



UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)

MCA 1st YEAR 1st SEMESTER ASSIGNMENT*Last Date of Submission: 15 Jan.,2014***Course Title: Digital Logic****Course Code: MCA-02****Year: 2013-14****Maximum Marks: 40 Marks****Section 'A'**

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.

1. Convert the decimal number 225.225 to binary, octal and hexadecimal.
2. Given Boolean function
$$F = x y + x' y' + y' z$$
 1. Implement it with only OR & NOT gates.
 2. Implement it with only AND & NOT gates.
3. What is meant by decoder? Explain 3-to-8 line decoder with diagram and truth table
4. What are different types of flip-flops? Explain
5. What is a floating point number? What are the advantages of it?

Section 'B'

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

1. Find the complements of the following functions using De Morgan's Theorem.
 - i. $F = (A+B)'(A'+C')(B'+C)$
 - ii. $F = A'B + ABC + AB'C$
2. Write the procedure for obtaining NAND Logic implementation of a Boolean function.
3. What is Multiplexer? Explain.
4. What is combinational circuit? Explain with the help of example.