Code: DE53/DC53   **Subject: COMPUTER FUNDAMENTALS &**

DipIETE – ET/CS (NEW SCHEME)

Time: 3 Hours | **JUNE 2012** | **Max. Marks: 10**

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. Database Management should:
      (1)   be possible to store, access & maintain the large size of data
      (2)   Permit data storage in integrated fashion by fragmenting in different application which control redundant data
      (3)   Have a central repository with data description at both logical & physical levels

      (A) 1,2   **(B)** 1,3
      (C) 2,3   **(D)** 1,2,3

    b. Unprocessed facts and figures are called

      (A) Information   **(B)** Data
      (C) Knowledge   **(D)** None of the above

    c. The type of a function/procedure/module is determined by

      (A) Its arguments   **(B)** The value returned
      (C) Its name   **(D)** None of the above

    d. 'C' is a

      (A) Procedure oriented programming language
      (B) Object oriented programming language
      (C) Machine language
      (D) None of the above

    e. Which of the following is a valid octal constant?

      (A) 32   **(B)** 032
      (C) 049   **(D)** 0×49

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f. What is the output of
   int z, x=5,y=-10,a=4,b=2;
   z = x++ - --y * b / a;

   (A) 5   **(B)** 6
   (C) 10   **(D)** 11

g. The role of IP is to

   (A) Link the packets
   (B) Put destination addressing information on packets
   (C) Inform the packets
   (D) Collect the packets

h. char ** array [12][12][12];
   Consider array, defined above. Which one of the following definitions and
   initializations of p is valid?

   (A) char ** (* p) [12][12] = array;
   (B) char ***** p = array;
   (C) char * (* p) [12][12][12] = array;
   (D) const char ** p [12][12][12] = array;

i. Which of the following devices can be used to directly input printed text?

   (A) OCR   **(B)** OMR
   (C) MICR   **(D)** None of the above

j. Operating system is

   (A) A collection of hardware components
   (B) A collection of software routines
   (C) A collection of input-output devices
   (D) none of the above

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

Q.2 a. Give the architectural diagram of a computer. Explain the role of a control
         unit.   **(6)**

         b. What do you understand by loading and linking of a program?   **(4)**

         c. Convert (10000000) from octal to binary.   **(2)**

         d. Define the terms: microprocessor and microcontroller. Give examples. **(4)**

Q.3 a. Explain the functioning of a laser printer.   **(6)**

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b. How does an Input/Output Device and its Interface work? Explain.

c. Differentiate between an assembly language and a high level language.   **(4)**

Q.4 a. Differentiate between registers, cache and primary memory.   **(4)**

b. What is World Wide Web? What are the basic requirements of connecting the
computer to the internet?   **(4)**

c. Write a brief note on – Data Bus and Address Bus.   **(4)**

d. What is need for computer communication networks? Explain.   **(4)**

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

Q.5 a. Write a 'C' program to compute the following series:
$(x) + (x+2) +(x+4)+(x+ 6) +$…….for a total of n terms.
Where n and x is to be accepted by the user   **(6)**

b. Write a note on
(i) Logical operators
(ii) Bitwise operators   **(8)**

c. What is the output of   **(2)**

```
char* myFunc (char *ptr)
{
 ptr += 3;
 return (ptr);
}
int main()
{
 char *x, *y;
 x = "HELLO";
 y = myFunc (x);
 printf ("y = %s \n", y);
 return 0;
}
```

Q.6 a. Write a program using if-then-else to check whether the entered 5 digit number is
a Palindrome or not.   **(6)**

b. Write a program to print the first five Fibonacci numbers   **(4)**

c. Differentiate between break, continue and a goto statement. Give suitable
examples.   **(6)**

Q.7 a. How two-dimensional arrays are declared and initialized? Explain by giving
suitable example.   **(4)**

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b. Develop a flowchart and then write a 'C' program to sort strings passed to the program through the command line arguments. Also display the sorted strings. **(6)**

c. Write a C program to enter 2 matrices A and B of order m and n respectively and print the sum and difference of the two matrices (A+B) and (A-B)   **(6)**

Q.8 a. Write a function in 'C' to find the factorial of a number.   **(5)**

b. Differentiate between a zero argument function and a parameterized function. **(3)**

c. Give the syntax of getch () and gets (). Give examples also.   **(4)**

d. Differentiate between a subroutine and a function with examples.   **(4)**

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

b. Discuss how following functions are used in files
fopen(), getc(), putc(), fclose()   **(4)**

c. What is a pointer? What is an array of pointers? How is an array of pointer declared?   **(6)**