SSLC MATHS MODEL QUESTION PAPER - 01: 2019-20

No. of ques Time: 3 ho	stions: 38 urs	Subject Code: 81E Max. Marks : 80		
I.Four alt	ernatives are given to the following que	stions or incomplete statements.		
Choose	the correct from them and write it along	g with serial letter. $08 \times 01 = 08$		
1)	Which of the following is not an irrational	number?		
	A) $\sqrt{2}$	$B)\sqrt{3}$		
	C) 1 1 1 1 1 1 1 1 1 1 	$D)\sqrt{7}$		
2)	Common difference of the AP 3,6,9,12,	. is		
	<i>A</i>) 3	<i>B</i>) – 3		
	<i>C</i>) 6	D) 9		
3)	3) If the linear equations of the form $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$			
	have unique solution then the correct rela	tion in the following is		
	A) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$	B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$		
	C) $\frac{a_1}{a_2} = \frac{b_1}{b_2}$	$D) \frac{a_1}{a_2} \neq \frac{b_1}{b_2}$		
4)	4) The value of discriminant of the quadratic equation $x^2 + 5x + 5 = 0$ is			
	A) 5	B) - 5		
	$C)\frac{5}{2}$	$D) \frac{-5}{2}$		
5)	5) The distance between $p(x, y)$ and the origin is \int_{a}^{b}			
	A) $\sqrt{x+y}$	$B)\sqrt{x^2-y^2}$		
	$C)\sqrt{x-y}$	$D)\sqrt{x^2+y^2}$		
6)	The maximum value of $\sin \theta$ is			
	A) $\frac{2}{\sqrt{3}}$	B) $\frac{\sqrt{3}}{2}$		
	<i>C</i>) 1	$D)\sqrt{2}$		
7)	In $\triangle ABC$, $\angle B = 90^\circ$, <i>BD</i> is the perpendicular of $\triangle ADB$ and $\triangle ABC$ is	ar bisector of AC. The ratio of areas		



A) 1:1

B) 1:2

C) 2:1

- *D*) 1:4
- 8) A solid sphere is converted into a solid cylinder. Then the quantity that does change is
 - A) Shape
 - C) Curved surface area

- *B*) Total surface area
- D) Volume

Answer the following questions. II.

- 9) Express 210 as the product of prime factors.
- 10) In an AP, if $a_n = 2n + 3$ find a_3
- 11) What is the degree of the polynomial $8x^2 + 4x^3 5x + 3$?

1

- 12) Find the sum of zeroes of the polynomial $x^2 + 5x + 6$.
- 13) Find the value of ' θ ' in the given figure.



- 15) Write the formula to find the volume of hemisphere.
- 16) Write the standard form of quadratic equation.

III. Answer the following questions.

- 17) Prove that $2 + \sqrt{3}$ is an irrational number.
- 18) Solve : x + y = 5, 2x 3y = 5
- 19) Solve the quadratic equation $3x^2 5x + 2 = 0$ by using formula.
- 20) In the figure, $LM \parallel CB$ and $LN \parallel CD$. Prove that $\frac{AM}{AB} = \frac{AN}{AD}$





21) If the sum of two numbers is 36 and their product is 315, find the numbers. OR

The length of a rectangle is 2m more than its breadth. If the area of rectangle is 120cm² find the length and breadth.

- 22) An unbiased dice is rolled once. Find the probability of getting
 - a) a prime number b) a number between 2 and 6
- 23) Draw a circle of radius 3cm. Construct a pair of tangents to the circle from a point 8cm away from the centre of circle.





24) A cuboid is formed by joining two identical cubes of volume 64cm³ each. Find the total surface area of cuboid.

IV. Answer the following questions.

25) Solve by using graph : x + y = 10, x - y = 4

26) The sum of numerator and denominator of a fraction is 8. If 3 is added to both numerator and denominator it becomes $\frac{3}{7}$. Find the fraction.

OR

Ten years ago the age of father is 12 times the age of son. After ten years the age of father is twice the age of son. Find their present ages.

- 27) Two zeroes of the polynomial $x^3 + 5x^2 + 7x + 3$ are -1 and -3. Find the third zero of the polynomial.
- 28) If the points A(2,3), B(4, k) and C(6, -3) are collinear find the value of k.

OR

- Verify that the points (5, -2), (6, 4) and (7, -2) are the vertices of triangle or not
- 29) Prove that the tangent drawn at any point on the circle is perpendicular to the radius at that point.
- 30) In the figure *ABCD* is a square of side 10cm. Find the area of shaded region.



31) A toy is made by joining a cone on a hemisphere as shown in the figure. If the radius of cone and hemisphere is 3.5cm each and the height of cone is 5cm, find the volume of toy.



A metallic solid sphere of radius 10.5cm is melted and recast into small cones of radius 3.5cm and height 3cm. Find the number of cones so formed. 32) In the figure, if $AD = 7\sqrt{3}m$ find the length of *BC*.



$$09 \times 03 = 27$$

OR

From a point $60\sqrt{3}m$ away from the foot of a tower, the angle of elevation to the top of tower is 30°. Find the height of tower.

Daily Income (in Rs.)	100 - 120	120 - 140	140 – 160	160 - 180	180 – 200
No. of workers	12	14	8	6	10

33) The following distribution shows the daily income of 50 workers in a factory.

Draw a less than type ogive for this distribution.

$04 \times 04 = 16$

34)In an AP, 3rd term is 7 and the 7th term is 2 more than three times the third term. Find the sum of first 20 terms of the AP.

OR

Tenth term of an AP is 21 and the sum of its first 10 terms is 120. Find the 20^{th} term of AP.

35)Prove that $(secA + \tan A)^2 = \frac{cosec A+1}{cosec A-1}$

V. Answer the following questions.

36)Construct a triangle of sides 4cm, 5cm and 6cm. Then construct another

triangle similar to the first triangle such that the sides of this triangle are $\frac{2}{3}$ the sides of first triangle.

37)Find the mean and mode for the following data.

Class Interval	Frequency		
0 - 6	1		
6 – 12	4		
12 – 18	9		
18 – 24	3		
24 - 30	3		

VI. Answer the following questions.

38)State and prove Pythagoras theorem.

 $\mathbf{01}\times\mathbf{05}=\mathbf{05}$