B.C.A. (Semester I) Intra Semester Assessment (ISA) Test-I September 2022

BASIC MATHEMATICS

Duration: 45 minutes   Marks: 20

Q1) Fill in the blanks.   (5)

   (a) GCD of 45 and 34 is _____.

   (b) LCM of 54 and 24 is _____.

   (c) Log 62.57 = _____.

   (d) Sum of (2 + i) and (-3 + 4i) is _____.

   (e) Roots of quadratic equation $x^2 + 5x + 6 = 0$ are ____ and ____.

Q2) Answer **ANY 3** of the following questions.   (3×5=15)

   (a) Show that $\frac{(3\times2^{n+1}) + (2^n)}{(2^{n+2}) - (2^{n-1})} = 2$

   (b) If $\log\left(\frac{x+y}{2}\right) = \frac{1}{2}(\log x + \log y)$ show that $x = y$.

   (c) Two numbers are in the ratio 2:3. If 2 is subtracted from the first and 2 is added to the second, the ratio becomes 1:2. Find the sum of numbers.

   (d) If $a^2 + b^2 = 7ab,$ prove that $[\log\frac{1}{3}(a + b) = \frac{1}{2}(\log a + \log b)]$.

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