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FOR KARNATAKA CLASS 10 PREPARATION

Karnataka SSLC Model Question Paper 2027 for Mathematics (Paper 3, English Medium)

EXAM	YEAR	TYPE	SUBJECT
Karnataka Class 10	2027	Sample Paper	Maths

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 – 3

S.S.L.C. MODEL QUESTION PAPER- 3 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 lines represented by the pair of linear equations $a_1x + b_1y + c_1=0$ and $a_2x + b_2y + c_2 =0$ intersect each other, then the correct relation among the following is

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

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

2. If α and β are the zeroes of the polynomial $p(x) = ax^2 + bx + c$, then the value of α + β is

(A) $\frac{b}{a}$ (B) $\frac{-b}{a}$

(C) $\frac{c}{a}$ (D) $\frac{-c}{a}$

3. The formula to find the sum of all terms of the arithmetic progression with first term 'a' and last term 'l' is

(A) $S_n = \frac{n}{2}(a + l)$ (B) $S_n = \frac{n}{2}(a - l)$

(C) $S_n = \frac{n}{2}(a \times l)$ (D) $S_n = \frac{n}{2}(a \div l)$

4. The value of $\text{cosec } 60^0 + \sec 30^0$ is

(A) $\frac{\sqrt{3}}{2}$ (B) $\frac{\sqrt{3}}{4}$

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

5. The formula to find the total surface area of cube of edge 'a' unit is

(A) $4a^2$ Sq. units (B) $6a^2$ Sq. units

(C) $4a^3$ Sq. units (D) $6a^3$ Sq. units

6. Which measure of central tendency is calculated by finding Cumulative frequency?

(A) Mean (B) Median

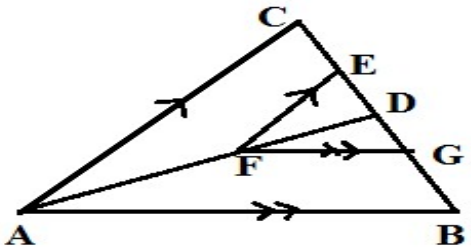
(C) Mode (D) Deviation

7. If p and q are co-primes, then the H.C.F of p^2 and q^2 is

(A) pq (B) 1

(C) p + q (D) p^2q^2

8. In the figure, if EF∥CA and FG ∥AB, then $\frac{DE}{EC}$ is equal to

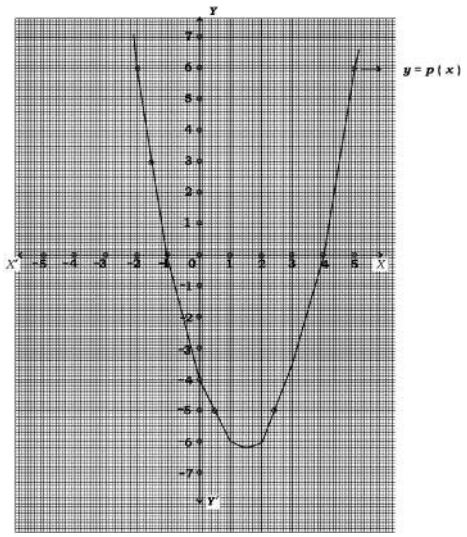


(A) $\frac{DG}{GB}$ (B) $\frac{GB}{DG}$

(C) $\frac{AF}{DF}$ (D) $\frac{AB}{AD}$

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

9. Write the zeroes of the polynomial y=p(x) in the given graph.



10. Find the roots of the quadratic equation $(x-1)(x+3) = 0$

11. Write the coordinates of the point P which divides the line segment joining the points $A(x_1, y_1)$ and B (x_2, y_2) internally in the ratio 1:1.

12. When a die is rolled once, find the probability of getting the number 6 on the top.

13. How many solutions does the pair of linear equations $2x + 3y - 9 = 0$ and $4x + 6y - 18 = 0$ have?

14. If the nth term of an arithmetic progression is $a_n = 2n - 1$ then find its 4^{th} term.

15. If the area of base of a cylinder is $22cm^2$ and height is 10cm, then find the volume the cylinder.

16. In ΔLMN, $\angle L = 50°$ and $\angle N = 60°$. If $\Delta LMN \sim \Delta PQR$, then find the measure of $\angle Q$.

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

17. Prove that $4 + \sqrt{3}$ is an irrational number.

18. Solve the given pair of linear equations by elimination method.

$$2x - y = 8$$
$$x + y = 7$$

19. Express $(2x+3)\, x = x^2+1$ in the standard form of quadratic equation.

OR

For what value of 'k' the roots of the equation $kx^2 + 6x + 1 = 0$ are equal?

20. Find how many numbers between 201 and 401 are divisible by 6 using formula.

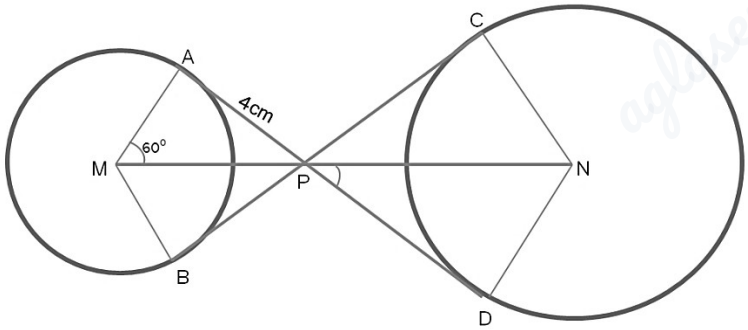
OR

Find the sum of first 20 terms of the arithmetic progression 2, 5, 8, 11,..... using formula.

21. If $sin\ A = \frac{3}{5}$ then find the value of tan A

22. Find the H.C.F and L.C.M of 68 and 72 by the method of prime factorization and verify that L.C.M X H.C. F = The product of numbers.

23. AD and BC are tangents to the circles with centre M and N and they intersect at point P as shown in the figure. If $\angle AMP = 60°$, AP = 4 cm and $AP : PD = 1 : 2$, then find the measure of $\angle NPD$ and length of BC.



24. The centre of a circle is 'P' whose coordinates are P(6, 7). In this circle AB is a chord and the coordinates of its end points are A (3, 4) and B (9, 4). Find the perpendicular distance to the chord from the centre of the circle using formula.

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

25. Find the zeroes of the quadratic polynomial $p(x) = x^2 + 6x + 8$ and verify the relationship between the zeroes and the coefficients.

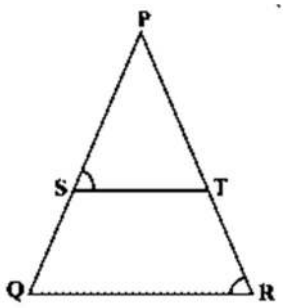
OR

Write the quadratic polynomial whose sum of the zeroes is 3 and product of the zeroes is -10. And also find the zeroes of this polynomial.

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

27. Find the coordinates of the point which divides the line segment joining the points $(4, -3)$ and $(8, 5)$ internally in the ratio 3 : 1.

28. In the figure, $\frac{PS}{SQ} = \frac{PT}{TR}$ and $\angle$ PST = $\angle$ PRQ. Prove that PQR is an isosceles triangle.



29 . Prove that cosec A (1 – cos A) (cosec A + cot A) = 1

OR

Prove that $\frac{sin\theta}{1-cos} + \frac{tan\theta}{1+cos} = cot\theta + sec\theta.cosec\theta$

30. A bag contains 26 cards numbered from 5 to 30. A card is drawn at random from the bag. Find the probability that the card drawn is

(i) a multiple of both 2 and 3

(ii) a square number

(iii) a multiple of 3

OR

There are 3 red balls, 5 white balls and 8 blue balls in a bag. A ball is drawn at random from the bag. Find the probability that the ball drawn is

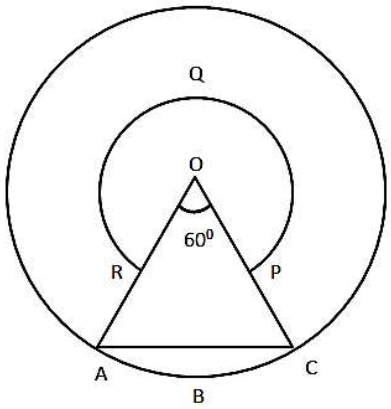
(i) a red ball

(ii) not a white ball

(iii) a green ball

31. A farmer wishes to grow a 100 m^2 rectangular vegetable garden. Since he has only 30m barbed wire, he fences the sides of the rectangular garden letting his house compound wall act as the fourth side fence. Find the dimensions of the garden.

32. In the given figure, area of the sector OAC is $\frac{77}{3}$ cm^2. If OR = RA and $\angle AOC = 60^0$ then, find the area of the segment ABC and length of the arc PQR.



33. Find the Median for the given data

Class interval	frequency
$50 - 60$	6
$60 - 70$	9
$70 - 80$	20
$80 - 90$	10
$90 - 100$	5

OR

Find the Mode for the following frequency distribution table

Class interval	10 -20	20 -30	30 -40	40 -50	50 - 60
frequency	6	4	12	3	5

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

34. In an arithmetic progression the first term is 22, n^{th} term is -11 and the sum of the first 'n' terms is 66. Find the number of terms of the progression , common difference and the 7^{th} term.

OR

An arithmetic progression contains 30 terms. 17^{th} term of the progression is 4 more than thrice of its 5^{th} term. The 10^{th} term of the progression is 31. Find the last three terms of the progression and also find the progression.

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

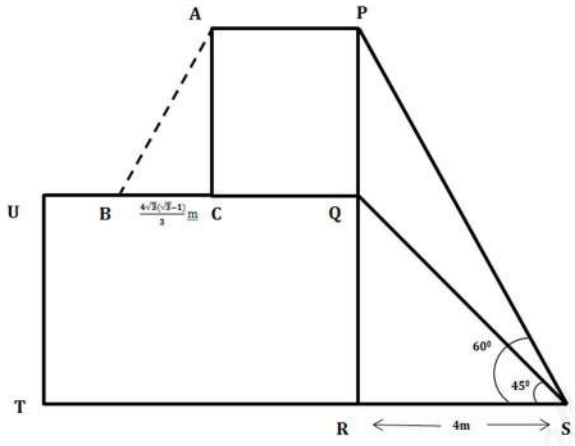
$$x + 2y = 10$$
$$x + y = 8$$

36. Prove that "If in two triangles, sides of one triangle are proportional to (i.e., in the same ratio of) the sides of the other triangle, then their corresponding angles are equal and hence the two triangles are similar.

OR

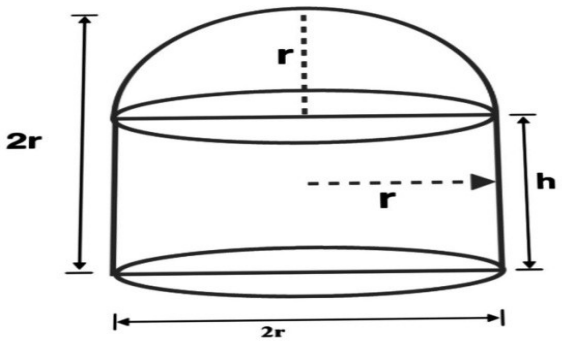
Prove that "If one angle of a triangle is equal to one angle of the other triangle and the sides including these angles are proportional, then the two triangles are similar."

37. A ladder 'AB' is used to climb the terrace of a room (APQC) in the first floor of a building (QRTU) as shown in the figure. The foot of the ladder 'B' is at a distance of $\frac{4\sqrt{3}(\sqrt{3}-1)}{3}$ m from the point 'C'. From a point 'S' on the ground which is 4m away from the building the angle of elevations to the point 'P' on the terrace and to the point 'Q' on the base of the room are 60^0 and 45^0 respectively. Find the length of the ladder and the $\angle ABC$ made by the ladder with the wall.



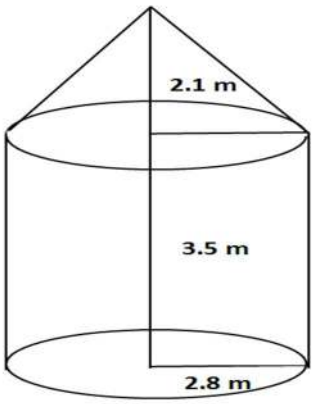
VI. Answer the following question: **1 x 5 = 5**

38. A cylindrical hall has a hemispherical roof and the total height of the hall is equal to the diameter of the hemisphere. Find the area of the floor if the capacity of the hall is 48510m^3. If the inner surface of the hall is to be painted, then find the area to be painted.



OR

50 tents are to be built in a village for an upcoming fair. The lower part of each tent is cylindrical with base radius 2.8m and height 3.5m and the upper part is conical with the same base radius as that of the cylinder. If the height of the cone is 2.1m then find the area of the canvas used to make 50 such tents.



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