



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

BCA 1ST YEAR 1ST SEMESTER ASSIGNMENT

Last Date of Submission: 15-Jan-2015

Course Title: Computer Fundamental and Introduction to Digital Logic

Course Code: BCA-01

Year: 2014-15

Maximum Marks: 40 Marks

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.

1. Add the two BCD numbers 10000111 and 01010011.
2. What is logic gates? Explain different type of logic gates with their symbols and truth table
3. Write a short note on multiplexer.
4. Simplify the Boolean expression $F = (A + E + C) (A+ B+C)(A+E)$. Realize the simplified expression using only NAND gates
5. What is sequential circuit ? How it differ from combinational circuit?
6. What is a decoder ? Explain 3 to 8 decoder with logic diagram.
7. What is a RAM ? What are its two types ? Differentiate between them.
8. Convert SR flip-flop to JK flip-flop

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

1. What is computer? Discuss the important features of various generations of computers. Give some examples of the computers of each generation.
2. What are adders? How will you design a full adder using: (i) basic gates (ii) NOR gates
3. Convert the following:
 - a) $(101110.11)_2$ to its equivalent decimal fraction.
 - b) $(3449)_{10}$ to its octal equivalent.

4. What is CPU? What are the basic components of the CPU of a computer system?
Describe the role of each component in the functioning of a computer system.

