

Roll No.

57002

BBA 1st Semester (Old) 2011-14

Examination – November, 2018

BUSINESS MATHEMATICS

Paper : BBA-102

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : All question of Section 'A' are compulsory. Attempt any four questions from Section 'B' selecting at least one question from each Unit.

SECTION – A

1. Briefly explain and illustrate the following :
 - (i) Equivalent sets.
 - (ii) Intersection of two sets.
 - (iii) Arithmetic mean of three numbers.
 - (iv) Find the sum of first 10 natural numbers.
 - (v) Factorial of a number.

- (vi) Difference between permutation and combination.
- (vii) Row matrix and column matrix.
- (viii) dy/dx .

SECTION - B

UNIT - I

2. If $A = \{a, b, c, d, e, f\}$, $B = \{a, e, i, o, u\}$ and $C = \{m, n, o, p, q, r, s, t, u\}$, find
- (i) $A \cup B$,
 - (ii) $A \cap (B \cup C)$,
 - (iii) $A \cup (B - C)$,
 - (iv) $C \cap (A - B)$
3. If A, B and C are three sets, prove that :
- (i) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
 - (ii) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

UNIT - II

4. (a) Show that $\left(\frac{x^b}{x^c}\right)^a \times \left(\frac{x^c}{x^a}\right)^b \times \left(\frac{x^a}{x^b}\right)^c = 1$
- (b) Find the compound interest as Rs. 1000 for 4 years at 10% rate of interest.
5. (a) Find the sum of natural number from 1 to 100, which are exactly divisible by 5.
- (b) Insert 5 geometric mean between 5 and 320.

UNIT - III

6. (a) How many 4 digit numbers can be formed using the digits 1, 2, 3, 4, 5, 6, 7. How many of them are greater than 3400.
- (b) If ${}^{2n}C_3 = {}^{2n}C_2$, find n .
7. (a) Find the middle term in the expansion of $\left(\frac{a}{x} + bx\right)^{12}$. <http://www.HaryanaPapers.com>
- (b) Find the term independent of x in the expansion of $\left(2x + \frac{1}{3x^2}\right)^9$

UNIT - IV

8. If $A = \begin{bmatrix} 2 & -3 & 1 \\ 4 & 2 & -3 \\ 1 & 0 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 2 & 1 \\ 3 & 0 & -2 \\ 2 & -3 & 1 \end{bmatrix}$ and $C = \begin{bmatrix} 3 & 1 & 2 \\ 2 & 3 & 1 \\ 1 & -2 & 3 \end{bmatrix}$ find the value of $2A + 3B - 2C$.
9. (a) Differentiate $(2x^2 + 3)^2(4x^3 + 2x)$ w.r.t x
- (b) Evaluate $\int \frac{ax^2 + bx}{2} dx$.