







Federal Board SSC-I Examination  
General Mathematics Model Question Paper

Time allowed: 2.40 hours

Total Marks: 60

Note: Attempt all parts from Section 'B' and all questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

**SECTION – B (Marks 36)**

Note: Attempt all parts. Each part carries (04) marks.

Q2 i. Find the continued product of  $(2x-3y)(2x+3y)(4x^2+6xy+9y^2)(4x^2-6xy+9y^2)$

**OR**

Factorize  $4x^4 - 5x^2y^2 + y^4$

ii. If  $x = \sqrt{5} + 2$  then find the value of  $x^2 - \frac{1}{x^2}$

**OR**

Simplify the expression by rationalizing the denominator:  $\sqrt{x^2 + y^2} - \frac{x^2}{y + \sqrt{x^2 + y^2}}$

iii. If  $P(x) = 3x^3 + kx - 26$  is divisible by  $(x - 2)$ , then find the value of  $k$ , if remainder is zero.

**OR**

Find the square root of  $36x^4 - 96x^3 + 76x^2 - 16x + 1$

iv. Find the HCF of  $x^3 + 27$ ,  $2x^2 - 5x - 3$ ,  $x^2 - 2x - 15$

**OR**

Find the LCM of  $x^2 - y^2$ ,  $x^4 - y^4$ ,  $x^6 - y^6$

v. Solve  $\frac{1}{2}(3+4x) \leq 6\left(\frac{1}{3} - \frac{1}{2}x\right) - \frac{1}{4}(2+10x)$

and show the solution set on Number Line.

**OR**

Solve  $\sqrt{2}x^2 + 7\sqrt{2}x + 12\sqrt{2} = 0$  by using the quadratic formula.

vi. If  $A = \begin{bmatrix} 5 & 2 \\ 2 & 1 \end{bmatrix}$ ,  $B = \begin{bmatrix} 4 & 2 \\ 3 & -1 \end{bmatrix}$  then find  $(AB)^{-1}$

**OR**

If  $A = \begin{bmatrix} -6 & 4 \\ 3 & -2 \end{bmatrix}$ , then verify that  $A.A^{-1} = I = A^{-1}.A$

vii. Draw a circle of radius  $3cm$  with center at  $O$ . Draw a chord and shade the portion showing the major arc of the circle.

**OR**

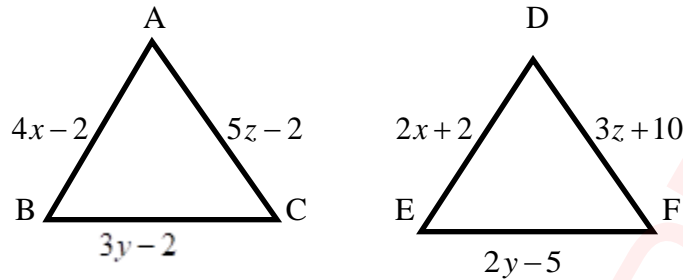
Calculate radius of a sphere of volume  $850m^3$

viii. Show that the points  $A(-1,1)$ ,  $B(3,2)$  and  $C(7,3)$  are collinear.

**OR**

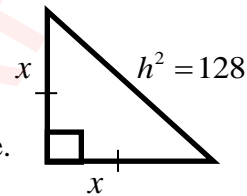
Draw a right isosceles triangle with length of equal sides 4cm and

ix. If  $\triangle ABC \cong \triangle DEF$  then find the values of  $x, y$  and  $z$ .



**OR**

If square of the hypotenuse of an isosceles right triangle is  $128\text{cm}^2$  then find the length  $x$  of each side.



### SECTION – C (Marks 24)

**Note:** Attempt all questions. Each question carries (08) marks.

Q.3 Simplify  $\frac{x^2-1}{x^2+x-2} \times \frac{x^3+8}{x^4+4x^2+16} \div \frac{x^3+x}{x^3+2x^2+4x}$

**OR**

The sum of two positive numbers is 12 and the sum of whose squares is 80. Find the numbers.

Q.4 At a carry-out pizza restaurant, an order of 6 slice pizza and 2 juice drinks costs Rs. 360. A second order of 12 slice pizza and 5 juice drinks costs Rs. 750. Use Cramer's Rule to find the cost of a pizza slice and a juice drink.

**OR**

The length and breadth of a rectangle are  $(3x+2)\text{cm}$  and  $(3x-2)\text{cm}$  respectively. Find the value of  $x$  and the perimeter if area of the rectangle is  $77\text{cm}^2$ .

Q.5 Draw medians of a triangle  $ABC$  with  $\overline{mBC} = 5\text{cm}$ ,  $m\angle B = 60^\circ$  and  $m\angle C = 30^\circ$

**OR**

Draw two intersecting circles with radii 4cm and 3cm. If their centres are 6cm apart, then draw two direct common tangents to the circles.