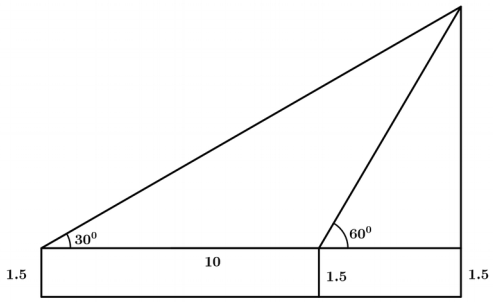
SSLC MODEL EXAMINATION, FEBRUARY - 2023

MATHEMATICS – ANSWER KEY

ME 231

Qn no.	Key	Score	
	Each questions from 1 to 4 carries 2 scores.		
1	26 , 33	2	2
2	3 , 6 , 9	1	2
	$\frac{3}{10}$	1	
3	a) $BC = 5\ cm$	1	2
	b) $AB = 5\sqrt{3}\ cm$	1	
4	2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18	1	2
	10	1	
	Each questions from 5 to 10 carries 3 scores.		
5	a) $x_3 = \frac{145}{5} = 29$	1	3
	b) 21 , 25 , 29 , 33 , 37	2	
6	Construction	3	3
7	Construction	3	3
8	a) $x(x + 4) = 96$ ==> $x^2 + 4x = 96$	1	3
	b) $(x + 2)^2 = 96 + 2^2$	1	
	$x = 8\ cm$	1	
9	a) Parallelogram	1	3
	b) $B = (3 + 5 - 6 , 1 + 0 - 1) = (2 , 0)$	1	
	$C = (10 - 2 , 0) = (8 , 0)$	1	
10	Construction	3	3
	Each questions from 11 to 21 carries 4 scores.		
11	a) $4n + 3$	1	
	b) $4 \times 10 + 3 = 43$	1	

	c) No The remainder got when divide 100 by 4 is not 3 .	1 1	4
12	a) PC $= \sqrt{5 \times 3} = \sqrt{15}\ cm$ b) Construction	1 3	4
13	If length is taken as x cm , then breadth $= 40 - x$ cm $x(40 - x) = 384 \implies 40x - x^2 = 384$ $(x - 20)^2 = -384 + 400$ Length $= 24\ cm$, Breadth $= 16\ cm$	1 1 1	4
14	a) $\frac{20 \times 24}{45 \times 50}$ b) $\frac{25 \times 26}{45 \times 50}$ c) $\frac{(25 \times 24) + (20 \times 26)}{45 \times 50}$	1 1 2	4
15	a) $AM = 10\ cm$ $BM = 10\ cm$ b) $MC = 5\ cm$ c) $AC = \sqrt{10^2 + 5^2} = \sqrt{125}\ cm$	1 1 1 1	4
16	a) $P(2) = 2^2 - 11 \times 2 + 21 = 3$ b) $p(x) - p(2) = x^2 - 11x + 18$ c) $p(x) - p(2) = (x - 2)(x - 9)$	1 1 2	4
17	a) $B = (7, 1)$ $D = (3, 4)$ b) $AC = \sqrt{(7 - 3)^2 + (4 - 1)^2} = 5\ cm$	1 1 1	4
18	a) $D = (4, 9)$ b) 2	1 1	4

	c) $\frac{y-3}{x-1} = 2$ or $2x - y + 1 = 0$	2	
19	a) $\angle OBT = 90^0$ b) $\angle OBA = 20^0$ c) $\angle AOB = 140^0$ d) $\angle APB = 70^0$	1 1 1 1	4
20	a) $l = \sqrt{13^2 - \left(\frac{10}{2}\right)^2} = 12\ cm$ b) $10^2 + 2 \times 10 \times 12 = 340\ sq.cm$	2 2	4
21	a) $10\ cm$ b) 1 : 2 c) 1 : 4 d) 1 : 2	1 1 1 1	4
	Each questions from 22 to 29 carries 5 scores.		
22	a) $x_7 + x_{20} = 125$ b) $x_{21} = 125 - 40 = 85$ c) $13 \times 125 = 1625$	1 2 2	5
23	a) $\angle D = 360^0 - (100^0 + 90^0 + 95^0) = 75^0$ b) A is inside the circle C is on the circle c) $\angle B + \angle D = 100^0 + 75^0 = 175^0$ D is outside the circle	1 1 1 1 1	5
24	a) 	2	5

	b) Width of the canal $= 5\,m$ **Height of the tree** $= 5\sqrt{3} + 1.5\ m$	**2**	
25	**Construction** **Radius of the circle** $= 1.6\ cm$	**4** **1**	**5**
26	**a)** $3\pi \times 6^2 = 108\pi\ sq.cm$ **b) Volume of the hemisphere** $= \frac{2}{3} \times \pi \times 6^3 = 144\pi\ cubic.cm$ **Height of the cone** $= \frac{144\pi}{\frac{1}{3} \times \pi \times 6^2} = 12\ cm$	**2** **1** **2**	**5**
27	**a)** $(10, 0)$, $(-10, 0)$, $(0, 10)$, $(0, -10)$ **b)** $\sqrt{(6-0)^2 + (8-0)^2} = 10$ **. So (6 , 8) is on the circle .** **c)** $x^2 + y^2 = 100$	**2** **2** **1**	**5**
28	**For drawing the table** **a)** 13^{th} **b) Median class** $= 140 - 150$ **Height of the 10th student** $= \frac{140 + 141}{2} = 140.5\ cm$ **Median height** $= 140.5 + 3 = 143.5\ cm$	**1** **1** **1** **1** **1**	**5**
29	**a)** $6 + 7$ **b)** $2 + 3 + 4 + 5$ **c)** $50 + 51$ **d)** 32 , 64	**1** **1** **1** **2**	**5**