ROLL NO. _____

Code: DE53/DC53/ DE103/DC103
Subject: COMPUTER FUNDAMENTALS & C PROGRAMMING

DipIETE – ET/CS (Current & New Scheme)

Time: 3 Hours **DECEMBER 2015** **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. 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. An identifier must not contain any
(A) under score **(B)** special character
(C) digit **(D)** uppercase character

b. Which of the following is considered as a token in the C language?
(A) keyword **(B)** identifier
(C) operator **(D)** all of these

c. How many elements can be added or removed from an array at a time?
(A) 2 **(B)** 1
(C) 4 **(D)** 6

d. When a function does not return any value, its return type is
(A) void **(B)** null
(C) zero **(D)** Both **(A)**&**(B)**

e. (a = = 0) is true, if
(A) a = 1 **(B)** a = –1
(C) a = 0 **(D)** a = 2

f. Which operator in C is used to act upon only one operand, to produce a new value?
(A) Binary **(B)** Unary
(C) Conditional **(D)** Logical

g. A variable name must not contain a
(A) comma **(B)** blank space
(C) keyword **(D)** all of these

h. A string constant is a sequence of characters enclosed within a pair of
(A) Angle brackets **(B)** Parentheses
(C) Double quotes **(D)** Single quotes

i. All the units of a computer system are controlled by the CPU
(A) FALSE **(B)** TRUE

j. Which operator considers operands as string of bits and perform bit operations on them?

(A) ! **(B)** %
(C) && **(D)** &

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Write the basic characteristics of an algorithm. **(5)**

b. Convert the following: **(6)**
(i) $(36)_{10}$ to binary
(ii) $(23)_{10}$ to Hexadecimal
(iii) $(D6C1)_{16}$ to decimal

c. Write the flow chart to pick the highest marks. **(5)**

Q.3 a. Write a brief note on categories of keys present on a standard keyboard. **(5)**

b. What is an assembler? Mention the main disadvantages of assembly language. **(5)**

c. Write the steps involved in translation of high level language to machine language with the help of block diagram. **(6)**

Q.4 a. Explain the internal structure of a microprocessor. **(10)**

b. Explain the following: **(6)**
(i) Electronic mail
(ii) File transfer
(iii) WWW

Q.5 a. Write the rules which are to be following while defining an identifier. **(5)**

b. With an example, explain different Relational operators, Logical operators & Bitwise operators used in C. **(9)**

c. Evaluate the following expression using rules of evaluation.
X = 9 – 12/3 + 3 * 2 – 1 **(2)**

Q.6 a. Explain nesting of IF...ELSE statement with an example. **(10)**

b. Differentiate between while statement and do-while statement. **(6)**

Q.7 a. Write a program to print multiplication table using two-dimensional array. **(8)**

b. Explain different string handing functions. **(8)**

Q.8 a. What is function prototype? Explain with an example. **(6)**

b. List out different categories of function, explain any two categories in detail. **(10)**

Q.9 a. What is a pointer variable? Write a program using pointers to compute the sum of all elements stored in an array. **(6)**

b. How to define a file? Explain how open operation is performed on a file. **(10)**