

UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)



Programme Name-BBA-First Semester
Programme Code- BBA-12
Course Name- Business Mathematics
Course Code-BBA 102

Maximum Marks-40

Session -2015-16,Summer
Last Date of Submission: 31st January , 2016

Section-A

Section ‘A’ contains 08 short answer type questions of 5 marks each. Learners are required to answers 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.

Discuss the following (1-8) –

1. Explain the properties of integration with the help of examples.
2. Write a note on the use of principles of differentiation in business economics.
3. What are the DE Morgan’s Laws?
4. Using Venn Diagram prove that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.
5. If $a = xy^{(p-1)}$, $b = xy^{(q-1)}$ and $c = xy^{(r-1)}$ then prove that $a^{(q-r)} \times b^{(r-p)} \times c^{(p-q)} = 1$.
6. Without using log table, solve the following:
 $\log_{727}[9^{((5/2)+(7/2))}] + \log_{727}[27^{((9/3)+(11/3)+(13/3))}] + \log_{729}[27^{((15/4)+(17/4)+(19/4)+(21/4))}]$
7. Evaluate $\int \{x^3/(x^2+8x+12)\}.dx$
8. If the square of $\begin{vmatrix} 2 & 3 \\ 4 & 5 \end{vmatrix} = \begin{vmatrix} 13 & 23 \\ 23 & x \end{vmatrix}$, calculate the value of x .

Section-B

Section ‘B’ contains 04 long answer-type questions of 10 marks each. Learners are required to answers 02 questions only.

1. Using examples explain various types of sets.
2. Answer the following questions:
 - a. Prove that $\log_2 3 \times \log_3 2 = 1$
 - b. What is the basic difference between permutations and combinations?
3. Answer the following questions:
 - a. In how many ways can the letters of the word ‘MANAGEMENT’ be rearranged so that the two ‘A’ do not appear together?
 - b. Find the sum upto ∞ terms of the Geometric Progression series,
7, (21/4), (63/16),
4. Answer the following questions:
 - a. Explain various types of Matrices.
 - b. If $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 3 \\ 0 & 0 & 2 \end{bmatrix}$ then calculate the value of $|AB|$.