Code: DE53/DC53   Subject: COMPUTER FUNDAMENTALS & C PROG.

DipIETE – ET/CS

Time: 3 Hours   **DECEMBER 2013**   **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q. 1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions, selecting TWO questions from part A and THREE questions from part B. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1   Choose the correct or the best alternative in the following: (2×10)

   a. The brain of computer system is

   (A) ALU   **(B)** Memory
   (C) Registers   **(D)** CPU

   b. The tracks on a disk which can be accessed without repositioning the R/W heads is

   (A) Surface   **(B)** Cylinder
   (C) Cluster   **(D)** Frames

   c. Which of the following is the 1's complement of 10?

   (A) 01   **(B)** 110
   (C) 111   **(D)** 10

   d. A computer program that converts assembly language to machine language is

   (A) Compiler   **(B)** Interpreter
   (C) Assembler   **(D)** Linker

   e. Which access method is used for obtaining a record from a cassette tape?

   (A) Direct   **(B)** Sequential
   (C) Random   **(D)** Indexing

   f. What will be output if you will compile and execute the following c code?
   ```
   main()
   {
   int c = --2;
   printf("c%d",c);
   }
   ```
   (A) 2   **(B)** -2
   (C) 0   **(D)** 1

g. Which bitwise operator is suitable for turning off a particular bit in a number?

   (A) && operator   **(B)** & operator
   (C) || operator   **(D)** ! operator

h. What is the similarity between a structure, union and enumeration?

   (A) All of them let you define new values
   (B) All of them let you define new data types
   (C) All of them let you define new pointers
   (D) All of them let you define new structures

i.   What does the following declaration mean?

        int (*ptr)[10]

   (A) *ptr* is array of pointers to 10 integers
   (B) *ptr* is a pointer to an array of 10 integers
   (C) *ptr* is an array of 10 integers
   (D) *ptr* is an pointer to array

j.   In C, if you pass an array as an argument to a function, what actually gets passed?

   (A) Value of elements in array
   (B) First element of the array
   (C) Base address of the array
   (D) Address of the last element of array

PART A
Answer any TWO questions. Each question carries 16 marks.

Q.2   a. Find the hexadecimal equivalent of:
         (i) $(0.5625)_{10}$
         (ii) $(0.3)_{10}$ **(2+2)**

      b. Give the difference between micro, mini and mainframe & super computers**(6)**
      c. Draw a block diagram to illustrate the basic organization of computer system and explain the function of various units.   **(6)**

Q.3   a. Discuss various types of high level languages.   **(6)**

      b. Define the various types of common services provided by the operating system.   **(6)**

      c. How Multitasking is different from multiprogramming?   **(4)**

Q.4   a. How LAN, WAN and MAN are differ from each other?   **(8)**

      b. What is the difference between internet and World Wide Web (WWW)? **(8)**

PART B
Answer any THREE questions. Each question carries 16 marks.

Q.5   a.   What is keyword and identifier? Give the rules for identifier.   **(6)**

   b.   Write about various data types of C.   **(6)**

   c.   What are the rules for + + and - - operators? Discuss briefly.   **(4)**

Q.6   a.   Describe nesting of IF.... ELSE statements with the help of example.   **(6)**

   b.   Describe the switch statement with the help of an example.   **(6)**

   c.   Give the difference between do-while and while loop.   **(4)**

Q.7   a.   Write a Program to reverse ANY given number in C.   **(6)**

   b.   Do array subscripts always start with zero?   **(4)**

   c.   How to compare two strings without using strcmp?   **(6)**

Q.8   a.   What is the need for user-defined functions?   **(4)**

   b.   Write down the advantages for using user-defined functions in 'C' language.**(4)**

   c.   Write a C program to add two integers. Make a function add to add integers and display sum in main() function.   **(8)**

Q.9   a.   What is pointer and how to use pointers in C? Also discuss about null pointers.   **(8)**

   b.   Discuss the following functions:-
   (i) getc   (ii) fscanf
   (iii) put w   (iv) fprintf   **(4×2)**