
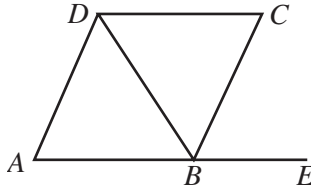


VI(EM) ADTM

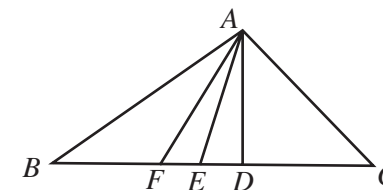
CENTRE FOR PEDAGOGICAL STUDIES IN MATHEMATICS (CPSM)
ACHIEVEMENT-CUM-DIAGNOSTIC TEST IN MATHEMATICS-2022

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 blaken the specific rectangle ■ with H.B. pencil 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.

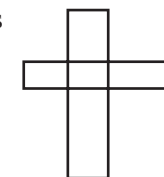
- The number of line segments in the adjoining figure is
 (a) 4 (b) 8
 (c) 10 (d) 9
 
- A solid having one curved surface and one plane surface is
 (a) sphere (b) cone (c) cylinder (d) tetrahedron
- Number of curved surfaces of a piece of hollow thick pipe.
 (a) 1 (b) 2 (c) 3 (d) 4
- The number of edges of a pyramid is 10, find the number of surfaces of that pyramid.
 (a) 5 (b) 9 (c) 10 (d) 6
- In the adjoining figure $ABCD$ is a rhombus and $\angle CBE = 70^\circ$, find $\angle ADB$.
 (a) 60° (b) 55°
 (c) 45° (d) 70°


Class-VI-(1)

- In the adjoining figure ABC is a triangle and $AD \perp BC$. The number of right angled triangle is

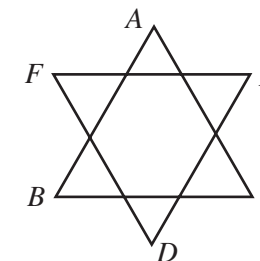


- (a) 4 (b) 3
 (c) 2 (d) 5
- The number of rectangles in the adjoining figure is



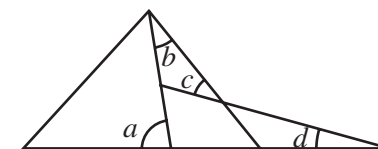
- (a) 12 (b) 11
 (c) 10 (d) 14
- Take four non-collinear points on a piece of paper. How many line segments can be drawn joining these points in pairs.
 (a) 8 (b) 3 (c) 4 (d) 6

- In the adjoining figure
 $\angle A + \angle B + \angle C + \angle D + \angle E + \angle F =$
 (a) 180° (b) 270°
 (c) 360° (d) 540°



- Based on the angle measures given, which triangle is not acute?
 (a) $35^\circ, 69^\circ, 76^\circ$ (b) $60^\circ, 60^\circ, 60^\circ$
 (c) $88^\circ, 46^\circ, 46^\circ$ (d) $90^\circ, 45^\circ, 45^\circ$

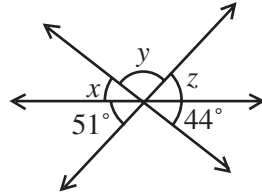
- In the adjoining figure, $a =$
 (a) $b - c - d$
 (b) $b + c - d$
 (c) $b + d - c$
 (d) $b + c + d$



Class-VI-(2)

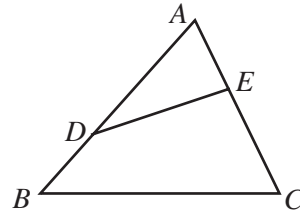
12. In the adjoining figure find y .

- (a) 85° (b) 95°
 (c) 51° (d) 88°



13. In the adjoining figure ABC is a triangle, D is a point on AB and $DE \perp AC$, if $\angle ABC = 54^\circ$ and $\angle ACB = 73^\circ$, find $\angle ADE$.

- (a) 36° (b) 27°
 (c) 53° (d) 37°



14. The angles of a triangle are in the ratio $2 : 3 : 4$, find the largest angle.

- (a) 90° (b) 120°
 (c) 80° (d) 100°

15. The ratio between the vertical angle and one base angle of an isosceles triangle is $4 : 3$. Find the vertical angle.

- (a) 90° (b) 72°
 (c) 54° (d) 80°

16. Draw two parallel lines l and m . Take three points P, Q, R on l and two points A, B on m . How many line segments joining these points such that one end of the line segment is on l and the other on m . Number of such line segments is

- (a) 3 (b) 2
 (c) 5 (d) 6

17. A solid having 4 faces, 4 vertices and 6 edges is called a

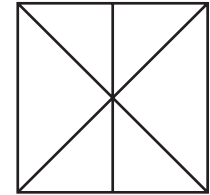
- (a) Triangular prism (b) Triangular pyramid
 (c) Rectangular prism (d) Square pyramid

18. A prism whose base is a pentagon has

- (a) 5 vertices and 5 faces
 (b) 10 vertices and 10 faces
 (c) 5 vertices and 7 faces
 (d) 10 vertices and 7 faces

19. Number of triangles in the adjoining figure is

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



20. There are five points in a plane, no three of which are collinear. How many straight lines can be drawn through these five points.

- (a) 20 (b) 15 (c) 10 (d) 6

21. The numerical co-efficient of $-\frac{8x}{5y}$ is

- (a) $-\frac{8}{5}$ (b) $\frac{8}{5}$ (c) -8 (d) $-\frac{8}{5y}$

22. What must be subtracted from $a^2 + b + 1$ to obtain $a^2 - b$?

- (a) $-2b - 1$ (b) $-2b + 1$
 (c) $2b + 1$ (d) $2b - 1$

23. The product of $2xy$, $-3x$ and $-7yz$ is

- (a) $-42xyz$ (b) $42xyz$
 (c) $42x^2y^2z^2$ (d) $42x^2y^2z$

24. The three sides of a triangle are $(2x + y)$ cm, $(3x - y)$ cm and $(x + y + z)$ cm. Find the perimeter.

- (a) $(6x + y + z)$ cm (b) $(6x + 3y + z)$ cm
 (c) $(5x + 2y + z)$ cm (d) $(6x - y + z)$ cm

25. The length of a rectangle is $(2p - q + r)$ m. and its perimeter is $(6p + 2r)$ m. The breadth of the rectangle is
- (a) $(p + q + r)$ m (b) $(p - q)$ m
(c) $(p + q)$ m (d) $(p + r)$ m
26. If $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$ then express v in terms of u and f .
- (a) $v = \frac{uf}{u-f}$ (b) $v = \frac{uf}{u+f}$ (c) $v = \frac{u}{u+f}$ (d) $v = \frac{2u}{u+f}$
27. If $T = 2\pi\sqrt{\frac{L}{g}}$, find L when $T = 44$, $\pi = \frac{22}{7}$ and $g = 10$
- (a) 4900 (b) 49 (c) 490 (d) 70
28. The sum of the ages of 25 boys of your class is x years. The sum of the ages of those boys after y years will be
- (a) $(x + y)$ yrs (b) $(x + 25y)$ yrs
(c) $25(x + y)$ yrs (d) $(25x + y)$ yrs
29. Subtract $(9x + 6y + 3z)$ from the sum of $(13x + 2y + 6)$ and $(12y - 4z + 9)$.
- (a) $4x + 8y - 7z$ (b) $4x - 8y + 7z - 15$
(c) $4x + 8y - z - 15$ (d) $4x + 8y - 7z + 15$
30. The sum of two numbers is x and their difference is y , the larger number is
- (a) $x + y$ (b) $\frac{x+y}{2}$ (c) $\frac{x-y}{2}$ (d) $x + \frac{y}{2}$
31. If $p = 1$, $q = -1$ and $r = 2$ then
- $p^2 + q^2 + r^2 + 2pq + 2qr + 2rp =$
- (a) 0 (b) 1
(c) 2 (d) 4
32. If $A = 7x^2 + 4x + 6$, $B = -9x^2 + 4x - 7$ and $C = -2x^2 - 2x - 5$ then $A + B + C =$
- (a) $4x^2 + 6x + 6$ (b) $-4x^2 + 6x + 6$
(c) $-4x^2 + 6x - 6$ (d) $-4x^2 - 6x - 6$
33. What must be added to $m - n - p$ to give $m + p$?
- (a) $p + 2n$ (b) $2p + n$ (c) $2p - n$ (d) $p + n$
34. $y - \left[y - \left\{ y - (y - y + x) \right\} \right] =$
- (a) x (b) y (c) $x + y$ (d) $y - x$
35. By which number should x be multiplied so that the product is $4y$?
- (a) $\frac{y}{x}$ (b) $\frac{4y}{x}$
(c) $\frac{y}{4x}$ (d) $4y + x$
36. If $a = 1$, $b = 2$ and $c = 3$ then
- $a(a + b - c) + b(b + c - a) + c(c + a - b) =$
- (a) 36 (b) 25 (c) 6 (d) 14
37. $x + 1 - [1 - \{1 - (1 + x)\}] =$
- (a) 1 (b) x (c) $-x$ (d) 0
38. How much higher is the temperature 5° than $-x^\circ$?
- (a) $(5 - x)^\circ$ (b) $(x + 5)^\circ$
(c) $(x - 5)^\circ$ (d) $5x^\circ$
39. The sides of quadrilateral are $(5p - 3q)$ cm, $(3p + 2q - r)$ cm, $(p + 3q)$ cm and $2(q - p)$ cm. The perimeter of the quadrilateral is
- (a) $7p + 4q + r$ cm (b) $7p + 4q - r$ cm
(c) $7p - 4q - r$ cm (d) $7p + 4q$ cm

40. If the perimeter of a rectangle be $4x + 7y - z$ and the length be $3y - 2x + 2z$ then its breadth is
- (a) $4x + y - 5z$ (b) $4x + \frac{1}{2}y - \frac{5}{2}z$
(c) $2x + \frac{1}{2}y - \frac{5}{2}z$ (d) None of these
41. $2 + 4 + 6 + 8 + 10 + 12 + 14 + 16 + 18 =$
(a) 100 (b) 110 (c) 90 (d) 92
42. The product of two decimal numbers is 17.55 and one of them is 2.7, find the other.
(a) 6.5 (b) 1.3 (c) 2.6 (d) 0.65
43. The product of two numbers is 336. Their sum exceeds their difference by 32. The larger number is
(a) 16 (b) 32 (c) 21 (d) 42
44. The H.C.F. of three numbers is 24. If the ratio of the numbers be $35 : 55 : 77$ then the largest among those three numbers is
(a) 2160 (b) 4008 (c) 2004 (d) 1848
45. The L.C.M. of 54, 90 and a third number is 1890 and their H.C.F. is 18. The third number is
(a) 180 (b) 126 (c) 144 (d) 108
46. If the highest common factor of two positive integers is 24, then their least common multiple can not be
(a) 600 (b) 216 (c) 288 (d) 372
47. If 24 clerks can clear 180 files in 15 days then the number of clerks required to clear 240 files in 12 days is
(a) 38 (b) 40 (c) 42 (d) 44
48. A pole has 0.5 part of its length in mud, 0.25 part of its length in water and 2 m above water. The total length of the pole is
(a) 8 m (b) 5 m (c) 12 m (d) 16 m

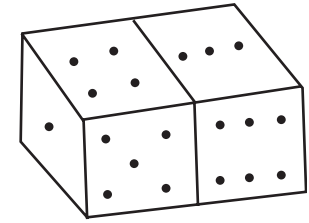
Class-VI-(7)

49. $\frac{3\frac{4}{5} \times 1\frac{2}{3} \text{ of } \frac{1}{19}}{\frac{2}{9} \text{ of } 3 - \frac{1}{17} \times 5\frac{2}{3}} - 1\frac{1}{3} \text{ of } \frac{9}{16} =$
(a) 4 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{1}{4}$
50. There are four prime numbers written in ascending order. The product of the first three is 385 and that of the last three is 1001. The last number is
(a) 11 (b) 13 (c) 17 (d) 7
51. The square root of $964\frac{49}{64}$ is
(a) $\pm 3\frac{7}{8}$ (b) $\pm 4\frac{1}{8}$ (c) $\pm 3\frac{1}{8}$ (d) $\pm 4\frac{3}{8}$
52. A man plants 5184 trees in his garden and arranges them so that there are as many rows as there are trees in a row. The number of row is
(a) 82 (b) 75 (c) 78 (d) 72
53. $\sqrt{41 - \sqrt{21 + \sqrt{19 - \sqrt{9}}}}$
(a) 5 (b) 6
(c) 3 (d) None of these
54. The product of two positive integers is 936 and the ratio of those two integers is $13 : 18$. The greater integer is
(a) 36 (b) 26 (c) 72 (d) 62
55. If $a : b = 7 : 9$ and $b : c = \frac{3}{5}$ then $a : b : c =$
(a) $7 : 9 : 5$ (b) $7 : 3 : 5$
(c) $7 : 3 : 15$ (d) $7 : 9 : 15$

Class-VI-(8)

56. If $33\frac{1}{3}\%$ of $A = 1.5$ of $B = \frac{1}{8}$ of C then $A : B : C =$
 (a) $2 : 9 : 24$ (b) $3 : 2 : 8$
 (c) $9 : 2 : 24$ (d) $9 : 2 : 12$
57. In an examination there were 640 boys and 360 girls. If 60% of the boys and 80% of the girls were successful, the percentage of failures was
 (a) 30.8% (b) 32.8%
 (c) 30% (d) 36%
58. The length and breadth of a rectangle are 12 m and 5 m. The perimeter of a square is equal to the perimeter of the rectangle. The area to the square is
 (a) 60 m^2 (b) 289 m^2 (c) 72 m^2 (d) $72\frac{1}{4} \text{ m}^2$
59. Sailo bought a piece of cloth for Rs. 950 and spent Rs. 300 on designing it. At what price should she sell it to make 30% profit.
 (a) Rs. 1625 (b) Rs. 1235
 (c) Rs. 1535 (d) Rs. 1325
60. The perimeters of five squares are 24 cm, 32 cm, 40 cm, 76 cm and 80 cm respectively. Find the perimeter of another square whose area is equal to the sum of the areas of those five squares.
 (a) 131 cm (b) 961 cm
 (c) 124 cm (d) 248 cm
61. If P means $-$, Q means $+$, R means \div and S means \times , then the value of $18P6Q4S6R2$ is
 (a) 12 (b) 24 (c) 26 (d) 128
62. The fifth term of the series 71, 63, 55, 47, is
 (a) 36 (b) 40 (c) 38 (d) 39

63. Two dice are placed side by side as shown in the adjoining figure. What would be total point on the faces opposite to 4 and opposite to 3.



- (a) 6 (b) 11
 (c) 7 (d) 9
64. The unit digit of the number $55 \times 65 \times 75 + 76 \times 86 \times 96$ is
 (a) 0 (b) 1 (c) 3 (d) 7
65. What will come in place of * in the series 4, -8, 16, -32, 64, *.
 (a) 128 (b) -192 (c) 192 (d) -128
66. If $x + y = 12$ and $xy = 32$ then $\frac{1}{x} + \frac{1}{y} =$
 (a) $\frac{1}{8}$ (b) $\frac{1}{4}$ (c) $\frac{1}{2}$ (d) $\frac{3}{8}$
67. The total number of factors of 40 is
 (a) 10 (b) 8 (c) 7 (d) 6
68. If the H.C.F. of two numbers be 1 then those two numbers are
 (a) odd
 (b) coprime
 (c) one is odd and other is even
 (d) composite
69. $1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4}}} - \frac{4}{3} - \frac{1}{10} =$
 (a) 1 (b) $\frac{3}{10}$ (c) $\frac{1}{10}$ (d) 0

70. If $x = 3$ and $y = 2$ then $\frac{3}{x^2 + y^2} + \frac{2}{x^2 - y^2} =$
- (a) $\frac{18}{65}$ (b) $\frac{8}{65}$
(c) $\frac{41}{65}$ (d) None of these
71. Find the dividend when divisor is 13, quotient is 30 and remainder is 12.
- (a) 390 (b) 378 (c) 414 (d) 402
72. The greatest integer that divides the sum of three consecutive integers completely is
- (a) 6 (b) 2 (c) 3 (d) 4
73. The eighth term of the series $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}, \dots$ is
- (a) $\frac{14}{15}$ (b) $\frac{16}{17}$ (c) $\frac{17}{18}$ (d) $\frac{15}{16}$
74. $0.1 \times 0.2 \times 0.3 \times 0.4 \times 0.5 =$
- (a) 0.00012 (b) 0.0012
(c) 0.12 (d) 0.012
75. The number of edges of a tetrahedron is
- (a) 4 (b) 5 (c) 6 (d) 3
76. If $s = ut + \frac{1}{2}ft^2$, $u =$
- (a) $s - \frac{1}{2}ft^2$ (b) $\frac{s}{t} - \frac{1}{2}ft$
(c) $\frac{s}{t} - \frac{1}{2}f$ (d) $s - ft^2$
77. $(a + b)(b - a) + (b + c)(c - b) + (c + a)(a - c) =$
- (a) 0 (b) 1
(c) $a + b + c$ (d) -1
78. The product of first 12 terms of the series 9, 8, 7, 6, ... is

- (a) 3132000 (b) 0
(c) 620 (d) None of these

79. The ninth term of the series 1, 2, 3, 5, 8, 13, 21, ... is
- (a) 57 (b) 89 (c) 34 (d) 55
80. When a positive number is divided by 12, 15 or 18 the remainder in each case is 7. The least value of the number is
- (a) 173 (b) 187 (c) 367 (d) 180

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