ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯ ನಿರ್ಣಯ ಮಂಡಲಿ

ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560003

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

MALLESHWARAM, BENGALURU- 560003

2026-27 ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ – 1

S.S.L.C. MODEL QUESTION PAPER- 1 2026-27

ವಿಷಯ : ಗಣಿತ

SUBJECT: MATHEMATICS

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ/ ENGLISH MEDIUM)

ವಿಷಯ ಸಂಕ್ಷೇತ : 81-E	Subject Code : 81-E
ಸಮಯ: 3 ಗಂಟೆ 15 ನಿಮಿಷಗಳು	(Time: 3 Hours 15 Minutes)
ಗರಿಷ್ಠ ಅಂಕಗಳು : 80	(Max. Marks: 80)

General Instructions to the candidate:

1. This question paper consists of 38 questions.
2. Follow the instructions given against the questions.
3. Figures in the right-hand margin indicate maximum marks for the Questions.
4. The maximum time to answer the paper is given at the top of the question Paper It includes 15 minutes for reading the question paper.

I. Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. **$8 \times 1 = 8$**

1) If the pair of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ have unique solution, then the correct relation among the following is

(A) $\frac{a_1}{a_2} = \frac{b_1}{b_2}$ (B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

(C) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ (D) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

2) If the graph of a linear polynomial intersects x-axis at the point $(3, 0)$ then the polynomial is

(A) P(x) = x − 3 (B) P(x) = x + 3

(C) P(x) = 3x (D) P(x) = 3

3) If the roots of the quadratic equation $x^2 + 6x + k = 0$ are real and equal, then the value of 'k' is

(A) 5 (B) 8

(C) -9 (D) 9

4) The common difference of the arithmetic progression $-7, -9, -11, -13$…….. is

(A) 2 (B) -2

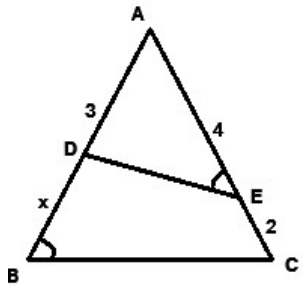
(C) -7 (D) -9

5) In the figure, $\angle ABC = \angle AED$, AD=3 units, AE=4 units and EC= 2 units.

The value of x is,

(A) 5 units (B) 6 units

(C) 3 units (D) 1.5 units



6) The value of $\sin 30^0 + \cos 60^0$ is,

(A) $\frac{1}{2}$ (B)1

(C) $\frac{1}{4}$ (D) $\frac{3}{2}$

7) A cone and a cylinder have the same base radius and equal volumes. If the height of the cylinder is 12 cm, then the height of the cone is,

(A) 6 cm (B) 12 cm

(C) 4 cm (D) 36 cm

8) The lower limit of the modal class in the given frequency distribution table is,

Class Interval	10-20	20-30	30-40	40-50
Frequency	6	4	12	3

(A)10 (B)20

(C)30 (D)50

II. Answer the following questions: $\mathbf{8 \times 1 = 8}$

9) What is a composite number?

10) Write the degree of the polynomial $p(x) = x^3 + 2x^2 - 5x^4 - 6$

11) If the lines represented by the equations $x + 2y - 4 = 0$ and $3x + by - 12 = 0$ are coincident, then find the value of 'b'.

12) If a_n, S_n and S_{n-1} represent the nth term, sum of the first n terms and sum of first (n – 1) terms then, express a_n in terms of S_n and S_{n-1}.

13) State AAA criterion for similarity of triangles.

14) Find the coordinates of the midpoint of the line segment joining the points $P(3, 4)$ and $Q(5, 6)$

15) Write the formula to find the total surface area of a right circular cone of base radius 'r', and slant height '*l*'.

16) Find the probability of getting a head when a fair coin is tossed once.

III. Answer the following questions: **8 x 2 = 16**

17) Find the L.C.M and H.C.F of 72 and 120 by prime factorization method.

18) Prove that $7 + \sqrt{5}$ is an irrational number.

19) Solve the given pair of linear equations by elimination method.

$$3x - y = 4$$
$$x + y = 8$$

20) Find the discriminant of the quadratic equation $3x^2 + 5x - 3 = 0$ and write the nature of roots.

OR

Find the roots of the quadratic equation $3x^2 - 5x + 2 = 0$

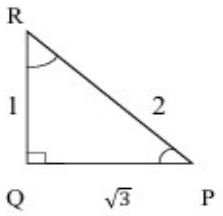
21) Find the sum of the first 20 terms of the arithmetic progression 6, 10, 14, ... using formula.

22) Two concentric circles with centre 'O' and radii 5cm and 3cm are drawn. Find the length of the chord of the larger circle which touches the smaller circle at point P.



23) Find the distance between the points $P(2, 4)$ and $Q(8, 12)$ using 'distance formula'.

24) In the figure, find the value of sin P and tan R.



OR

If $\sin\theta = \frac{12}{13}$ and $\cos\theta = \frac{5}{13}$, then find the value of $\sec\theta$ and $\tan\theta$

IV. Answer the following questions: **9 x 3 = 27**

25) Find the zeroes of the quadratic polynomial $P(x) = x^2 - 5x - 14$ and verify the relationship between the zeroes and the coefficients.

OR

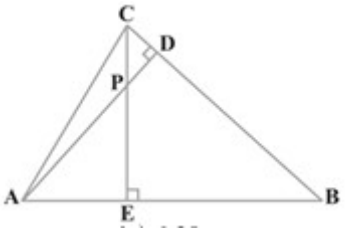
Write the quadratic polynomial whose sum of the zeroes is 2 and the product of the zeroes is -8. Also find the zeroes of this polynomial.

26) In a positive fraction, the sum of numerator and denominator is 5. If 1 is added to both numerator and denominator the new fraction obtained is $\frac{1}{12}$ more than the original fraction. Find the original fraction.

27) In the figure, altitudes AD and CE of Δ ABC intersect each other at the point P.

Prove that: (i) Δ AEP $\sim$ Δ CDP

(ii) Δ ABD $\sim$ Δ CBE



28) Prove that "the lengths of tangents drawn from an external point to a circle are equal".

29) Find the ratio in which the line segment joining the points $A(1, -5)$ and $B(-4, 5)$ is divided by the $x-axis$. Also find the coordinates of the point of division.

OR

Find the coordinates of the point of trisection of the line segment joining the points $(2, -2)$ and $(-7, 4)$.

30) Prove that $\frac{sinA}{1-cot} + \frac{cosA}{1-tan} = sinA + cosA$.

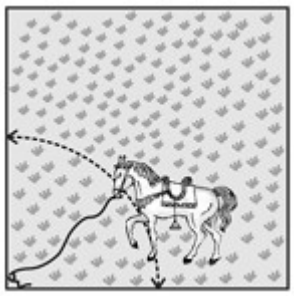
OR

Evaluate : $\frac{2cos(90^0-30^0)+tan45^0-\sqrt{3}cosec60^0}{\sqrt{3}sec30^0+2cos60^0+co\quad^0}$

31) A horse is tied to a peg at one corner of a square shaped grass field of side 15m by means of a 5m long rope.

Find (i) the area of that part of the field in which the horse can graze.

(ii) the increase in the grazing area if the rope were 10m long instead of 5m.



32) Find the Mean for the following frequency distribution table.

Class interval	frequency
10 – 14	2
15 -19	3
20 -24	5
25 -29	3
30 – 34	2

OR

Find the Median for the following frequency distribution table.

Class interval	100-150	150-200	200-250	250-300	300-350
frequency	6	3	5	20	10

33) Two fair dice are rolled simultaneously. Find the probability of getting

i) two different digits on the top faces

ii) the product of the digits on the top faces to be 6

iii) the difference of digits on the top faces to be 1

V. Answer the following questions: **4 x 4 = 16**

34) In an arithmetic progression of 40 terms the sum of first 9 terms is 153 and the sum of last 6 terms is 687. Find the first term and the common difference of the progression and also find the sum of all terms of the progression.

OR

The digits of a positive integer having 3 digits are in arithmetic progression and the sum of the digits is 9. The number obtained by reversing the digits is 396 more than the original number. Find the number.

35) Solve the given pair of linear equations by graphical method.

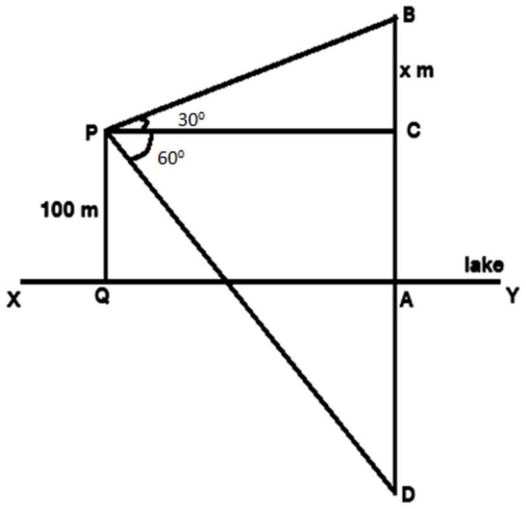
$$2x + y = 8$$
$$x - y = 1$$

36) State and prove Basic Proportionality theorem (Thales Theorem).

OR

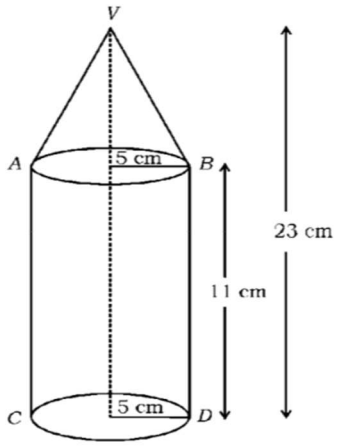
Prove that 'If one angle of a triangle is equal to one angle of the other triangle and the sides including these angles are proportional, then the two triangles are similar. '

37) The angle of elevation of a bird at B from a point 100m above the surface of a lake is 30^0 and the angle of depression of its reflection (D) in the lake from the same point is 60^0. Find the height of the bird from the surface of the lake.



VI. Answer the following question: **1 x 5 = 5**

38) A solid is in the shape of a cone placed on the cylinder as shown in the figure. The radii of both the cylinder and the cone are equal to 5cm. If the height of the cylinder is 11cm and the total height of the solid is 23cm, then find the curved surface area and volume of the solid.



OR

A milk tank is in the shape of a cylinder with hemispheres of same radii attached to both ends of it as shown in figure. If the total height of the tank is 6m and the radius is 1m, calculate the maximum quantity of milk in litres that can be filled in the tank.

