



UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)
उत्तराखण्ड मुक्त विश्वविद्यालय, हल्द्वानी (नैनीताल)

MCA-11/MCA-16 2nd YEAR 3rd SEMESTER ASSIGNMENT

Last Date of Submission: 15 Dec, 2016

Course Title: Discreet Mathematics

Course Code: MCA-09

Year: 2016-17

Maximum Marks: 30/40 Marks

Section 'A'

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

1. Define complete graph and give its examples.
2. Define Tautology with an example.
3. Define a bipartite graph.
4. When is a group $(G,*)$ called abelian?
5. Define tautology and contradictions with suitable example.
6. In how many ways the letters of the word ABACUS be rearranged such that the vowels always appear together?
7. Show that a tree with n vertices has $(n-1)$ edges?
8. When a Lattice called complete?

Section 'B'

Section 'B' contains 04 long answer-type questions of 7/10 marks each. Learners are required to answers 02 questions only.

1. State and Prove De Morgan's Laws.
2. Show that every square matrix can be uniquely expressed as the sum of the symmetric and a skew symmetric matrix.
3. Explain Prim's algorithm.
4. Solve by Cramer's rule

$$x-y-2z=1$$

$$2x+y+z=2$$

$$x-3y+z=1$$