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Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 07

BBA (Sem.–1ˢᵗ)

BUSINESS MATHEMATICS

Subject Code : BB-102 (2007 to 2011 Batch)

Paper ID : [C0202]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students has to attempt any FOUR questions.

SECTION-A

1. **Answer briefly**

   a. What do you mean by Differentiation from first principle?

   b. Define adjoint of a matrix.

   c. Write a note on unit matrix.

   d. What do you understand by difference of two sets?

   e. Define limits of a function $f(x)$.

   f. If the roots of the equation $2x^2 + 8x - m^3 = 0$ are equal. What is the value of m?

   g. The sum of two numbers is 52 and their difference is 2. Find the numbers.

   h. Which term of the progression $-1, -3, -5$ _____ is -39?

   i. What will be the number of subsets of a set containing n elements?

   j. If $xy = 1$ then what will be the value of $y^2 + dy/dx$?

SECTION-B

2. a) Define linear and quadratic equations.

   b) A firm processes x tonnes of output at a t

      $C = Rs\{1/10x^3 - 5x^2 + 10x + 5\}$.

      At what level of output will the marginal c cost attain their respective minima?

3. a) Differentiate: $e^x + 1/e^x - 1$

   b) Find dy/dx of $y = x^3(\log x)^2$

4. In a school 28 students were singers, 30 tab Out of this population of 100 students, 15 20 tabla and flute, 15 singing and flute and 5 how many students were not playing all the th

5. Solve the following simultaneous system using

   $$2x_1 - 4x_2 + 3x_3 = 3$$
   $$4x_1 - 6x_2 + 5x_3 = 2$$
   $$-2x_1 + x_2 - x_3 = 1$$

   a) Twenty books are placed at random in a that a particular Pair of books shall be:

      i) Always together.

      ii) Never together.

   b) Insert 4 arithmetic means between 4 and 3

      4,-,-,-,-,324

7. If the roots of the equation $p(q - r)x^2 +$ equal show that $2/q = 1/p + 1/r$.