C Sample Paper

Answer All Questions **Time: 03Hrs**

1.

A. Write the outputs of each of the following expression.
Note: p , q , r are integer variables and initial value of p is 10 and q is 3

a) r=p++ + q ++;
printf("%d",r);

b) r=p-- % q;
printf("%d",r);

c) r= --p / --q;
printf("%d",r);

d) r = ++p * q ++;
printf("%d",r);

(4 marks)

B. Allow the user to input 2 integer values x and y. Program should calculate and display power as the output.

E.g. If user input x=5 and y=3 system will display output (x^y) as 125

(6 marks)

C. Answer the following:

a) What is the general format of a 'for loop', on which occasions you can use a 'for loop'?
b) Write a single printf statement to display the values of an integer X and float variable Y.
c) Declare and assign values for four different variables with four different data types.
d) What are the assignment operators and when we can use them?
e) Explain the general format and the use of a 'switch' conditional structure.

(2 x 5 = 10 marks)

2.

A. In C language functions can be written in four different ways. Use **adding 2 numbers (Calculating the sum)** as an example and write four different functions to explain the behavior and use four different function types. (Function and the main method)

(8 marks)

B. Create a function to provide three integers as parameters to a function and find and return the highest number. Input 3 numbers in the main function, call the function and display the highest number.

(6 marks)

C. Compare and contrast the differences between 'recursion' vs. 'iteration'. You can use a sample program to explain the answer.

(6 marks)

3.

A. Write a single C program to perform the following tasks;

I. Input 10 float values and store them in an array
(4 marks)

II. Display the values of the above array
(4 marks)

III. Find and display the minimum value
(4 marks)

B. Write a C program to declare a multi-dimensional array with the size of 3 x 4. Input values to the array and display the average value.
(8 marks)