

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 214103

Roll No.

M.C.A

(SEM. I) THEORY EXAM. 2015-16

COMPUTER CONCEPTS AND
PROGRAMMING IN C

[Time:3 Hours]

[Total Marks:100]

Note: Attempt questions from all Sections as per directions.

SECTION-A

1. Attempt **all** parts. Write answer in brief. (2x10=20)
 - (a) Compare and contrast compilers and interpreters.
 - (b) Differentiate between Source Code and Object Code.
 - (c) What is the difference between Call by Value and Call by Reference?
 - (d) What does the format %10.2 mean when included in a print of statement?

- (e) What are header files? What are the uses of header files in C programming?
- (f) What are variables? In what way they are different from constants?
- (g) What is the advantage of an array over individual variables?
- (h) How do you declare a variable that will hold string values?
- (i) What are preprocessor directives?
- (j) What do you mean by structure? Give example.

SECTION-B

Attempt **any five** questions from this section. (10x5=50)

- 2. (a) What is an operating system? What are the various categories of operating systems? (5)
- (b) Differentiate memory units on the basis of Primary memory and Secondary memory. (5)
- 3. (a) Define algorithm. Write an algorithm to find the factors of a given number. (5)
- (b) Describe the structure of a C Program. (5)

4. Explain the following loop and control structures with examples:

i) while statement

ii) if else ladder statement

iii) continue statement (4+3+3)

5. What is function declaration? What are the places in a program where a function declaration can be done? Is prototype declaration essential? Give reason. (3+4+3)

6. (a) What is recursion? Write a C program to calculate x^y using recursion where values of X and Y are entered through keyboard. Do not use pow() function. (2+4)

(b) Write a function 'prime' that returns 1 if its argument is a prime number and returns zero otherwise. (4)

7. (a) What are the benefits of using pointers in C programming language? (5)

(b) What are the different rules to be followed when performing operations on pointer variables? (5)

8. Write a program that accepts two strings str 1 and str 2 as arguments and finds which of the two is alphabetically greater (without using the library functions). The function should return 1 if str1 is greater than str2, 0 if str1 is equal to str2, and -1 if str1 is smaller than str2. (10)
9. (a) Discuss the fundamental features of Object Oriented Programming? (5)
- (b) Explain the term Polymorphism? What are the different forms of Polymorphism? (5)

SECTION-C

Attempt **any two** questions from this section. (15x2=30)

10. (a) Given the values of the variable x, y and z, write a program in 'C' to rotate their values such that x has the value of y, y has the value of z, and z has the value of x. (4)
- (b) What is the use of bitwise operators? Describe any two bitwise operators with example. (5)

(c) Explain the following with the help of an example:

i) Comma operator (2x3=6)

ii) sizeof operator

11. (a) Write a C program to input N numbers (integer or real) and stores them in an array. Conduct a linear search for a given key number and report success or failure in the form of a suitable message. (5)

(b) A C program contains the following declaration.

(5x2=10)

static int x[8] = {10,20,30,40,50,60,70,80};

(i) What is the meaning of x?

(ii) What is the meaning of (x + 2)?

(iii) What is the value of *x?

(iv) What is the value of (*x + 2)?

(v) What is the value of *(x + 2)?

12. (a) Using multidimensional array, write a program in C to sort a list of names in alphabetical order. (8)

- (b) A file named DATA contains a series of integer numbers. Write a program to read these numbers and then write all 'odd' numbers to a file to be called ODD and all 'even' numbers to a file to be called EVEN. (7)

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