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405 P-625 SSC-A-I-2026 (10th)

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Student Name: _____

Name of Paper: MATHEMATICS (M-II)

SSC-10th-Abbottabad-2026

Paper Date: 09-APR-26

246

Paper Code 32

Signature of Student: _____

Paper Version

Sign and Seal of Suptd _____

SEAL

سوالات

سوال نمبر کے مطابق درست جواب نمبر کا دائرہ پُر کریں۔

- If two ordered pairs $(2x, x+y)$ and $(6, 1)$ are equal then the values of x of y are: a. 3 and 1, b. 3 and -1, c. 3 and -2, d. 3 and 2
- If $A = \{2, 3, 4\}$ and $B = \{d, e, f\}$ then the number of elements in $A \times B$ are a. 6, b. 9, c. 12, d. 15
- The process to deduct lowest value from the highest value is used for finding: a. tally marks, b. range, c. class limits, d. class boundaries
- First step in constructing a histogram is: a. label the axis, b. draw the bars, c. determine the class intervals, d. determine the frequency
- The measure of the angle $\theta = 35^\circ 25' 15''$ in decimal form is: a. 35.4208° , b. 35.5042° , c. $45^\circ 30'$, d. 35.50
- If $0 < \theta < \frac{\pi}{2}$ then θ lies in: a. 1st quadrant, b. 2nd quadrant, c. 3rd quadrant, d. 4th quadrant
- The property of congruent chords in a circle is: a. they are always parallel, b. they are equidistant from the centre, c. they intersect at the centre, d. they are perpendicular to the radius
- The degree of a quadratic equation is: a. 1, b. 2, c. 3, d. 4
- The roots of the quadratic equation $2x^2 - 6x + 4 = 0$ are: a. $x = 2$ or $x = 4$, b. $x = -3$ or $x = 2$, c. $x = -3$ or $x = -2$, d. $x = 1$ or $x = 2$
- The discriminant of the quadratic equation $3x^2 - 4x + 1 = 0$ is: a. 0, b. 4, c. 7, d. 12
- Sum of roots of quadratic equation $2x^2 + 8x + 3 = 0$ is: a. 2, b. 3, c. -4, d. -6
- The equality of two ratios is called: a. ratio, b. direct variation, c. inverse variation, d. proportion
- The mean proportion of 2 and 8 is: a. 4, b. 5, c. 6, d. 16
- A rational fraction $\frac{2x^3 + 5}{x^5 + 1}$ is: a. proper fraction, b. improper fraction, c. mixed fraction, d. undefined
- If $A = N$ and $B = Z$ then $A \cap B$ is equal to: a. set of natural number, b. set of integers, c. set of rational numbers, d. sets of irrational numbers

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and pack the sheet with solved OMR sheets in roll number order

Time: 2 Hours 40 Minutes

SECTION-B

Marks: 36

1. Attempt any nine of the following short questions. Each question carries 4 marks.

- i. Solve $2x^2 - 6.2x + 8 = 0$ using quadratic formula. 1+2+1
- ii. Solve the equation $\sqrt{4x+3} = 2x+5$ 1+1+2
- iii. Examine the nature of roots of $6x^2 + x - 2 = 0$ and verify the result by solving it 2+2
Solve the equation $\frac{\sqrt{4x+3} + \sqrt{x}}{\sqrt{4x+3} - \sqrt{x}} = \frac{5}{1}$ 1+2+1
- v. Find the value of k so that the sum of the roots of the equation $3x^2 + kx - 2 = 0$ is equal to three times the product of its roots. 1+1+2
- vi. Resolve $\frac{3x+1}{(x+1)(x-3)}$ into partial fractions 1+2+1
- vii. If $X = \{1, 2, 3, 4\}$ and $Y = \{a, b, c, d\}$ then write: (i) a one-one function from X to Y
(ii) bijective function from Y to X . 2+2
- viii. Find the variance for the data: 5, 10, 15, 20, 25 1+2+1
- ix. Find the area of sector of a circle whose radius is 6 m, with central angle 90° . 1+2+1
- x. Prove that $\cos x \cdot \cot x + \sin x = \operatorname{cosec} x$ 1+2+1
- xi. If two circles with radii $2x$ cm and 4 cm respectively touches each other externally, find the value of x if the distance between their centres is 12 cm. 1+2+1
- xii. In a circle, arcs PQ and RS subtend equal angles at the centre. If the length of chord $PQ = 2x - 3$ cm and the length of chord $RS = x + 9$ cm, find the value of x . 1+2+1

SECTION-C

Marks: 24

NOTE: Attempt any three of the following questions. Each question carries 8 marks.

2. Using Apollonius' theorem, find the length of the medians of the triangle, having length of their sides $AB = 4$ cm, $BC = 8$ cm and $AC = 10$ cm. 1+3+3+1
3. Prove that perpendicular from the centre of a circle on a chord bisect it. 1+1+4+2
4. Prove that any two angles in the same segment of a circle are equal. 1+1+4+2
5. Inscribe a circle in a triangle ABC whose sides are 3 cm, 6 cm and 9 cm. 2+2+2+2