Set - C

SUMMATIVE ASSESSMENT - III 2025 – 26

Answer key

Qn no	Score	Answer/Value points	Further information
1	1	**Section A** B. 35	
2	1	A. 57	
3	1	A.6	
4	1	A	
5	1	D. (3, 4)	
6	1	C. (ii) and (iv) are true	
7	1	D. (i) and (iv) are true	
8	1	C. Statement 1 and Statement 2 are true and Statement 2 is the reason of Statement 1	
9	1 1	**Section B** Number of pairs = 36 Probability that the sum of number turning up is 9 (3, 6), (4,5), (5,4), (6,3) Probability = $\frac{4}{11}$	
10 A	1 1 1	i) 40 ii) 10^{th} term is the middle term of the terms from 7^{th} to 13^{th} 10^{th} term = $\frac{40}{2} = 20$	
10 B	1 1 1	i) 5^{th} term = $\frac{90}{3} = 30$ ii) sum of first 9 terms = $30 \times 9 = 270$ iii) $30 - 4 \times 5 = 10$	
11 A	1 1 1	i) $10 \times 8 = 80$ ii) $\frac{3 \times 2 + 8 \times 1}{80}$ $\frac{14}{80} = \frac{7}{40}$	

<table>
<tr><td>11 B</td><td>1
1

1</td><td>i) Area of shaded region = $\frac{1}{4}$ × area of square
Probability that it would be
Within the circle $\frac{1}{4}$
ii) $\frac{3}{4}$</td><td></td></tr>
<tr><td>12</td><td>1

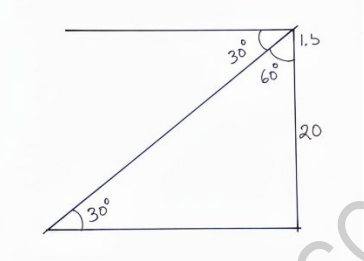
1
1

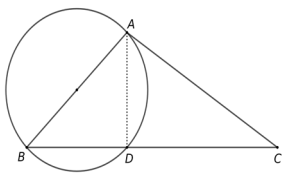
1</td><td>i) 1, 3, 5, 7, 9, 11, …
ii) The natural numbers 1, 2, 3, 4, 5, 6, 7, 8, ... leave remainders 1, 2, 3, 0, 1, 2, 3, 0, ... on division by 4.
The numbers leaving remainders 1 or 3 are the odd numbers.
So the sequence is just the sequence of odd numbers, which is an arithmetic sequence with common difference 2</td><td></td></tr>
<tr><td>13</td><td>

1
1
1
1
1</td><td><table><tr><td>Electricity consumption</td><td>Number of houses</td></tr><tr><td>Below 50</td><td>5</td></tr><tr><td>Below 100</td><td>20</td></tr><tr><td>Below 150</td><td>45</td></tr><tr><td>Below 200</td><td>95</td></tr><tr><td>Below 250</td><td>115</td></tr><tr><td>Below 300</td><td>125</td></tr></table>i) Median consumption is consumption of 63rd house.
ii) Medium class : 150-200 =50 house
$\frac{200-150}{50} = 1$
Consumption of 46th house = $150 + \frac{1}{2} = 150\frac{1}{2}$
Consumption of 63rd house = $150 + \frac{1}{2} + 17 \times 1$
Median = $167\frac{1}{2}$
(Give 1 score if cumulative frequency table alone is correct)</td><td></td></tr>
<tr><td>14</td><td>
1</td><td>Section C
Slope = $\frac{1-0}{0-1}$ = -1</td><td></td></tr>
</table>

	1	Writing any one coordinate Being slope -1, when x increases by 1, y decreases by 1 (1, 0) a point ∴ (2, -1), (3, -2)… are points.	
15	1 1 1 1 1	i) a)Side of triangle = 2– (-2) = 4 b) OB = 2, OC = $2\sqrt{3}$ Coordinate of C is (0, $2\sqrt{3}$) (Give $\frac{1}{2}$ score if the *x* coordinate alone is correct) ii) For drawing x and y axis For marking any are point correctly For drawing equilateral triangle	
16 A	 1 1 1 1 1	i) Coordinate of C is (10, 6) AC = 10 – 4 = 6 BC = 15 – 6 = 9 (Give $\frac{1}{2}$ score if coordinate of C alone is correct) ii) In △ ADP, △ ACB angle are same Side are proportional AD = $\frac{AC}{3} = \frac{6}{3} = 2$ PD = $\frac{BC}{3} = \frac{9}{3} = 3$ iii) Coordinate of P (4+2), (6+3); P (6, 9)	
16 B	1 1 1 1 1	i) radius = $\sqrt{(4-1)^2 + (5-1)^2}$ = 5 ii) $(x-4)^2 + (y-5)^2 = 25$ iii) y – coordinate of a point in *n* axis is *O* $(x-4)^2 + (0-5)^2 = 25$ $(x-4)^2 = 0$ $x = 4$ (Give $\frac{1}{2}$ score for y coordinate is 0)	

17		**Section D**	
		Sum of two numbers = 20	
		i) Number are $10 + x$, $10 - x$	
	1	$(10 + x)(10 - x) = 95$	
		$100 - x^2 = 95$	
	1	$x^2 = 5$, $x = \sqrt{5}$	
	1	number $10 + \sqrt{5}$, $10 - \sqrt{5}$	
18	1	i) Sum of first 20 terms $= \frac{5 \times 20 \times 21}{2} + 20 \times 1$	
	1	$= 1050 + 20 = 1070$	
		ii) $4 - 1 = 3$	
	1	$3 \times 20 = 60$ more	
19	1	i) $x_n = \frac{2}{3}n - \frac{1}{3}$	
		$= \frac{2n-1}{3}$	
		Here 2n–1 is an odd number and if take	
	1	n =1, 2, 3, … we get all odd number in numerator	
		There for numerator contains all odd multiples of 3.	
	1	Dividing these number by 3, we get all odd numbers	
		ii) An odd number divided by 3 will never be an even	
	1	number, hence the sequence certain we even number.	
20 A		i) $x^2 - x - 56 = (x+a)(x+b)$	
	1	$a+b$ = -1, ab = -56	
		a =-8, b = 7	
	1	$x^2 - x - 56 = (x-8)(x+7)$	
		(Give 1 sore if any one factor alone is correct)	
	1	ii) $2x^2 - 2x - 112 = 2(x^2 - 2 - 56)$	
		$2(x-8)(x+7) = 0$	
	1	$x = 8$, $x = -7$	
		(Give 1 score if only one solution is correct)	
20 B	1	At the point of inter section of x – axis, y coordinate is 0	
		or	
	1	$3x^2 + 2x - 5 = 0$	

		a = 3, b = 2, c = -5	
	1	$x = \frac{-2 \pm \sqrt{4-4\times3\times-5}}{2\times3}$	
		$x = \frac{-2 \pm \sqrt{64}}{6}$	
	1	$x = \frac{-2+8}{6}$ or $\frac{2-8}{6}$	
		$= 1, \frac{-5}{3}$	
		Coordinate $(1, 0)$, $(\frac{-5}{3}, 0)$	
21		**Section – E**	
	1		
	1	For drawing rough figure and marking measure correctly For identify the sides triangle are the ratio 1: $\sqrt{3}$: 2 and Height of the building and boy = 21.5	
		$\tan 30^o = \frac{21.5}{\text{car parked distance}}$	
		$\tan 30^o = \frac{1}{\sqrt{3}}$	
	1	Distance = $21.5\sqrt{3}$	
22 A		i) $\angle ACB = \frac{100}{2} = 50^o$	
	1		
	1	ii) The central angle in the first figure and angle made by the arc in the second figure are same the figure are same	
	1		
	1	Central angle of the are in second figures is twice the first	
		$2 \times \frac{1}{6} = \frac{1}{3}$ part of the circle	
22 B	1	i) $\angle ADB = 90^o$	
		ii) In figure AB = AC	
	1		
		$\therefore \angle ADC = 90^o$	
	1	Perpendicular drawing	



	1	from conmen vertex of the equal sides of an isosceles triangle bisects the third side. ∴ D is the mid point of BC Circle drawn with AC as diameter also passes though D by the some reason	
23 A	1 1 1 1	i) Slant height = $\sqrt{25^2 - 15^2} = 20$ Height = $\sqrt{20^2 - 15^2} = \sqrt{175} = 5\sqrt{3}$ ii) $l = \sqrt{25^2 - 20^2} = \sqrt{15}$ $15 < \frac{40}{2}$ or $l < \frac{a}{2}$ ∴ we can not make a sequence pyramid	
23 B	1 1 1	i) Volume = $\frac{4}{3}\Pi \times 6^3 = 288\ \Pi$ cube ii) Ratio of volume = $r_1^3 : r^3$ $l^3 : (\frac{1}{3})^3 = 1 : \frac{1}{27} = 27 : 1$ iii) 27 small sphere can be made	
24	1 1 1 1 1	i) h = 6 × sin 40 = 6 × 0. 6428 = 3.8568 cm Area = $\frac{1}{2}$ × 8× 3.9 = 15.6 sq.cm ii) Shortest distance is the perpendicular distance from the end point of the 8cm line to the other side Least length = 8 × sin 40 = 8 × 0.64 = 5.12 =5.1cm	
25 A	1 1	i) Angle of regular pentagon 108° triangle is isosceles, other two angles are $\frac{108-108}{2} = 36°$	

	1 1 1	Angle between tangent code is equal to the angle in the opposite segment ∴marked angles are 36° each ii) In any regular polygon if we draw tangent to the circumcircle at a vertex, we get an iceless triangles whose the angles on other vertices equal These angles are angles in alternate segment of the two angles made by tangent at that vertex ∴these angle are equal	
25 B	1 1 1 1	i) Area = = $\sqrt{3} \times \frac{(4)^2}{4}$ = 4 $\sqrt{3}$ sqcm S = $\frac{12}{2}$ = 6 Inradius = $\frac{4\sqrt{3}}{6} = \frac{2}{3}\sqrt{3}$ cm ii) In an equilateral triangle angle bisectors are the perpendicular bisectors of opposite side ∴Circumcentre and incentre are same Angle of the right triangle formed is 30, 60, 90, ∴ R = 2r	
26	1 1 1 1	For drawing a rectangle with given measures For extending base about 3 centimetre and drawing semi circle For drawing one side of the square For completing the square	
27	1 1 1 1	For drawing a circle with given measures For calculating any one central angles For drawing central angle For drawing tangents	