



## उत्तराखंड मुक्त विश्वविद्यालय हल्द्वानी (नैनीताल)

Programme Name-BBA-First Semester

Programme Code-BBA-12

Course Name-Business Mathematics

Course Code-BBA102

Maximum Marks-40

Session -2013-14,Summer

Last Date of Submission: 15 January , 2014

### Section-A

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

Discuss the following (1-8) –

1. Define sets and elements
2. Importance of Venn diagrams
3. If  $A = \{1,2,3\}$  and  $B = \{4,5\}$  then show that  $A \times B \neq B \times A$ .
4. Which term of the AP  
49, 44, 39,.....is 9?
5. Properties of logarithms.
6. Find the 6<sup>th</sup> term of the following GP:  
3,12,48
7. How many words can be formed from the word 'TOTAL'?
8. Properties of integration.

### Section-B

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

1. a) In a recent survey of 400 students in a school, 100 were listed as smokers and 150 as chewers of gum; 75 were listed as both smokers and gum chewers. Find out how many students are neither smokers nor gum chewers.

b) Simplify  $\frac{x^{m+2n} \cdot x^{3m-8n}}{x^{5m-6n}}$

2. a) If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$  and  $B = \begin{bmatrix} 0 & 1 & 2 \\ 3 & 4 & 5 \end{bmatrix}$

Verify  $A+B = B+A$ .

b) If  $A = \begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix}$  and  $B = \begin{bmatrix} 7 & 0 \\ -2 & -3 \end{bmatrix}$

3. Solve the system of equations,

$$x + y + z = 2$$

$$x + 2y + 3z = 5$$

$$x + 3y + 6z = 11$$

$$x + 4y + 10z = 21$$

4. Integrate  $\int \frac{dx}{x + \sqrt{x^2 + x + 2}}$