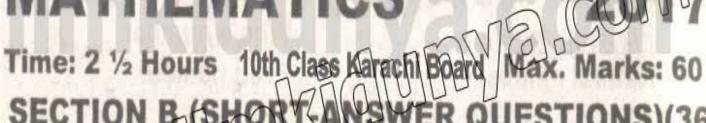
## MATHEMATICS



## SECTION B (SHORT ANSW QUESTIONS)(36)

Ematemp t 9 questions from this Section.

= {1,2,3,4} and B = {2,4,6,8}, prove that (A  $\cup$  B) = (A  $\cap$ B) U (B A A).

- $\left(\frac{x^a}{x^b}\right)^{a+b} \times \left(\frac{x^b}{x^c}\right)^{b+c} \times \left(\frac{x^c}{x^a}\right)^{c}$ 3. Simplify
- If  $x = 2 + \sqrt{3}$ , then find the value of  $x^2 + \frac{1}{\sqrt{2}}$
- Find the value of 85.7 x 2.47 logrithmetic table 6.
- Find the value of  $x^2 + y^2 + z^2$  when  $x + y + z = \sqrt{7}$  and xy +yz+zx=2Resolve into factors:  $x^2(y-z) + y^2(z-x) + z^2(x-y)$ 7.
- If two angles of a triangle are congruent, prove that the 8. sides opposite to them are also congruent.
- For what value of "q"  $4x^4 + 12x^3 + 25x^2 + 24x + q$  will be a perfect square?

  Eliminate x from the following equations:  $x + \frac{1}{x} = 2p, x + \frac{1}{x} = 2p \cdot x$ 9. 10.
- x2 x 56 = 0 by using quadratic
- $\frac{e}{a}$ , Prove that  $(a^2 + c^2 + e^2)(b^2 + d^2 + f^2) = (ab + e^2)$ b d f cd + ef)2
- If a perpendicular is drawn from the centre to a chord of 13. a circle, it bisects the chord. Prove.
- 14. Find all the trigonometric ratios of 30° then find  $A^{-1}$  and verify that  $A.A^{-1} = 1$ 15.
- 1−Sinθ Cost Prove that 16.

## 1+Sin0 Cose SECTION C (DETAILED-ANSWER QUESTIONS)(24)

Attempt 3 questions from this Section including the compulsory question No. 19.

- Factorize the following: 17.
- $6a^2 11a 10$ (iii)  $a^3 - 8b^3 + 27c^3 + 18abc$  (iv)
- Find the solution set of the following equations graphically: (Find four ordered pairs for each equation.) 18.
- correspondence of two triangles, if three sides of one triangle are congruent to the corresponding three sides of the other, the two triangles are congruent. Prove it.
- 20.(a) Find the variance of the following set of observations:
- x = 11, 13, 25, 15, 12, 18, 17, 23, 20, 16Find the factors by means of Remainder Theorem: (b)  $x^3 + 7x^2 + 14x + 8$
- Construct a triangle ABC in which mAB = 4cm, mBC = 21. 5cm, and m∠B = 60°. Draw the circum circle of the triangle and write the steps of construction.