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

DiplETE – ET/CS

Time: 3 Hours   **DECEMBER-2014**   **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 hexadecimal system uses powers of

   (A) 2   **(B)** 16
   (C) 10   **(D)** 8

b. The time required for the fetching and execution of one simple machine instruction is

   (A) Delay time   **(B)** CPU cycle
   (C) Real time   **(D)** None of these

c. The section of the CPU that selects, interprets and sees to the execution of program instructions

   (A) Memory   **(B)** Register unit
   (C) Control unit   **(D)** ALU

d. Operating System is a

   (A) Application Software   **(B)** Hardware
   (C) System Software   **(D)** None of these

e. By default a real number is treated as a

   (A) float   **(B)** double
   (C) long double   **(D)** None of these

f. Is the following statement a declaration or definition?
   extern int i;

   (A) Declaration   **(B)** Definition
   (C) Function   **(D)** Error

g. The output of following C code is:
   #include<stdio.h>
   int X=40;
   int main()
   {
     int X=20;
     printf("%d\n", X);
     return 0;
   }

   (A) 40   **(B)** 20
   (C) Error   **(D)** No output

h. Which of the following cannot be checked in a switch-case statement?

   (A) Character   **(B)** Integer
   (C) Float   **(D)** Enum

i. The keyword used to transfer control from a function back to the calling
   function is

   (A) switch   **(B)** goto
   (C) goback   **(D)** return

j. A pointer is

   (A) A keyword used to create variables
   (B) A variable that stores address of an instruction
   (C) A variable that stores address of other variable
   (D) All of these

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

Q.2 a. Find the decimal equivalent of:
   (i) $(2B.C4)_{16}$ (ii) $(110.101)_2$ **(4)**

   b. What is a Computer? Why is it known as data processor? List some important
   characteristics of a Computer.   **(6)**

   c. Differentiate between the characteristics of primary and secondary storage of a
   computer system.   **(6)**

Q.3 a. Differentiate between Compiler and Interpreter. **(6)**

b. What is an Operating System? Why it is necessary for a Computer System? **(6)**

c. List various advantages and limitations of High-level languages. **(4)**

Q.4 a. What do you mean by Computer Network? List various objectives of using a Computer Network. **(8)**

b. What is Internet? List various applications areas where Internet plays an important role. **(8)**

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

Q.5 a. Define variable. List various rules to define variable in C. **(6)**

b. What is storage class specifier? Why is it used? List various storage class specifiers used in C. **(6)**

c. Write a C code that accept a character from keyboard and displays it in reverse case on screen. **(4)**

Q.6 a. Describe IF...ELSE statement with the help of flowchart and an example. **(6)**

b. Describe the conditional operator with the help of an example. **(4)**

c. Explain the use of switch statement in C with the help of flowchart. **(6)**

Q.7 a. Write a Program to compare two matrices for equality in C. **(8)**

b. Define string. Explain various string functions along with their syntax. **(8)**

Q.8 a. What is a function? Explain various types of functions used in C. **(8)**

b. Differentiate between the various parameter passing techniques used in a C function. **(8)**

Q.9 a. What is dangling pointer in C? Explain with the help of example. How it is differentiated with null pointer. **(8)**

b. Explain the concept of file in C. What are different methods of opening a file? **(8)**