

DiplETE – ET/CS (NEW SCHEME) - Code: DE53/DC53**Subject: COMPUTER FUNDAMENTALS & C PROGRAMMING****Time: 3 Hours****DECEMBER 2011****Max. Marks: 100****NOTE: There are 9 Questions in all.**

- Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.
- 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 ASCII code of the letter 'F' is

- (A) 1000101 (B) 1000110
(C) 1000100 (D) 1000111

b. The radix of binary number is

- (A) 1 (B) 3
(C) 2 (D) 4

c. Kilobytes (KB) memory storage equal to

- (A) 2^{12} (B) 2^{20}
(C) 2^{14} (D) 2^{10}

d. Central controlling part of an operating system that implements the most primitive system functions

- (A) kernel (B) shell
(C) command (D) utilities

e. Statement terminator is represented by

- (A) : (B) blank
(C) ; (D) \n

f. Which operator has the highest priority?

- (A) ++ (B) %
(C) + (D) /

- g. The minimum number of times the while loop is executed is
- (A) 0 (B) 1
(C) 2 (D) cannot be predicted
- h. Two dimensional array elements are store in
- (A) Column major order (B) row major order
(C) both (A) & (B) (D) random order
- i. The parameters passing mechanism used in 'C' is
- (A) call by reference (B) call by name
(C) call by value (D) both (A) & (B)
- j. The pointers can be used to achieve
- (A) call by function (B) call by reference
(C) call by name (D) call by procedure

PART A

Answer any TWO questions. Each question carries 16 marks.

- Q.2** a. What is an algorithm? Write an algorithm to find the average number of vowels in a passage. (6)
- b. Convert the following numbers into binary numbers
- (i) $(87.75)_{10}$
(ii) $(AF1.D4)_{16}$
(iii) $(754.51)_8$ (6)
- c. Convert binary number $(110111101.111)_2$ into hexadecimal number and decimal number. (4)
- Q.3** a. What is an OMR device? Explain the technique used by it for recognition of marks. (6)
- b. What are advantages and limitations of high level languages? (6)
- c. Why has UNIX become a popular operating system? (4)
- Q.4** a. Define an ideal microcomputer. What is the purpose of control bus in a microcomputer? (4)
- b. What is an Internet? What are the uses of the Internet? (6)
- c. What is wireless LAN? Explain why it is needed and how it is used? (6)

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

- Q.5** a. What is an operator? Explain briefly different operators used in 'C'. (8)
- b. How many types of assignments are possible in C? (2)
- c. Given i an integer, j a float & k a character type variables. Write a program using a single *printf()* function, to print the values of these variables. (4)
- d. How do you receive data items through keyboard? (2)
- Q.6** a. Write down the syntax of *do-while* loop. (3)
- b. Differentiate between a *while* loop and *do-while* loop. (3)
- c. Write a program that displays all the prime numbers from 1 to 100. (6)
- d. What is the purpose of continue statement in loops? Explain with example. (4)
- Q.7** a. Define an array. How are the two-dimensional array elements stored in memory? (4)
- b. Write a program that converts an uppercase string into lower case string. (8)
- c. Explain the *strcpy()* function with example. (4)
- Q.8** a. What is a function definition? Differentiate between function definition and function declaration. (4)
- b. Write a recursive function to find factorial of a given number n. (6)
- c. Differentiate assembly language and higher level language. (4)
- d. What is the purpose of *main()* function? (2)
- Q.9** a. What is a pointer value? Compare the value returned by & and *. (4)
- b. Write a program that display the elements of a two-dimensional array using pointers. (8)
- c. What is a file? How is *fopen()* used? (4)