**CENTRE FOR PEDAGOGICAL STUDIES IN MATHEMATICS (CPSM)**
ACHIEVEMENT-CUM-DIAGNOSTIC TEST IN MATHEMATICS-2024

> **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 squares in the adjoining fig is

    (a) 7   (b) 6

    (c) 5   (d) 4
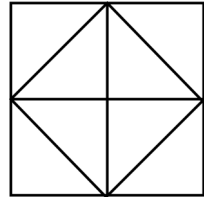
2. The number of edges of a prism whose base is a regular polygon having 18 sides is

    (a) 37   (b) 72   (c) 36   (d) 54

3. Which one of the following statements is true?

    (a) Three straight lines always can form a triangle

    (b) Three points in space always form a triangle

    (c) Three coplaner straight lines can form a triangle

    (d) Three collinear points can form a triangle

4. How many of the capital letters E, F, H, L, M, T, V have parallel straight lines?

    (a) 5   (b) 2   (c) 3   (d) 4

5. Number of rectangle in the adjoining figure is



(a) 11   (b) 12

(c) 13   (d) 14
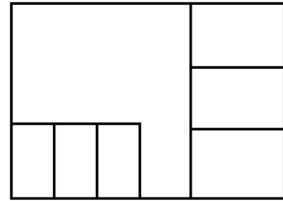
6. The number of curved surfaces of a hollow sphere is

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

7. The maximum number of right angles a quadrilateral can have is

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

8. The number of surfaces of a hexagonal prism is

(a) 6   (b) 12   (c) 18   (d) 8

9. The solid whose all the faces are triangles is

(a) tetrahedron   (b) triangular prism

(c) cube   (d) square pyramid

10. The number of diagonals of a rectangular parallelopiped is

(a) 12   (b) 4   (c) 6   (d) 8

11. The number of plane surfaces of a hollow thick cylinder is

(a) 0   (b) 1   (c) 2   (d) 4

12. Each surface of a cuboid is a

(a) square   (b) rectangle

(c) rhombus   (d) none of these

13. The number of straight lines in the adjoining figure is

    (a) 3   (b) 9

    (c) 8   (d) 6
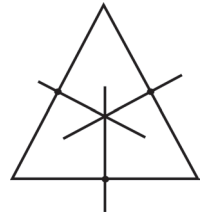
14. The number of surfaces of a pyramid whose base is a regular pentagon is
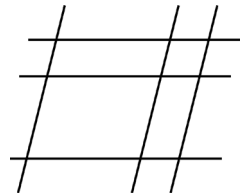
    (a) 5   (b) 10   (c) 6   (d) 7

15. Observe the capital letters H, T, F and E. Find in which of these letters the number of right angles is minimum.

    (a) H   (b) T   (c) F   (d) E

16. The number of parallelograms in the adjoining figure is

    (a) 8   (b) 9

    (c) 10   (d) 11

17. The sum of the interior angles of a pentagon is

    (a) 540°   (b) 360°   (c) 450°   (d) 720°

18. In the adjoining figure, $CD \perp AB$, and $CF \perp CE$, then the number of obtuse angles is

    (a) 1   (b) 2

    (c) 3   (d) 4
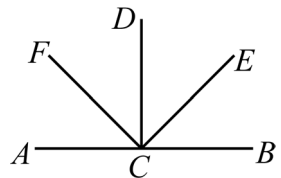
19. The solid having minimum number of plane surfaces is

    (a) cube   (b) sphere

    (c) triangular prism   (d) tetrahedron

20. The angle between the diagonals of a kite is

    (a) 60°   (b) 30°   (c) 90°   (d) none of these

21. $\{(66066 + 6606) - (66 + 6)\} \div 6 =$

    (a) 12100   (b) 121   (c) 1210   (d) 12012

22. A number when divided by 32 leaves a remainder 31, this number when vidided by 16 the remainder is

    (a) 9   (b) 5   (c) 6   (d) 15

23. The value of $\dfrac{1}{3+\dfrac{2}{2+\dfrac{1}{2}}}$ is

    (a) $\frac{5}{19}$ (b) $\frac{19}{5}$ (c) $\frac{5}{4}$ (d) $\frac{4}{5}$

24. The value of $\dfrac{\dfrac{1}{5} \div \dfrac{1}{5} \text{ of } \dfrac{1}{5}}{\dfrac{1}{5} \text{ of } \dfrac{1}{5} \div \dfrac{1}{5}} =$

    (a) 5   (b) 1   (c) 25   (d) $\frac{1}{5}$

25. The sum of the place values of the two 8's in the number 183282 is

    (a) 16   (b) 80080   (c) 8080   (d) 8008

26. The unit digit of $5 \times 25 \times 125 \times 625$ is

    (a) 0   (b) 4   (c) 6   (d) 5

27. The value of $(777777 \div 11 \div 7) \div 3$ is

    (a) 10101   (b) 111   (c) 3367   (d) 33067

28. If 12 men can do a piece of work in 7 days, how long will 21 men take to do the same piece of work?

    (a) 8 days   (b) 6 days   (c) 3 days   (d) 4 days

29. A train running 18 minutes late arrived at station at 10 : 40 a.m. At what time would it have arrived if it were running 8 minutes early?

    (a) 10 : 58 am (b) 10 : 22 am (c) 10 : 14 am (d) 10 : 30 am

30. The perimeter of a rectangle 78 meters. If the length is 21 metres, what is the breadth of the rectangle.

    (a) 18 m   (b) 36 m   (c) 9 m   (d) 12 m

31. $\dfrac{\left(\dfrac{1}{4}+\dfrac{1}{4}\right)\times 1\dfrac{1}{4}}{\dfrac{1}{4}\times\dfrac{1}{4}+2\dfrac{1}{4}}=$

    (a) 1   (b) $\dfrac{10}{37}$ (c) $\dfrac{5}{37}$ (d) $\dfrac{16}{25}$

32. 24 exercise books each 6 cm thick are placed one on the top of the other. What is the height of the pile?

    (a) 1 m 44 cm (b) 14.4 m   (c) 14.4 cm   (d) 14.4 dcm

33. $[18 - \{9 + (5 + \overline{8 - 6})\}] - 2 =$

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

34. The unit digit of the number $8126 \times 6 \times 4 \times 2$ is

    (a) 6   (b) 8   (c) 4   (d) 2

35. Sudip gave four five hundred rupee notes in payment for 4 chairs and received back Rs. 272. What did each chair cost?

    (a) Rs. 480   (b) Rs. 432   (c) Rs. 436   (d) Rs. 420

36. Two towns are 5 km apart. An inn on the road between them is 2 $\frac{3}{10}$ km from one town. How far is the inn from the second town?

(a) 2.7 km   (b) 2.5 km   (c) 3 km   (d) 2.3 km

37. Ramu takes 20 minutes to walk to school when he walks at the rate of 8 km an hour. How long will he take if he walks at 5 km an hour?

(a) 36 mins   (b) 25 mins   (c) 30 mins   (d) 32 mins

38. How many hours and minutes are there between 8 : 40 a.m. and and 3 : 15 p.m.

(a) 6 hrs 35 mins   (b) 6 hrs 30 min

(c) 5 hrs 35 mins   (d) 6 hrs 25 mins

39. On a road five water taps are placed 3 km 7 decameter apart. How far is the first water tap from the fifth?

(a) 14 km 8 decameter   (b) 7 km 4 decameter

(c) 18.5 km   (d) 14 km

40. The average age of 5 men is 46 years and the average age of 4 of them is 43 years. The age of the fifth man is

(a) 46 yrs   (b) 52 yrs   (c) 49 yrs   (d) 48 yrs

41. The L.C.M. of 27 m, 63 m and 81 m is

(a) 1323   (b) 2646 m   (c) 567 m   (d) 27 m

42. The H.C.F. of four prime numbers is

(a) 1   (b) the least of these numbers

(c) 2   (d) 3

43. The L.C.M. and H.C.F. of two numbers are 2310 and 30 respectively. If one of these two numbers be 210, the second number is

(a) 33   (b) 110   (c) 330   (d) 990

44. The H.C.F. of two numbers is 8, which of the following numbers can not be the L.C.M. of those numbers.

(a) 24   (b) 60   (c) 48   (d) 56

45. The H.C.F. and L.C.M. of two numbers are 21 and 4641 respectively. If one number lies between 200 and 300 then the numbers are

(a) 273, 363   (b) 273, 359   (c) 273, 361   (d) 273, 357

46. 30% of a number is 180. The number is

(a) 300   (b) 600   (c) 1800   (d) 1200

47. 43% of 2750 − 38% of 2990 =

(a) 463   (b) 4630   (c) 4.63   (d) 46.3

48. 40% of a number is 240. The number is

(a) 600   (b) 6000   (c) 960   (d) 6400

49. Express $\frac{3}{4}$ as rate per cent.

(a) 25%   (b) 75%   (c) 30%   (d) 90%

50. 40 + 40% of 40 =

(a) 80   (b) 50   (c) 90   (d) 56

51. The greatest among $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}$ and $\frac{4}{5}$ is

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

52. The least among $\frac{16}{25}, \frac{2}{3}, \frac{5}{8}$ and $\frac{7}{12}$ is

(a) $\frac{16}{25}$ (b) $\frac{2}{3}$ (c) $\frac{7}{12}$ (d) $\frac{5}{8}$

53. $1 + \frac{1}{10} + \frac{1}{100} + \frac{1}{1000} =$

(a) $\frac{1111}{1000}$ (b) $\frac{1001}{1000}$

(c) $\frac{1011}{1000}$ (d) none of these

54. $\frac{1}{3} + \frac{1}{4} + \frac{1}{5} =$

(a) 1   (b) $\frac{12}{60}$ (c) $\frac{45}{60}$ (d) $\frac{47}{60}$

55. The least among $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}$ is

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

56. I gave $\frac{3}{16}$ of my money to A, $\frac{1}{4}$ to B and remaining 36 rupees to C. How much had I?

(a) Rs. 640   (b) Rs. 80   (c) Rs. 64   (d) Rs. 128

57. Find the principal when the simple interest for 4 years at 5% per annum is Rs. 250?

(a) Rs. 1400   (b) Rs. 1500   (c) Rs. 1200   (d) Rs. 1250

58. What percent of $\frac{2}{7}$ is $\frac{1}{35}$?

(a) 10%   (b) 5%   (c) 7%   (d) 20%

59. A number is 30 more than its $\frac{2}{5}$th. The number is

(a) 50   (b) 45   (c) 60   (d) 30

60. The product of two consecutive even numbers is 528, the greater of those two numbers is

(a) 22   (b) 24   (c) 26   (d) none of these

61. Four points are taken at random on a plane. The minimum number of triangles that can be drawn with those points as vertices is

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

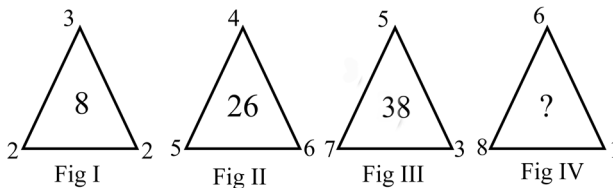62. The smallest 6 digit natural number ending in 5 is

(a) 102345   (b) 123465

(c) 100005   (d) 100000

63. How many different 3-digit numbers can be formed by using the digits 0, 2 and 5 without repeating any digit?

(a) 4   (b) 3   (c) 2   (d) 5

64.

Fig I   Fig II   Fig III   Fig IV

Study the four triangles in the above figure. What is the missing number inside the fourth triangle.

(a) 14   (b) 94   (c) 50   (d) 49

65. In a five digit number 7351* the digit in the unit's place is missing. What is/are the possible value/values of the missing digit so that the number is divisible by 4.

(a) 4   (b) 2 or 6   (c) only 6   (d) 0, 2, 6

66. The reciprocal of $1\frac{1}{2}$ is

(a) $1\frac{2}{3}$ (b) 2   (c) $\frac{3}{2}$ (d) $\frac{2}{3}$

67. Divide the 105th multiple of 29 by 15. The quotient is

(a) 203   (b) 174

(c) 303   (d) 196

68. The difference between the greatest and smallest number using the digits 3, 4 and 5 only once is

(a) 891   (b) 111

(c) 198   (d) 189

69. Which one of the following numbers is exactly divisible by 45?

(a) 181560   (b) 202860

(c) 331145   (d) 2023550

70. The seventh term of the series

10, 11, 13, 16, 20, 25, …, … is

(a) 31   (b) 32

(c) 30   (d) 33

71. The unit digit of 999 × 999 + 8 is

(a) 1   (b) 8   (c) 7   (d) 9

72. How many degrees are there in a straight angle?

(a) 90°   (b) 180°

(c) 270°   (d) 360°

73. Write the number XLIV in Hindu-Arabic numerals

    (a) 64   (b) 54

    (c) 44   (d) none of these

74. Which month is the first month of the year with 30 days.

    (a) March   (b) April

    (c) June   (d) May

75. How many natural numbers are there between 5 and 35, both inclusive?

    (a) 30   (b) 31

    (c) 32   (d) 33

76. The difference between the greatest five digit number and the smallest four-digit number is

    (a) 98888   (b) 98000

    (c) 98999   (d) 88888

77. A cyclist covers 600 metres in 2 minutes, find his speed in metre per second.

    (a) 5 m/sec

    (b) 10 m/sec

    (c) 300 m/sec

    (d) 30 m/sec

78. If a girl reads 12 pages of a book everyday she can finish the whole book in 8 days. How many days will she need to finish the book if she reads 16 pages a day.

(a) 8 days   (b) 6 days

(c) 12 days   (d) 9 days

79. Khushi obtained 29, 38, 41, 42 and 45 in five class tests out of 50 in Mathematics. Find her average marks.

(a) 42   (b) 41

(c) 40   (d) 39

80. Find three consecuitve odd numbers whose sum is 15.

(a) 1, 5, 7   (b) 5, 7, 9

(c) 3, 5, 7   (d) 1, 5, 9

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