



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

BCA 1ST YEAR 1ST SEMESTER ASSIGNMENT

Last Date of Submission: 15/01/2016

Course Title: Computer Fundamental and Introduction to Digital Logic

Course Code: BCA-01

Year: 2015-16

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. What are combinational circuits? Explain Full Adder circuits with their circuit design and truth table.
2. What are sequential circuits? Explain any one shift registers.
3. State and prove De Morgan's theorem
4. What are Fixed Point and Floating point representation?
5. What are the different simplification techniques of Boolean algebra?
6. What is K-Map? Simplify following Boolean expressions using K-Map:
$$f(A,B,C,D)=\sum(0,2,7,8,10,15)$$
7. What is Bus? Explain different types of b uses.
8. What are the different logic gates? Explain each with suitable logic diagram and truth table.

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

1. What do you understand by a code? Explain following codes with suitable examples.
 - a. BCA
 - b. ASCII
 - c. EBCDIC
 - d. Gray code

2. **What are flip-flops? Explain following flip-flops with their transition table:**
 - a. S-R Flip Flop
 - b. J-K Flip Flop
3. Write short notes on the following
 - a. Primary memory
 - b. Secondary memory
4. Draw block diagram of computer and explain each component. What are the various generations of computers?

