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. Which shape can be the face of a cuboid?

    (a) rectangle   (b) trapezium   (c) triangle   (d) rhombus

2. Select the odd one out.

    (a)   (b)

    (c)   (d)
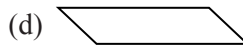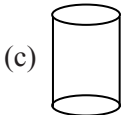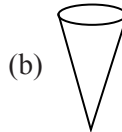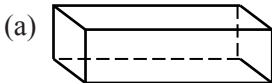
3. The number of triangles in the adjoining figure.
    (a) 12   (b) 13

    (c) 15   (d) 16
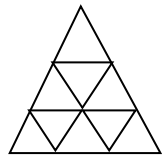
4. A basketball court is a rectangle 20m long and 10 m wide. Its perimeter is

    (a) 30 m   (b) 60 m   (c) 90 m   (d) 200 m

5. Number of right angles in the adjoining figure.

    (a) 12   (b) 14   (c) 8   (d) 10
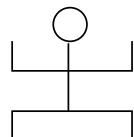
6. The number of surfaces of a hollow thick right-circular cylinder is

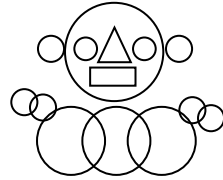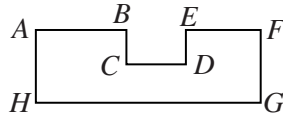   (a) 2   (b) 3   (c) 4   (d) none of these

7. The length of a rectangle is 10 m longer than its breadth. If the bredth is 8 cm, the perimeter of its rectangle is—

   (a) 26 cm   (b) 80 cm   (c) 36 cm   (d) 52 cm

8. The number of circles.

   (a) 11   (b) 12

   (c) 13   (d) 10

9. In the adjoining figure AB = 5 cm, CD = 3 cm, and GH = 12 cm, Find EF.

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

10. The solid whose side faces are rectangles is

    (a) right prism   (b) right pyramid

    (c) cylinder   (d) right circular cone

11.
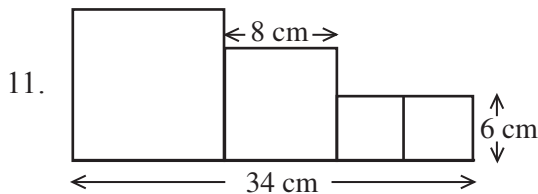
The above figure is made of four squares. Find the length of each side of the largest square.

   (a) 14 cm   (b) 12 cm

   (c) 10 cm   (d) 18 cm

12. The number 1 to 6 are placed in the circles so that the sum of the numbers on each side become 10. If 1 is placed in the circle shown, which number is in the shaded circle

   (a) 3   (b) 4

   (c) 6   (d) 2

13. The first odd composits number is
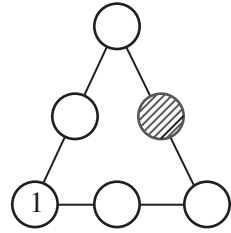
   (a) 15   (b) 13   (c) 9   (d) 17

14. $\left(5\frac{1}{3}\times5\frac{1}{4}\right)-\left(1\frac{1}{6}\times1\frac{1}{2}\right)=$

   (a) 26   (b) $26\frac{1}{4}$ (c) $26\frac{3}{4}$ (d) $27\frac{1}{4}$

15. The number 1234 * is divisible by 18, then the * should be replaced by
   (a) 0   (b) 4   (c) 7   (d) 8

16. A pair of prime numbers are such that the sum of each pair is also prime. Find the incorrect pair.

   (a) 2, 3   (b) 5, 2   (c) 11, 13   (d) 2, 11

17. The greatest value must be given to P so that the number $7713P8$ is divisible by 4 is

   (a) 4   (b) 6   (c) 0   (d) 8

18. If in a number, the difference between the sum of the digits at its odd places and that of the digits in the even places is given to be zero, then the number is divisible by

   (a) 7   (b) 11   (c) 22   (d) 13

19. Hemantika is thinking a number, if 7 is taken away from the number the result is twice the number diminished by 15.

    (a) 22   (b) 12   (c) 16   (d) 8

20. There are many ways that you can add three different numbers to get a total of 12, if you multiply these three numbers we get a number called the product. Of all the ways to do this what is the largest product.

    (a) 72   (b) 48   (c) 60   (d) 84

21. Which of the following is the greatest one digit number that has four factors.

    (a) 6   (b) 8   (c) 9   (d) 4

22. Dodo watched a favourite programme from 12 : 30 pm to 2 : 25 pm. How long did the programme last?

    (a) 105 mins   (b) 45 mins   (c) 115 mins   (d) 95 mins

23. If the pattern continues, what is the next number
    5, 8, 7, 10, 9, 12, 11, …, …

    (a) 10   (b) 12   (c) 8   (d) 14

24. Express $\frac{5}{12}$ of a day in hours.

    (a) 5 hrs   (b) 10 hrs   (c) 12 hrs   (d) 20 hrs

25. There are 18 points in a line. The distance between two consecutive points is 18 cm. How long is the line.

    (a) 306 cm   (b) 324 cm   (c) 342 cm   (d) 289 cm

26. If $\theta + \theta + \theta = 48$; $\theta + \theta + \triangle = 40$ nd $\triangle + \square + \square = 16$. Then the number represented by $\square$ is

    (a) 8   (b) 6   (c) 4   (d)none of these

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27. The average marks scored by Rai in her half-yearly examination in three subjects Physics, Chemistry and Mathematics was 89. If she scored 80 in Physics and 94 in Chemistry, what was her score in Mathematics?

(a) 98   (b) 91   (c) 94   (d) 93

28. The perimeters of a rectangle and a square are equal, if the length and breadth of the rectangle be 8 m and 6 m respectively. Then the length of each side of the square is

(a) $3\frac{1}{2}$ m   (b) 9 m   (c) 14 m   (d) 7 m

29. How many times 40 be added to itself to get 2,00,000?

(a) 4000   (b) 5000   (c) 8000   (d) 50000

30. Find two positive integers such that their product is 1,00,000 and none of them contains zero as a digit.

(a) 32 and 3125   (b) 64 and 625

(c) 16 and 6255   (d) 128 and 78125

31. The number of two digit Odd numbers the sum of whose digits is 8 is

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

32. 28, 56, 91, 49 are all multiples of

(a) 6   (b) 7   (c) 3   (d) none of these

33. How many two digit numbers can be formed using the digits 2, 7 and 8, reptition of the digits is allowed.

(a) 9   (b) 6   (c) 7   (d) 10

34. If $A \times A = P$ and $A + A + A + A = P$, then what number does P represent?

(a) 16   (b) 8   (c) 4   (d) 32

35. $(6 + 7 - 4) - (17 - 14) + (8 - 21 + 13) - (4 \times 2 - 6) =$

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

36. By what number 769 should be multiplied to give the product 594437.

   (a) 793   (b) 783   (c) 763   (d) 773

37. Weight of one bag of rice is 40.750 kg, what is the weight of 19 such bags.

   (a) 774 kg   (b) 774.25 kg   (c) 784.25 kg   (d) 775.25 kg

38. The sum of the greatest and smallest four digit numbers using four different digits with the conditin that 5 occurs in ten's places is

   (a) 9909   (b) 10909   (c) 9999   (d) 10999

39. A bread was divided into seven equal parts. Buni ate $\frac{1}{7}$ of the bread, Dali ate $\frac{2}{7}$ of the bread and Bandana ate $\frac{3}{7}$ of the bread . How much of the bread was left?

   (a) $\frac{4}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$ (d) $\frac{1}{7}$

40. Purba had 60 marbles. She gave one-third of it to her brother and one-fifth of the remainder to her sister. Now the number of marbles Purba has is

   (a) 48   (b) 32   (c) 16   (d) 24

41. An employee earns Rs. 72,000 in three months. How much does he earn in seven months.

   (a) Rs. 188000   (b) Rs. 24000

   (c) Rs. 18800   (d) none of these

42. $\left(2\dfrac{3}{5}-1\dfrac{7}{10}\right)-\left(1-\dfrac{1}{10}\right)=$

   (a) 2   (b) $\dfrac{3}{10}$ (c) $\dfrac{1}{10}$ (d) 0

43. Express 24 as the sum of two twin primes.

   (a) 19 + 5   (b) 11 + 13   (c) 7 + 17   (d) 1 + 23

44. 44 can be expressed as the sum of two odd primes.

   (a) in one way only   (b) in two ways

   (c) in three ways   (d) in four ways

45. 237 − 328 + 205 − 76 + 84 =

   (a) 22   (b) 122   (c) 222   (d) 132

46. Calculate : 1 − 2 + 3 − 4 + 5 − 6 + 7 − 8 + 9 − 10 + 11

   (a) 5   (b) 6   (c) 7   (d) 4

47. The product of the successor and the predecessor of the smallest number of three digits.

   (a) 9999   (b) 99999   (c) 9900   (d)none of these

48. How many 3-digit whole numbers are there between 72 and 407.

   (a) 335   (b) 306   (c) 308   (d) 307

49. What greatest number is to be subtracted from 75706 to make the remainder divisible by 273.

   (a) 75979   (b) 75706   (c) 75433   (d)none of these

50. Grandpa had Rs. 400 in his pocket. He gave half of the money to his wife. From what was left he then gave one-fourth to his son. Half of the remainder went to his grandson. How much money did his grandson receive?

   (a) Rs. 237.50   (b) Rs. 50   (c) Rs. 125   (d) Rs. 75

51. The product of two numbers is 55432 and half of one of the numbers is 41. The other number is

    (a) 676   (b) 1352   (c) 82   (d) 329

52. If $12K3 = (12 + 3)(12 - 3)$ then $(2K1)K2 =$

    (a) 10   (b) 15   (c) 5   (d) 8

53. The unit digit of $6 \times 36 \times 46 \times 66 \times 76$ is

    (a) 0   (b) 6   (c) 2   (d) 4

54. The product of three numbers is 65231, if two of them are 43 and 41 then the third number is

    (a) 39   (b) 35   (c) 37   (d) 47

55. The sixth term of the series 41, 49, 57, 65, …, … is

    (a) 81   (b) 79   (c) 72   (d) 78

56. Rs. 910 was divided among Pratyush, Purba and Prachi such that Purba gets twice that of Prachi and Pratyush gets twice that of Purba. What is Pratyush's share.

    (a) Rs. 52   (b) Rs. 130   (c) Rs. 390   (d) Rs. 520

57. What is the measure of an angle of a square?

    (a) 60°   (b) 90°   (c) 120°   (d) 100°

58. Soma walks 150 metres in 10 minutes, find her speed in km/hr.

    (a) 9 km/hr   (b) $\frac{9}{10}$ km/hr   (c) $\frac{3}{10}$ km/hr   (d) 6 km/hr

59. In a division sum the divisor is 16, the quotient is 208 and the remainder is 5; find the dividend.

    (a) 3303   (b) 3330   (c) 13333   (d) 3333

60. If 36 men can do a work in 36 days. In how many days the same work is done by 6 men.

    (a) 216 days   (b) 72 days   (c) 432 days   (d) 108 days