SSC PUBLIC EXAMINATIONS 2025 – 26

MATHEMATICS (GUESS PAPER)

Time: 3 Hours 15 Minutes **Max. Marks: 100**

SECTION – I **12 X 1M = 12M**

1. Explain Fundamental theorem of Arithmetic.
2. Product of zeroes of $2x^2 + 6x + m$ is – 1, then m = ( )

A) $\frac{-1}{2}$ B) – 3 C) – 2 D) -1

3. Write the general form of a quadratic polynomial.
4. Form a pair of linear equations which are dependent.
5. Match the following: ( )

p) sum of first 10 natural numbers i) 110
q) Sum of first 10 odd natural numbers ii)55
r) sum of first 10 even natural numbers iii) 100

A) p – i , q – ii , r – iii B) p – ii, q – iii, r – i C) p – iii, q – i, r – ii D) p – i, q – iii, r – ii.

6. In ΔABC and Δ PQR, if $\frac{AB}{QR} = \frac{BC}{PR} = \frac{CA}{PQ}$ then which of the following is true? ( )

A) ΔCBA ~ Δ PQR B) ΔPQR ~ Δ ABC C) ΔBCA ~ Δ PQR D) ΔPQR ~ Δ CAB

7. In a right triangle ABC if tanA = 1, then LA = --------
8. Outline a diagram to the situation: "A ladder of 10m length touches a wall at a height 5m".
9. the vertical cross section of a right circular cone is ----------
10. If P (E) = 0.05, what is the value of P (not E)?
11. *Statement I:* The line segment joining any two points on a circle is called a chord. ( )

Statement II: A line which intersects a circle at two distinct points is called secant to the circle.

A) Both of the statements are true. B) Statement I is true but statement II is false.
C) Statement I is false but statement II is true. D) Both of the statements are false

12. Generate a quadratic equation whose two roots are equal.

Section – II 8X 2M = 16M

Note: Answer all the questions, each question carries 2 marks:

13. Create a quadratic polynomial whose sum and product of the zeroes are $\frac{1}{4}$ and - 1 respectively.
14. Find the value of k, if both the roots of $2x^2 + kx + 3 = 0$ are equal.
15. State SAS criteria for similarity of triangles.
16. If tan (A – B) = $\frac{1}{\sqrt{3}}$ and tan (A + B) = $\sqrt{3}$, $0^0 < (A + B) \leq 90^0$, A>B; find angles A and B.
17. Define angle of elevation, draw a simple rough diagram.

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18. Two concentric circles are of radii 5cm and 3cm. Find the length of the chord of the larger circle which touches the smaller circle.

19. Find the volume of a right circular cone of radius 6cm and height 7cm.

20. Find the coordinates of the point A, where AB is the diameter of the circle whose centre is (2, - 3) and B is (1, 4).

SECTION - III 8X4M = 32M

Note: Answer all the questions, each question carries 4 marks:

21. "A dice is thrown once". What is the probability of getting an even number on the top face? Now create 4 such type of questions.

22. Write the formula to find the mode of a frequency distribution and explain the terms in it.

23. A pen stand is made up of wood is in the shape of a cuboid with 4 identical conical depressions are made to hold pens. The dimensions of cuboid are 15cm X 10cm X 3.5cm. The radius of each depression is 0.5cm and the depth is 1.4cm. Find the volume of the pen stand.

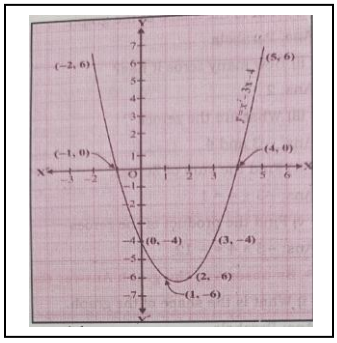
24. Find the roots of the quadratic equation $3x^2 - 4\sqrt{3}\,x + 4 = 0$

25. Write all the trigonometric ratios in terms of sec A.

26. State the formulae for the nth term and the sum of first n terms of an A.P. Then using these formulae, find the 10^{th} term and sum of first 10 terms of the A.P.: 2, 7, 12 …

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

28. By observing the graph, answer the following questions:



1). what is the name of the graph?

2) How many zeroes it has?

3).What are the zeroes?

4). Find the sum of the zeroes?

SECTION – IV 5x8M = 40M

NOTE: Answer all the questions. There is internal choice. Each question carries 8 marks.

29 (a.) Is $\sqrt{7}$ irrational? Justify your answer:

(OR)

(b). ABCD is a trapezium in which AB // DC and its diagonals intersect each other at the point O. Show that $\frac{AO}{BO} = \frac{BO}{DO}$.

30 (a). Find the coordinates of the points of trisection of line segment joining the points A (2, - 2) and B (- 7, 4)

(OR)

(b). A chord of a circle of radius 10cm subtended a right angle at its center. Find the area of corresponding: (i) minor segment (ii) major segment.

31 (a). One card is drawn from a well- shuffled deck of 52 cards. Find the probability of getting:
(i) the jack of diamond (ii) a spade (iii) the red queen (iv) a number card.

(OR)

(b). A 1.2m tall girl spots a balloon moving with the wind in a horizontal line at a height of 88.2m from the ground. The angle of elevation of the balloon from the eyes of the girl at any time is 60^0. After some time, the angle of elevation reduces to 30^0. Find the distance travelled by the balloon during the interval.

32(a). The following frequency distribution gives the monthly consumption of electricity of 68 consumers of locality. Find the median.

Monthly consumption	65 – 85	85 – 105	105 – 125	125 – 145	145 – 165	165 – 185	185 - 205
Number of consumers	4	5	13	20	14	8	4

(OR)

(b) 200 logs are stocked in the manner that is 20 logs in the bottom row, 19 logs in the next row, 18 logs in the row next to it and so on. In how many rows are the 200 logs placed and how many logs are in the top row?

33(a).Check whether the pair of linear equations x + 3y – 6 = o and 2x – 3y – 12 =0 having unique solution? If so, find the solution graphically.

(OR)

(b). Champa went to a 'sale' to purchase some pants and skirts. When her friends asked her, how many of each she had bought, she answered, "the number of skirts is 2 less than twice the number of pants purchased. Also the number of skirts is 4 less than 4 times of pants purchased". Help her friends to find how many pants and skirts Champa bought