OS – 238

I Semester B.A./B.Sc. Examination, October/November 2012
(Semester Scheme) (F+R)
COMPUTER SCIENCE – I
Computer Fundamentals and C Programming

Time : 3 Hours Max. Marks : 60(R)/70(F)

Instructions : *1) Repeaters have to answer Section **A**, **B** and **C** only which carries **60** marks (**Prior** to **2011-12**).*
*2) Freshers have to answer Section **A**, **B**, **C and D** which carries **70** marks (**2011-2012** and **Onwards**).*
*3) **70** marks for students of **2011-12** and **Onwards**.*
*4) **60** marks for Repeater students **Prior** to **2011-12**.*

SECTION – A

I. Answer **any 10** questions. **Each** question carries 1 mark. **(1×10=10)**

1) Define an algorithm.
2) Find the 2'S complement of $(1011011)_2$.
3) Write the truth table and logic symbol of XOR gate.
4) Define a decoder.
5) Mention any 2 types of counters.
6) Give the syntax of any 2 instruction formats.
7) What is structured programming ?
8) Differentiate between syntax error and logical error.
9) If a = 4, b = 3. Find C = a ++*6 +++ b*5+10.
10) Mention any 2 string functions.
11) What is a pointer variable ?
12) Define a macro. in C.

SECTION – B

II. Answer **any 5** questions. **Each** question carries **3** marks. **(3×5=15)**

13) Solve the following :
a) Subtract 56_{10} from 92_{10} using 1's complement.
b) Convert 2988 to hexadecimal.

P.T.O.

14) Explain multiplexer with logical diagram.

15) Differentiate between primary memory and secondary memory.

16) Explain any 3 unformatted input output functions with an example.

17) Differentiate between IF-ELSE-IF and switch statements.

18) Explain the file opening modes available in C.

19) Define structure with an example. Mention the advantage of union over a structure.

SECTION – C

III. Answer **any 5** questions. **Each** question carries **7** marks. **(7×5=35)**

20) a) Explain any 4 characteristics of a computer. **4**

b) Explain the classification of computers based on operating principle. **3**

21) Why NAND and NOR gates are called as universal gates ? Justify. **7**

22) a) Explain full adder with truth table and logical circuit. **4**

b) Deduce F(A, B, C, D) = Σ(2, 5 6, 7, 11, 13, 15) using K_{maps}. **3**

23) Explain SR flip flop with truth table and logic circuit. **7**

24) *Explain the different types of operators available in C.* **7**

25) Explain the different looping constructs with syntax and example. **7**

26) Define an array. Write a C program to find the product of 2 matrices. **7**

27) Explain the different storage classes available in C. **7**

SECTION – D
(2011-2012 and Onwards Students Only)

IV. Answer **any 1** question. **Each** question carries **10** marks. **(10×1=10)**

28) a) Explain the general structure of a CPU. **5**

b) Write a note on printers. **5**

29) a) Write a C program to find out the sin(x) using mathematical series. **5**

b) Explain call by value and call by reference with examples. **5**