SSLC EXAMINATION , MARCH - 2022

S1731

ANSWER KEY - MATHEMATICS – EM

Qn no.	Key	Score	
	PART - I **Questions from 1 to 10 carries 1 score each**		
	(A)		
1	4	1	1
2	70^0	1	1
3	$\frac{3}{10}$	1	1
4	4	1	1
5	3	1	1
6	0	1	1
	(B)		
7	$\frac{1}{\sqrt{3}}$	1	1
8	24	1	1
9	$10\sqrt{3}$	1	1
10	1	1	1
	PART - II **Questions from 11 to 18 carries 2 score each**		
	(A)		
11	(a) 62 (b) $3n + 2$	1 1	2
12	(a) 25 $sq.cm$ (b) $\frac{25}{50} = \frac{1}{2}$	1 1	2
13	(a) $3\sqrt{3}$ m (b) 3 m	1 1	2
14	$x(x + 1)$	2	2
15	32 , 35 , 38 , 42 , 43 , 44 , 45 Median = 42	1 1	2

	(B)		
16	(a) 2 (b) 110	1 1	2
17	$9 \times 4 = PC^2$ $PC = 6\ cm$	1 1	2
18	$\left(1 + \frac{2}{3}(7-1)\ ,\ 2 + \frac{2}{3}(5-2)\right)$ $(5\ ,\ 4)$	1 1	2
	PART - III **Questions from 19 to 25 carries 4 score each**		
	(A)		
19	Construction	4	4
20	(a) $x + 4$ (b) $x^2 + 4x = 77$ $(x + 2)^2 = 81$ Length = 11 *cm* , Breadth = 7 *cm*	1 1 1 1	4
21	Construction	4	4
22	Slant height = $\sqrt{9^2 + 12^2} = 15\ cm$ Surface area = $\pi \times 9^2 + \pi \times 9 \times 15 = 216\pi\ sq.cm$	2 2	4
23	(a) $(4 + 8 - 2\ ,\ 6 + 4 - 2) = (10\ ,\ 8)$ (b) $\left(\frac{2+10}{2}\ ,\ \frac{2+8}{2}\right) = (6\ ,\ 5)$	2 2	4
	(B)		
24	(a) $4 \times 5 = 20$ (b) $\frac{6}{20} = \frac{3}{10}$ (b) Favourable results = $(1\ ,\ 9)\ ,\ (2\ ,\ 8)\ ,\ (3\ ,\ 7)\ ,\ (4\ ,\ 6)$ Probability of getting the sum of the numbers is 10 = $\frac{4}{20} = \frac{1}{5}$	1 1 1 1	4

25	(a) $10 \times \sin 40^0 = 6.4\ cm$ (b) $20 \times 6.4 = 128\ sq.cm$	2 2	4
	PART - IV **Questions from 26 to 32 carries 6 score each**		
	(A)		
26	(a) $PC = PD$ $PC = \sqrt{8 \times 2} = 4\ cm$ (b) Construction	1 1 4	6
27	(a) 90^0 (b) $AB = 10\ cm$ $BC = 10\sqrt{3}\ cm$ $CD = \frac{20}{\sqrt{2}}\ cm$ OR $= 10\sqrt{2}\ cm.$ $AD = \frac{20}{\sqrt{2}}\ cm$ OR $= 10\sqrt{2}\ cm$ Perimeter $= 10 + 10\sqrt{3} + \frac{40}{\sqrt{2}}\ cm$ OR $= 10 + 10\sqrt{3} + 20\sqrt{2}\ cm.$	1 1 1 1 1 1 1	6
28	(a) Coordinates of B = $(7, 1)$ Coordinates of D = $(2, 5)$ (b) Length = 5 cm Breadth = 4 cm (c) $\sqrt{(7-2)^2 + (5-1)^2} = \sqrt{41}\ cm$	1 1 1 1 2	6
29	(a) $\frac{4}{3} \times \pi \times 6^3 = 288\pi\ cubic\ cm$ (b) Volume of the cone = $288\pi\ cubic\ cm$	3 1	6

	(b) $\frac{1}{3} \times \pi \times 6^2 \times h = 288\pi$ $h = 24\ cm$	1 1	
	(B)		
30	(a) $x + 5$ (b) $x(x + 5) = 104$ $x^2 + 5x - 104 = 0$ $n = \frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times (-104)}}{2 \times 1} = \frac{-5 \pm \sqrt{441}}{2}$ $n = 8$ or $n = -13$	1 1 1 2 1	6
31	(a) 3 (b) $x - 1$ (c) $p(x) - p(1) = x^2 - 3x + 2$ $p(x) - p(1) = (x-1)(x-2)$ Solutions of the equation $p(x) - p(1) = 0$ = 1 , 2	1 1 1 1 2	6
32	(a) 23 (b) $\frac{160 + 162}{2} = 161$ (b) Consumption of electricity between 160 and 180 are in arithmetic sequence . Median consumption = 161 + 3 × 2 = 167 *units*	1 2 1 2	6
	PART - V **Questions from 33 to 35 carries 8 score each**		
33	(a) 8^{th} term = 6 + 7 × 4 = 34 Sum of the first 15 terms = 15 × *Middle term* = 15× 34 = 510 (b) $15 \times d = 60$ (c) $15 \times 15 \times d = 900$	2 2 2 2	8

34	$\angle OAC = 90^0$ $\angle ACB = 70^0$ **(b) Construction**	**1** **1** **6**	**8**
35	**(a) Construction** **(b)** $\frac{3-1}{4-2} = 1$ **(c) Mid point of the diameter is the centre of the circle .** **Coordinates of the other end of the diameter =** $(5, 2)$	**3** **2** **1** **2**	**8**