



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

MCA-16/MCA-17
2ND YEAR 3RD SEMESTER ASSIGNMENT

Session - 2017-18, Summer Last Date of Submission: 31st October 2017
Session - 2017-18, Winter Last Date of Submission: 30th April 2018

Course Title: Discrete Mathematics

Course Code: MCA-09

Maximum Marks: 30/20

Section 'A' contains 08 short answer type questions of 4/2.5 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 a graph
2. What is incidence matrix?
3. What is the product rule for counting?
4. What are the properties of an equivalence relation?
5. What is transitive relation? Give example.
6. What is simple graph? Give an example.
7. Define complete graph. Give example.
8. Define the rule of inference. Explain the different rules of inference.

Section 'B' contains 04 long answer-type questions of 7/5 marks each. Learners are required to answers 02 questions only.

1. Prove that the number of vertices of odd degree in a graph is always even.
2. Prove that a tree with n vertices has $(n-1)$ edges.
3. State Pigeonhole principle.
4. Explain different types of relation.