CHRIST UNIVERSITY, BANGALORE-560029

End Semester Examination October - 2013

CMS/CME -I Semester

Code : CSC131-13   Max. Marks : 100

Sub : DIGITAL COMPUTER FUNDAMENTALS AND PROGRAMMING USING C   Duration : 3Hrs

SECTION A

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

1   Divide $1110111_{(2)}$ by $101_{(2)}$.

2   State Associative law.

3   Represent XOR gate with the help of OR, AND and NOT gates.

4   What is combinational circuit?

5   What do you mean by 'toggle'? Which flip flop gives a toggle output and when?

6   Define software.

7   What is a relational operator?Give examples.

8   What is the output of the following:

```
a)main()

{

int x=6;

switch(x)

{

default: x=x+2;

case 4: x=4;

case 5: x++;

break;

}

Printf("%d",x);

}

b) main()

{

int i;

for(i=0;i<=2;i++)

{

switch(i)

{

case 1: printf("%d",i);
```

```
case 2: printf("%d",i);

default: printf("%d",i);

}

}

}
```

9   What do you mean by call by value?
10   What is the purpose of the indirection operator?

SECTION B

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

11   Add the following binary numbers.

     a)10111111+110011   b)10101+11111101
12   Explain the laws of Boolean algebra.
13   Explain OR, EX-OR gates with diagram and truth table.
14   Explain the BCD-to- Decimal decoder.
15   What is the difference between edge triggered and pulse triggered flip flop? Explain with any timing diagram.
16   Draw a flowchart to find the Fibonacci series between 0 to N.
17   Write a note on pre increment and post increment operators.
18   Write a note on two dimensional character arrays.
19   Write a note on functions with arguments and no return values.
20   Define a structure and also draw the memory allocation for the following details:

     a) employee id.(max of 6 characters)

     b) employee name.(max of 20 characters)

     c) employee designation(max of 10 characters)

     d) employee salary(floating point number)

SECTION C

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

21   Write a note on BCD, ASCII and EBCDIC.
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 about pulse triggered Master Slave J-K Flip Flop with timing diagram .

SECTION D

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

24   Write a program to print the multiplication table of a given number.
25   Write a program to find the factorial of a number using recursion.
26   Write a program to find the roots of a quadratic equation.