CHRIST UNIVERSITY, BANGALORE-560029

End Semester Examination Sept / Oct - 2014
BSc in CME / CMS

Code : CSC131 **Max. Marks : 100**
Sub : DIGITAL COMPUTER FUNDAMENTALS AND PROGRAMMING USING C **Duration : 3Hrs**

SECTION A

Answer all the questions. **10 X 2 = 20**

1 Subtract $11100_{(2)}$ from $100101_{(2)}$ using 2's complement method.
2 What is the purpose of Boolean algebra?
3 Represent XOR gate with the help of OR, AND and NOT gates.
4 What is a half adder?
5 Write two principal functions that are performed by a shift register.
6 Name the types of programming languages.
7 What do you mean by an identifier?
8 What do you mean by entry controlled loops? Give one example.
9 Give the different conditions for recursion.
10 What is a structure member? How do you access them?

SECTION B

Answer any eight questions. **8 X 5 = 40**

11 Explain the characteristics of computer.
12 Explain the Demorgan's theorems with diagram and truth table.
13 Simplify the expression by using three variable Karnaugh map: A+BC'+A'B'C'.
14 Explain decimal -to- binary encoder with the help of a diagram.
15 Explain the working of edge triggered D-flip flop? How is it different from Gated D-Latch?
16 Write an algorithm to find the sum of digits of a number.
17 Write a note on pre increment and post increment operators.
18 Explain the different forms of an 'if' statement with suitable examples.
19 Write a note on functions with no arguments and no return values.
20 Write a note on structures.

SECTION C

Answer any two questions **2 X 10 = 20**

21 a)How to generate a Gray code? Write a note on gray code conversion. (5M)

b)Do the following conversions:

i) binary number, 111011101 to gray code (5M)

ii) gray code,1111110011 to binary number

22 Explain the following terms with respect to K-Map.

i) a pair ii) reduction of a quad iii) don't care iv) redundant group v) map rolling

23 Explain the functioning of edge triggered J-K Flip flop.

SECTION D

Answer any two questions. **2 X 10 = 20**

24 Write a program to find largest of two numbers using ternary operator.

25 Write a program to find the prime numbers between m and n using functions.

26 Write a program to print first n terms of fibonacci series.