

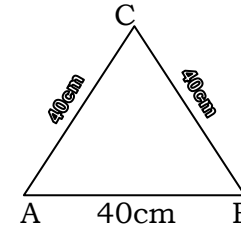
I. Choose the correct answer: 14x1=14

1. Which of the following is true?
 - a) $A-B=A \cap B$
 - b) $A-B=B-A$
 - c) $(A \cup B)' = A' \cup B'$
 - d) $(A \cap B)' = A' \cup B'$
2. If $A = \{x,y,z\}$ then the number of non-empty subsets of A is
 - a) 8
 - b) 5
 - c) 6
 - d) 7
3. If $n(A)=10$, $n(B)=15$ then the minimum and maximum number of elements in $A \cap B$ is _____.
 - a) 10,15
 - b) 15,10
 - c) 10,0
 - d) 0,10
4. $4\sqrt{7} \times 2\sqrt{3} =$ _____.
 - a) $6\sqrt{10}$
 - b) $8\sqrt{21}$
 - c) $8\sqrt{10}$
 - d) $6\sqrt{21}$
5. $0.\overline{34} + 0.\overline{34} =$ _____.
 - a) $0.\overline{687}$
 - b) $0.\overline{68}$
 - c) $0.\overline{68}$
 - d) $0.\overline{687}$
6. If $P(a)=0$ then $(x-a)$ is a _____ of $p(x)$.
 - a) Divisor
 - b) quotient
 - c) remainder
 - d) factor
7. Degree of the constant polynomial is _____.
 - a) 3
 - b) 2
 - c) 1
 - d) 0
8. The zero of the polynomial $3x+6$ is
 - a) -2
 - b) 2
 - c) 0
 - d) $\frac{3}{6}$
9. The orthocenter of the acute angle triangle lies _____ of the triangle.
 - a) outside
 - b) inside
 - c) vertex of a triangle
 - d) none of the above
10. The centroid divides each median in the ratio _____ from the vertex.
 - a) 1:2
 - b) 1:3
 - c) 2:1
 - d) 2:3
11. The ratio in which the x -axis divides the line segment joining the points $(6,4)$ and $(1,-7)$ is
 - a) 2:3
 - b) 3:4
 - c) 4:7
 - d) 4:3
12. The midpoint of the line joining $(a,2b)$, $(3a,4b)$
 - a) $(2a,3b)$
 - b) $(-2a,-b)$
 - c) $(2a,b)$
 - d) $(-2a,-3b)$
13. A particular result of a experiment is called _____.
 - a) Trial
 - b) Simple event
 - c) Compound event
 - d) Outcome

14. The mean of the square of first 11 natural numbers is _____.
 a) 26 b) 46 c) 48 d) 52

II. Answer any ten of the following: 10x2=20

- (Q.No.29 is compulsory)
15. When two coins are tossed, what is the probability that two heads are obtained?
 16. The monthly salary of 10 employees in a factory are given below:
 $\text{₹}5000, \text{₹}7000, \text{₹}5000, \text{₹}7000, \text{₹}8000, \text{₹}7000, \text{₹}7000, \text{₹}8000, \text{₹}7000, \text{₹}5000$. Find the mean and mode.
 17. Find the semi perimeter of a triangle ABC,



18. The point $(3,-4)$ is the centre of a circle. If AB is a diameter of the circle and B is $(5,-6)$, find the coordinates of A.
19. Solve the equation by the method of elimination
 $2x-y=3; 3x+y=7$
20. Factorise:
 - i) $x^2+10x+24$
 - ii) $x^2-8x+15$
21. Write down the power set of $B=\{x,y,z\}$
22. Write 32 in the form of 4^n .
23. Find the centroid of the triangle whose vertices are $(2,-4)$, $(-3,-7)$ and $(7,2)$.
24. Find the median of the given data:
 $36,44,86,31,44,86,35,60,51$
25. If a probability of a player winning a particular tennis match is 0.82. What is the probability of the player loosing the match?
26. If $A=\{-3,-2,4,1\}$ and $B=\{0,1,2,4\}$ find i) $A-B$ ii) $A \cap B$
27. Find only two rational numbers between $-\frac{1}{4}$ and $\frac{3}{4}$.
28. Represent the following numbers in the scientific rotation
 i) 569457000000 ii) 3625000000

29. Expand: $(x + 2y + 3z)^2$ using suitable identity.

III. Answer any ten of the following: 10x5=50

(Q.No.44 is compulsory)

30. If $U=\{4,7,8,10,11,12,15,16\}$, $A=\{7,8,11,12\}$
 $B=\{4,8,12,15\}$ then verify $(A \cup B)' = A' \cap B'$
31. A and B are two sets such that $n(A-B)=32+x$, $n(B-A)=5x$, and $n(A \cap B)=x$, illustrate the information by mean of a venn diagram given that $n(A)=n(B)$. Calculate the value of x

32. Express $1/13$ in decimal form. Find the length of the period of decimals.

33. Represent $3.\overline{45}$ on the number line.

34. Simplify: $\sqrt{63} - \sqrt{175} + \sqrt{28}$

35. The cost of a chocolate is Rs. $(x+y)$ and Amir bought $(x+y)$ Chocolate. Find the total amount paid by him in terms of x and y . If $x=10$, $y=5$ then find the amount paid by him.

36. If $a+1/a=6$, then find the value of a^3+1/a^3 .

37. Factories using synthetic division: x^3-7x+6

38. Show that the following points taken in order form an isosceles triangle A(5,4), B(2,0), C(-2,3)

39. Find the point of trisection of the line segment joining (-2,-1) and (4,8).

40. Find the length of the median through A of a triangle whose vertices are A(-1,3) B(1,-1) and C(5,1)

41. Find the area of an equilateral triangle whose perimeter is 180cm.

42. Find the median

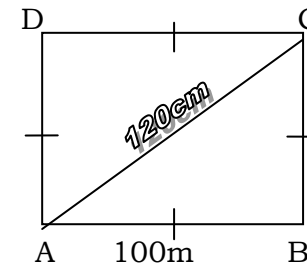
Age (in years)	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	2	7	15	10	11	5

43. The median of observation 11,12,14,18, $x+4$, 30,32, 35,41 arranged in ascending order is 24. Find the values of x .

44. a) The probability of guessing the correct answer to a certain question is $x/3$. If the probability of not guessing the correct answer is $x/3$ then find the value of x .

(or)

b) A farmer has a field in the shape of a rhombus. The perimeter of the field is 400m an one of its diagonal is 120m. He wants to divide the field into two equal parts to grew two different types of vegetable. Find the area of the field.



IV. Answer the following: 2x8=16

45. a) Draw and locate the centroid of the triangle ABC where right angled at A, AB=4cm and AC=3cm.

(or)

b) Draw an equilateral triangle of sides 7cm and locate its orthocentre.

46. a) Draw the graph of $y=4x-1$.

(or)

b) Solve graphically $x+y=7$; $x-y=3$