

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

DiplETE – ET/CS (Current & New Scheme)

Time: 3 Hours

JUNE 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, 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)

- GB stands for
 - Giga Bytes
 - 1000 MB
 - 1000000KB
 - All of the three
- Main Memory is
 - Internal Memory
 - External Memory
 - Secondary Storage
 - Flash RAM
- Which of the following is not a computer?
 - Any mobile phone
 - Aakash Tablet
 - Ubislate
 - Laptop
- USB stands for
 - Universal Serial Bus
 - Unique Serial Bus
 - Universal Sequential Bus
 - Unique Sequential Bus
- Which of the following is not an Operating System?
 - DOS
 - XP Home
 - Android
 - MSOffice
- Which of the following is not correct? A for loop in C language c
 - Nested
 - Without any counter variable
 - With at least one counter variable
 - With one or more than one counter variable

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- g. C Programming language is NOT
- (A) Format free
 - (B) Case sensitive
 - (C) Functional
 - (D) Unstructured
- h. Which of the following is not an allowed operation on x if x is defined an int type variable?
- (A) $x += 4$
 - (B) $x++$
 - (C) $--x$
 - (D) $x+$
- i. If `int A[40]` is defined in a C program, then which of the following is not true?
- (A) `A[40]` is valid reference
 - (B) A is a constant pointer
 - (C) Size of A is of 80 bytes
 - (D) A can be passed as parameter to a function
- j. A new data type in C language is created using which of the keywords
- (A) `typedef`
 - (B) `struct`
 - (C) `enum`
 - (D) `union`

PART A

Answer any TWO questions. Each question carries 16 marks.

- Q.2**
- a. Define algorithm and explain it with a suitable example. (6)
 - b. Convert $(12.25)_{10}$ into a binary number. (4)
 - c. What are the different ways in which a character is represented? (6)
- Q.3**
- a. Explain the function of an optical mouse? (5)
 - b. What are the major services provided by DOS? (5)
 - c. What are the different phases in compilation of a program? (6)
- Q.4**
- a. What are the essential components of a micro-computer? What is the role of control unit? (4+4)
 - b. How does an internet differ from intranet? (4)
 - c. What is W3C Protocol? (4)

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

- Q.5** a. What is the role of main() function in a C program? Can we develop a C program without a main() function? (8)
- b. What is format specifier in a printf() statement of C language? Differentiate between %g and %e with a suitable example. (8)
- Q.6** a. Taking a suitable example, explain the function of 'ternary' operator. How can you write a ternary expression using if..else statement? (8)
- b. Find the syntax error in the following program: (8)
- ```
Main()
{
 int x,
 float y;
 int long z, w;

 y ++; w = ++y;
 printf (x, y, z, w)
}
```
- Q.7** a. Define one-dimensional array? How arrays can be initialized at compile time and at run-time? Explain. (2+6)
- b. Write a function to compare two strings x and y. The function should return '0' if x and y are equal, '-1' if x is less than y and "1" if x is greater than y. (8)
- Q.8** a. Define the following: (2×4)
- |                       |                        |
|-----------------------|------------------------|
| (i) Local variable    | (ii) Global variable   |
| (iii) Static variable | (iv) External variable |
- b. Write a function to determine square of sum of two integers and if the square has digit 1 at its unit place then the function returns 5 else it returns 7. (8)
- Q.9** a. Differentiate between a pointer and an array. (8)
- b. What is a malloc( ) function and how is it different from calloc()?(4)
- c. Consider the following declaration and justify which of the followings are correct?  
int x, \*y, z[30];
- |              |             |
|--------------|-------------|
| (i) x = z    | (ii) y = z; |
| (iii) z = x; | (iv) y = x; |
- (4)