Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

BBA (2011 Batch) (Sem.–1)

BUSINESS MATHEMATICS

Subject Code : BB-102

Paper ID : [C0202]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS 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. Write briefly :

a) Define intersection of sets.

b) If a, b, c, d are +ve real numbers, then $a > b, c > d \Rightarrow a + c > b + d$.

c) Solve $x^2 - 8x - 65 = 0$

d) In how many ways can a student choose 5 courses out of 9 if 2 courses are compulsory for every student?

e) Define Bi-conditional statement.

f) Evaluate $\log_3 243$.

g) Show that $\underset{x \to 2}{Lt} \dfrac{x^2 - 4}{x^2 - 2x} = 2$.

h) Differentiate $\dfrac{3x+4}{4x+5}$ *w.r.t. x*.

i) In a sequence $a_n = 4n + 3$, find 18^{th} term.

j) Give example of a matrix to show that AB = 0 even if A ≠ 0, B ≠ 0.

SECTION–B

2. a) Prove that $A \cup (B - A) = A \cup B$.

   b) Find the compound interest which would result from investing Rs 500 at 6% for four years.

3. a) Find fifth term from end in the expansion of $\left(\frac{x^3}{2} - \frac{2}{x^2}\right)^9$.

   b) In G.P. $\frac{2}{9} + \frac{1}{3} + \frac{1}{2} + ...$, which term is $\frac{81}{32}$?

4. Find the maximum and minimum value of the function $f(x) = x^3 + 15x^2 + 48x + 7$.

5. a) Solve $\log (10x + 5) - \log (x - 4) = \log 2$.

   b) Find truth table for $p \to (\sim q \vee r) \equiv (p \wedge q) \to r$.

6. How many different words containing all the letters of the word 'SOCIETY' can be formed if each word

   a) Begin with S and ends with Y.

   b) To have consonants never occur together.

7. Use Cramer's Rule to find the solution of the equations :

   $5x - 6y + 4z = 15$

   $7x + 4y - 3z = 19$

   $2x + y + 6z = 46$