39 cm^2 (b) 37 cm^2 (c) 43 cm^2 (d) 41 cm^2

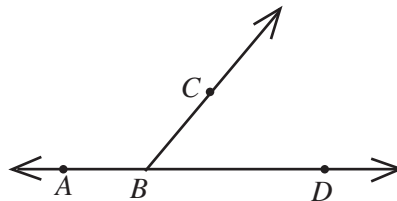
8. Count the number of triangles in the adjoining figure.

- (a) 9 (b) 6
(c) 8 (d) 5



9. Which of the following is not pictured in the diagram.

- (a) ray BD
(b) angle B
(c) line segment CD
(d) line AD



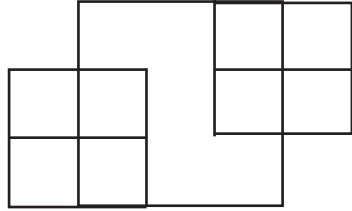
10. In the adjoining figure the number of right angle is

- (a) 6 (b) 7
(c) 8 (d) 5



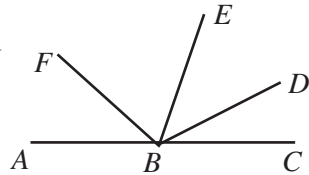
11. Number of squares in the adjoining figure is

- (a) 9 (b) 10
(c) 11 (d) 12



12. In the adjoining figure $\angle ABF = 35^\circ$, $\angle DBE = 53^\circ$ and $\angle CBD = 27^\circ$, find the measure of $\angle EBF$.

- (a) 45° (b) 55°
(c) 53° (d) 65°



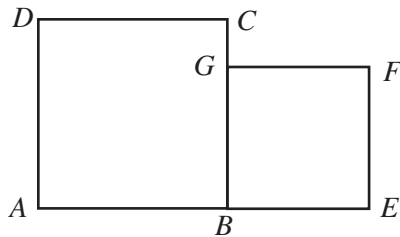
13. The base of a regular tetrahedron is a/an

- (a) equilateral triangle (b) square
(c) right angled triangle (d) isosceles triangle

14. The number of edges of a hexagonal prism is

- (a) 8 (b) 7 (c) 12 (d) 18

15. The figure below is made up of two rectangles $ABCD$ and $BEFG$. Find the area of the figure, given $AE = 30$ cm, $CD = 18$ cm, $DA = 18$ cm and $CG = 2$ cm.



- (a) 544 cm^2 (b) 240 cm^2 (c) 516 cm^2 (d) 540 cm^2

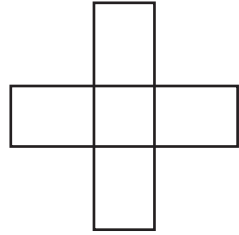
16. How many lines of symmetry can you draw in the adjoining figure.

(a) 2

(b) 4

(c) 6

(d) 8



17. The number of surfaces of a solid right circular cylinder is

(a) 2

(b) 1

(c) 4

(d) 3

18. The solid having only one curved surface is

(a) cone

(b) sphere

(c) hemisphere

(d) cylinder

19. A right prism has 21 edges the base of the prism is a

(a) rectangle

(b) octagon

(c) hexagon

(d) heptagon

20. The solid having only one curved surface is—

(a) solid sphere

(b) hollow sphere

(c) cone

(d) hemisphere

21. I am an even number, you will find me if you count sevens. I am more than 80 but less than 100 who am I?

(a) 96

(b) 82

(c) 84

(d) 92

22. There are 35 students in class V, Sudip ranked 6th in his class, what is his rank from the bottom?

(a) 30th

(b) 29th

(c) 28th

(d) 31st

23. $93.354 - 62.82 - 13.045 =$

(a) 17.489

(b) 17.48

(c) 75.865

(d) 17.5

24. $\left(\frac{65}{12} + \frac{12}{7}\right) \div \left(\frac{65}{12} - \frac{12}{7}\right) =$
- (a) $\frac{288}{311}$ (b) $1\frac{288}{311}$ (c) $\frac{599}{288}$ (d) $2\frac{288}{311}$
25. What should be subtracted from $\left(1 + \frac{3}{10}\right)$ to get $\frac{5}{6}$?
- (a) $\frac{2}{7}$ (b) $\frac{14}{15}$ (c) $\frac{7}{15}$ (d) $\frac{8}{15}$
26. The rational number which is not lying between $\frac{5}{16}$ and $\frac{1}{2}$ is
- (a) $\frac{3}{8}$ (b) $\frac{13}{32}$ (c) $\frac{7}{16}$ (d) $\frac{1}{4}$
27. The numbers 40, 19, 37, 33, 12, 25, 46, 18, 39, 21 are matched in pairs so that the sum of each pair is the same. Which number is paired with 39?
- (a) 19 (b) 25 (c) 18 (d) 33
28. Sum of three consecutive positive integers is 393, find the greatest among these three.
- (a) 132 (b) 131 (c) 303 (d) 133
29. Which of the following pairs of numbers are coprimes ?
- (a) 91, 119 (b) 161, 192 (c) 143, 33 (d) 57, 115
30. The LCM of two numbers is 1024 and one of them is a prime number The HCF of the numbers is
- (a) 10 (b) 3 (c) 4 (d) 2
31. There is a matrix that follows a certain rule row-wise or column wise. Find the missing number.
- (a) 144 (b) 256
(c) 121 (d) 289

7	9	11
81	169	
2	4	6

32. The largest number by which the product of three consecutive even natural number is always divisible is
- (a) 16 (b) 24 (c) 48 (d) 96
33. A pair of prime numbers whose difference is 1 are
- (a) 1, 2 (b) 2, 3 (c) 11, 12 (d) 17, 19
34. How many pairs of composite numbers between 10 and 20 are there which are prime to each other.
- (a) 2 (b) 3 (c) 1 (d) none of these
35. The number 1771A61 is always divisible by 11, where A is a single digit. The possible value of A is
- (a) 4 (b) 7 (c) 6 (d) 5
36. If A and B are single digit numbers, then in the following product.
- $$\begin{array}{r} A \ 4 \ A \\ \times \ A \\ \hline 1 \ B \ 2 \ 9 \end{array}$$
- $A + B$ is equal to
- (a) 7 (b) 9 (c) 5 (d) 3
37. Tatu had Rs. 16000 in his savings account. He with drew one-fourth of it in January, two-fifth of the remainder in February and the rest in March. How much money he with draw in March.
- (a) Rs. 8800 (b) Rs. 4800 (c) Rs. 4500 (d) Rs. 7200
38. The area of a rectangular plot of land is 225.28 square metres. If the length of the plot be 25.6 m. find its breadth.
- (a) 8.8 m (b) 4.4 m (c) 5.7 m (d) 9.7 m

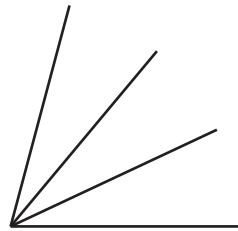
39. A rectangle has a width of 6 metres and an area of 72 square metres. The perimeter of the rectangle is
- (a) 48 m (b) 72 m (c) 36 m (d) 144 m
40. $16 \div (3 + 5) \div \{7 \times 2 + 4 \times 6 - 3(12 \div 6)\} \div (9 + 7) =$
- (a) 4 (b) 1 (c) 2 (d) none of these
41. 20% of what sum is Rs. 15?
- (a) Rs. 75 (b) Rs. 150 (c) Rs. 100 (d) Rs. 160
42. Express $6\frac{2}{3}\%$ in fraction.
- (a) $\frac{1}{3}$ (b) $\frac{1}{5}$ (c) $\frac{1}{15}$ (d) $\frac{1}{20}$
43. What percentage is equal to $\frac{3}{8}$?
- (a) $\frac{25}{2}\%$ (b) 32% (c) 75% (d) $37\frac{1}{2}\%$
44. The ratio of two numbers is 10 : 9 by what percent the first number is more than the second.
- (a) $11\frac{1}{9}\%$ (b) 11% (c) 10% (d) $9\frac{1}{11}\%$
45. The simple interest on Rs. 2500 at 6% for 2 years is
- (a) Rs. 600 (b) Rs. 250 (c) Rs. 300 (d) Rs. 150
46. Find a number whose 30% is 36.
- (a) 360 (b) 240 (c) 60 (d) 120
47. Dolon's weight is 40 kg and Riya's weight is 35 kg. By what percent is Riya's weight less than that of Dolon?
- (a) $12\frac{1}{2}\%$ (b) 12% (c) 15% (d) 5%

48. In an election there are three contestants A , B and C . A secured 30% of the votes and B secured 60% of the remaining votes. If C secured 14000 votes then the total number of voters is—

- (a) 21000 (b) 36000 (c) 50000 (d) 65000

49. How many acute angles are there in the adjoining figure.

- (a) 6 (b) 3
(c) 4 (d) 5



50. In a class the total number of students is 40; out of them 16 are girls what percent of the total students are girls?

- (a) 64% (b) 40% (c) 32% (d) none of these

51. Which fraction is equal to 5% ?

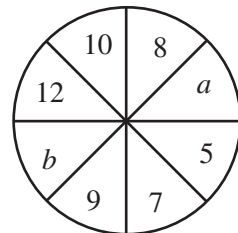
- (a) $\frac{1}{5}$ (b) $\frac{1}{20}$ (c) $\frac{1}{10}$ (d) $\frac{1}{2}$

52. When a number is increased by 40% it becomes 42; the number is—

- (a) 36 (b) 32 (c) 35 (d) 30

53. Find the missing numbers a and b .

- (a) 6, 11 (b) 1, 16
(c) 3, 14 (d) 2, 15



54. The product of two consecutive integers is 1980. The sum of those integers is—

- (a) 65 (b) 131 (c) 65 (d) 89

55. Select the coprime numbers from the following pairs.
- (a) 36, 25 (b) 15, 35 (c) 35, 21 (d) 42, 77
56. In the number $357 * 25 *$ the digits in the unit's place and thousand's place are rubbed out. If the number is divisible by 30 then the greatest value of the number is—
- (a) 3575250 (b) 3579255 (c) 3578250 (d) 3578255
57. The length of a rectangle is 10 m longer than its breadth. If the breadth be 6 m. Find its area.
- (a) 96 m^2 (b) 60 m^2 (c) 100 m^2 (d) 32 m^2
58. In the product given below the symbol * represents a whole number.

$$\begin{array}{r} 8 \ 7 \ * \ 5 \\ \times \ 5 \\ \hline 4 \ 3 \ * \ 7 \ 5 \end{array}$$

Find the missing digit.

- (a) 5 (b) 7 (c) 8 (d) 9
59. The simple interest on Rs. 3000 for $1\frac{1}{2}$ years is Rs. 180, find the rate of interest per annum.
- (a) 6% (b) 2% (c) 4% (d) 8%
60. If 10% profit is achieved by selling an article at Rs. 1001, then the cost price of the article is
- (a) Rs. 910 (b) Rs. 911 (c) Rs. 901 (d) none of these

61. The largest number of four digits exactly divisible by 88 is
(a) 9944 (b) 8888 (c) 9988 (d) 9768
62. The unit digit of the number $106 \times 106 + 94 \times 94$ is
(a) 6 (b) 4 (c) 2 (d) 0
63. What number nearest to 457 is divisible by 11?
(a) 451 (b) 460 (c) 462 (d) 450
64. On dividing a certain number by 357 the remainder is 39; what will be the remainder if the same number is divided by 17.
(a) 3 (b) 5 (c) 10 (d) 11
65. If $517 * 324$ is divisible by 3, then what smallest digit is there in place of *.
(a) 0 (b) 1 (c) 2 (d) none of these
66. What number must be added to the numerator and denominator of $\frac{3}{4}$ to give $\frac{11}{12}$?
(a) 5 (b) 6 (c) 7 (d) 8
67. The product of two positive numbers is 2500, if one is four times the other then the sum of the numbers is
(a) 125 (b) 250 (c) 225 (d) 100
68. If the sum of three consecutive positive integers is more than the middle integer by 130, then the middle integer is
(a) 64 (b) 65 (c) 66 (d) 60
69. The product of two successive integers is 1980, the smaller one is
(a) 33 (b) 45 (c) 42 (d) 44

70. In an examination there are 90 questions, 5 marks is allotted for every correct answer and 2 marks are deducted for every wrong answer. After attempting all the questions Rumu get a total of 387 marks. The number of questions attempted wrong were

- (a) 18 (b) 36 (c) 9 (d) 27

71.
$$\frac{1\frac{1}{2}}{1+\frac{1}{1+\frac{1}{4}}} =$$

- (a) $\frac{1}{6}$ (b) $1\frac{1}{5}$ (c) 1 (d) $\frac{5}{6}$

72. The unit digit in $584 \times 428 \times 667 \times 213$ is

- (a) 2 (b) 3 (c) 4 (d) 8

73. $888888 \div 888 \div 88 =$

- (a) 11.3 (b) 56 (c) 11.375 (d) none of these

74. The first prime number is

- (a) 1 (b) 2 (c) 3 (d) 0

75. Which of the following set of numbers is in descending order?

- (a) $\frac{4}{5}, \frac{3}{4}, \frac{2}{3}, \frac{1}{2}$ (b) $\frac{3}{4}, \frac{2}{3}, \frac{1}{2}, \frac{4}{5}$

- (c) $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}$ (d) $\frac{4}{5}, \frac{2}{3}, \frac{3}{4}, \frac{1}{2}$

76.
$$\frac{7+7+\frac{7}{7}}{(7+7+7)\div 7} =$$

- (a) $15\frac{1}{3}$ (b) $\frac{15}{7}$ (c) 5 (d) 3

77. When the capacity of a bucket is 13.5 litres, 12 buckets of water will fill a tank. how many buckets will be needed to fill the same tank if the capacity of each bucket is 9 litres.
- (a) 8 (b) 15 (c) 16 (d) 18
78. The sum of $\frac{2}{3}$ and its reciprocal is—
- (a) $\frac{6}{13}$ (b) $2\frac{1}{6}$ (c) $\frac{5}{6}$ (d) $1\frac{5}{6}$
79. A man has in all Rs. 640 in the denominations of one-rupee, five rupee and ten rupee coins. The number of each type of coins are equal. Find the total number of coins he has.
- (a) 140 (b) 40 (c) 150 (d) 120
80. The average of five numbers is 18; if one number is excluded there mean is 16. The excluded number is—
- (a) 25 (b) 26 (c) 17 (d) 27
-