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FOR KARNATAKA CLASS 10 PREPARATION

Karnataka SSLC Model Question Paper 2027 for Mathematics (Paper 2, 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 – 2

S.S.L.C. MODEL QUESTION PAPER- 2 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. Rational number among the following is

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

(C) $\sqrt{5}$ (D) $\sqrt{7}$

2. The Empirical relationship between the three measures of central tendency is

(A) 3Mean= 2Median+ Mode (B) Mean = 3Median + Mode

(C) 3Median = 2Mean + Mode (D) Mode = 3Mean + 2Mode

3. The first term of an arithmetic progression is $'a'$ and the common difference is $'d'$. The n^{th} term of the progression is,

(A) $a_n = a + (n-1)d$ (B) $a_n = a + (n+1)d$

(C) $a_n = a - (n-1)d$ (D) $a_n = (n+1)d$

4. In the following, $sin^2 30° + cos^2 30°$ is equal to

(A) sin 60° (B)2 sin 30°

(C) cos 90° (D)2 cos 45°

5. If the curved surface area of a cylinder is $100cm^2$ and its height is $10cm$, then the circumference of its base is,

(A) 100 cm (B) 20 cm

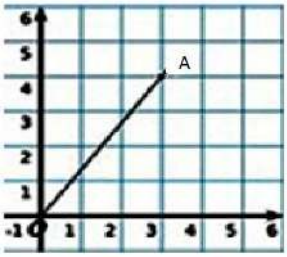
(C) 50 cm (D) 10 cm

6. The lines represented by the pair of linear equations $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$ are,

(A) Intersecting lines (B) Perpendicular lines

(C) Coinciding lines (D) Parallel lines

7. A bird flies along OA from point O to point A as shown in the figure. The distance covered by the bird is,



(A) 4 units (B) 3 units

(C) 5 units (D) 7 units

8. In $\Delta ABC, AB = 4cm, BC = 3.5cm, AC = 2.5cm$ and in ΔDEF, $DF = 7.5cm$.

If $\Delta ABC \sim \Delta DEF$, then the perimeter of ΔDEF is,

(A) $30cm$ (B) $20cm$

(C) $10cm$ (D) $15cm$

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

9. Write the formula to find the volume of a sphere with radius $'r'$.

10. Write the quadratic equation $2m^2 = 2 - m$ in the standard form.

11. Write the conditions for the two polygons of same number of sides to be similar.

12. What is the maximum number of zeroes can a cubic polynomial have?

13. If the 4^{th} term of an arithmetic progression is 11 and the 3^{rd} term is 7, then find its common difference.

14. Find the value of $p(2)$ in the polynomial $p(x) = x^2 - 1$.

15. Write the value of $P(E) + P(\overline{E})$ with reference to the probability of an event.

16. If the pair of liner equations in two variables are inconsistent, then how many solutions do they have?

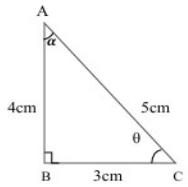
III. Answer the following questions: **8 x 2 = 16**

17. Find which term of the arithmetic progression 2, 7, 12.....is 47 using formula.

OR

In an arithmetic progression if the first term is 1 and 14th term is 53 then, find its n^{th} term.

18. In the figure, find the value of $\sin\propto + \cos\theta$



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

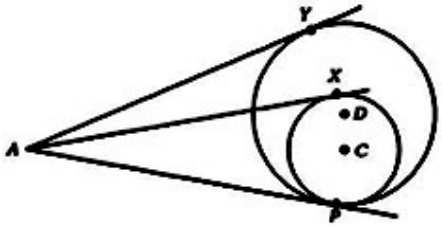
$$4x + y = 13$$
$$x - y = 2$$

20. State the fundamental theorem of arithmetic. Write the prime factors of 30.

21. If the quadratic equation $x^2 + bx + 9 = 0$ has two equal real roots, then find the value of 'b' and hence find the equation.

22. Find the distance between the points $P\ (-5, 7)$ and Q $(-1, 3)$ using the distance formula.

23. In the given figure, AP, AX and AY are the tangents drawn to the circles with centres $C\ and\ D$. Prove that AY=AX.



24. In a school, there are 45 and 54 students in A and B sections of 10^{th} standard respectively. Find the minimum number of books to be purchased for the school library so that when distributed to section-A or section-B separately such that each student gets equal number of books.

OR

The HCF of two numbers is 14 and their LCM is 28 more than 10 times the HCF. If one of the numbers is 56, then find the other number. Also find the product of the numbers.

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

25. Prove that, "The tangent at any point of a circle is perpendicular to the radius through the point of contact."

26. Prove that, $\sqrt{\frac{1+\cos}{1-\cos A}} = cosec\ A + \cot A$

OR

Prove that, $\sec\theta(1 - \sin\theta)\ (\sec\theta + \tan\theta) = 1$

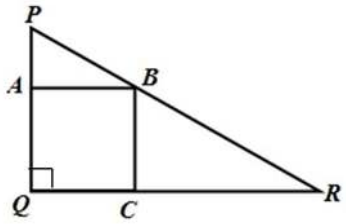
27. In a quadratic polynomial sum of the zeroes is 1 and the difference of the zeroes is 7. Find the quadratic polynomial.

28. The ages of two students A and B are 19 years and 15 years respectively. Find how many years it will take so that the product of their ages becomes equal to 480.

OR

A dealer sells an article for Rs.24 and gains as much percent as the cost price. Find the cost price of the article.

29. The triangle PQR is right angled at $\angle Q$ with sides $PQ = 6cm$ and $QR = 12cm$. square ABCQ is inscribed in the triangle as shown in the figure. Find the length of the side of the square.



30. Find the Mean for the following data.

Class interval	Frequency
$2-6$	4
$6-10$	8
$10-14$	2
$14-18$	1
$18-22$	5

OR

Find the Mode for the following data.

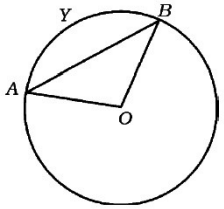
Class interval	Frequency
$0-10$	6
$10-20$	9
$20-30$	15
$30-40$	9
$40-50$	1

31. A box contains 20 discs with numbers 1 to 20 written on them. A disc is drawn at random from the box. Find the probability that the number obtained on the disc is

(i) divisible by 2 but not by 3.

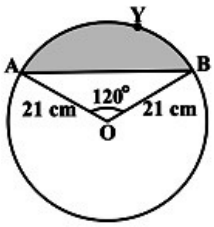
(ii) both perfect square and perfect cube.

32. In the figure, the area of the sector $OAYB$ is $462cm^2$. If $\angle AOB = 120°$, then find the length of the arc AYB.



OR

In the figure, if the radius of the circle is $21cm$ and $\angle AOB = 120°$, then find the area of the segment AYB.



33. Find the ratio in which the point $(-4, 6)$ divides the line segment joining the points $(-6,10)$ and $(3, -8)$ internally.

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

34. Prove that, "If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then the other two sides are divided in the same ratio."

OR

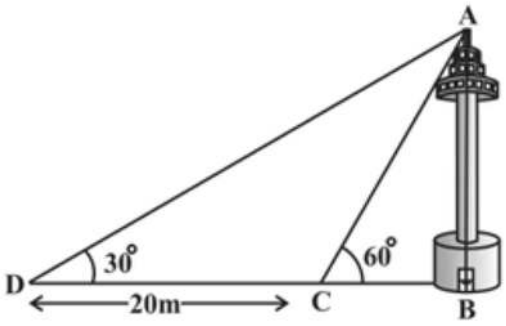
Prove that "If in two triangles, sides of one triangle are proportional to the sides of the other triangle, then their corresponding angles are equal and hence the two triangles are similar."

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

$$2x + y = 4$$
$$x + y = 3$$

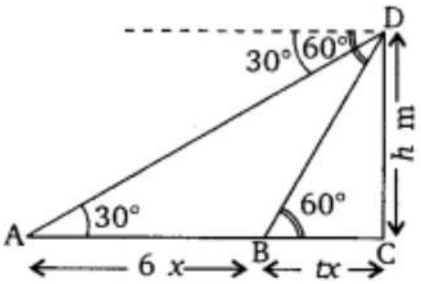
36. Sum of the first five terms of an arithmetic progression is 75 less than the sum of the next five terms. If the sum of 2nd term and 12th term of the same progression is 50, then find the progression.

37. A television tower stands vertically on the bank of a canal. From a point on the other bank directly opposite the tower, the angle of elevation of the top of the tower is 60°. From another point $20m$ away from this point, on the line joining this point to the foot of the tower, angle of elevation of the top of the tower is 30°. Find the height of the tower and the width of the canal. (Use $\sqrt{3} = 1.732$)



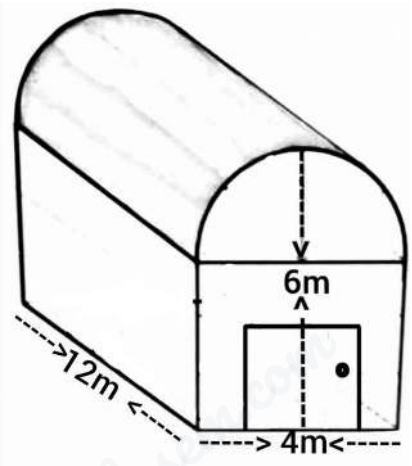
OR

A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of 30°, which is approaching the foot of the tower with a uniform speed. 6 seconds later, the angle of depression of the car is found to be 60°. Find the time taken by the car to reach the foot of the tower from this point.



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

38. A warehouse is in the shape of a cuboid surmounted by a half cylinder as shown in the figure. A merchant plans to paint the outer surface of the warehouse excluding the door of dimension $2m \times 3m$ installed in the front wall. The length and breadth of the warehouse are $12m$ and $4m$ respectively and its total height is $6m$. If half a litre of paint covers one square metre, then how many litres of paint has to be purchased by the merchant to paint the warehouse?



OR

A girl purchases a hemispherical wooden pen stand of radius $7cm$ as shown in the figure. 5 conical holes are drilled on it. If the radius of the base of each hole is $0.7cm$ and depth is $2.4cm$ then find the total surface area of the pen stand and also find the quantity of wood in it.



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