

MATHEMATICS SSC-I

Time allowed: 2:40 Hours

Total Marks Sections B and C: 60

NOTE:- Attempt any twelve parts from Section 'B' and any three questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly. Log Table and Graph Paper will be provided to you on demand.

SECTION – B (Marks 36)

Q. 2 Attempt any TWELVE parts. All parts carry equal marks. $(12 \times 3 = 36)$

(i) Two sides of a rectangle differ by 3.5 cm. Find the dimensions of the rectangle if its perimeter is 67 cm.

(ii) Simplify and write your answer in the Form

$$a + bi. \quad \frac{1}{(2+3i)(1-i)}$$

(iii) Simplify: $\frac{(81)^n \cdot 3^5 - (3)^{4n-1}(243)}{(9^{2n})(3^3)}$

(iv) Use log tables to find the value of

$$\frac{0.678 \times 9.01}{0.0234}$$

(v) Prove that: $\log_a^n = \log_b^n \times \log_a^b$

(vi) If $x + \frac{1}{x} = 3$, then find the value of $x^3 + \frac{1}{x^3}$

(vii) Find the H.C.F. of :

$$x^3 + 3x^2 - 16x + 12, \quad x^3 + x^2 - 10x + 8$$

(viii) Solve the following inequalities.

$$-6 < \frac{x-2}{4} < 6$$