BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – BCA-Hons-2023
Course Name – Problem Solving Methodologies
Course Code - VAC00012
(Semester I)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Array subscripts in C always start at...identify
a) -1
b) 1
c) 0
d) Value provided by the user

(ii) If you don't initialize a static array, what will be the element set to?
a) Zero
b) A floating-point
c) An undetermined value
d) None of these.

(iii) Array is an example of _____ type memory allocation. Identify the correct answer
a) Compile time
b) Run time
c) Both A and B
d) None of the mentioned

(iv) When using a function in C, discuss how are arguments passed by default?
a) By value
b) By Reference
c) By pointer
d) By constant reference

(v) Evaluate the value of z, using z = x++%5 + ++ x+ 1 statement where value of x is 9
a) 6
b) 16
c) 5
d) 0

(vi) Which header file should be included to use the 'printf' and 'scanf' functions in C?
a) < input.h >
b) < output.h >
c) < stlib.h >
d) < stdio.h >

(vii) In C Language, what is the purpose of the 'break' statement in a 'switch' Statement?
a) To exit the program
b) To skip the current iteration of a loop
c) To exit the 'switch' statement
d) To continue to the next case label

(viii) Which of the following is NOT a valid way to initialize an array in C?
a) int arr[] = {1, 2, 3};
b) int arr[3] = {1, 2, 3};
c) int arr[3];
d) int arr[3] = {1};

(ix) What is the output of the following code snippet? int x = 5; int y = 10; printf("%d", x > y ? x : y);

a) Code will not compile
b) 5
c) 10
d) 15

(x) What is the output of the following code? int x = 5; int y = x++; printf("%d %d", x, y);

a) 66
b) 65
c) 45
d) 67

(xi) What does the 'printf' function do in C?

a) Read input from the user
b) Print output to the console
c) Perform mathematical calculations
d) Declare variables

(xii) Shiftting the binary value of a number to the left can be achieved by which operator:

a) Shift Operator
b) Shift side Operator
c) Left Shift Operator
d) Right Shift Operaor

(xiii) What is exit loop often called as

a) for loop
b) while loop
c) do-while loop
d) None as such present

(xiv) Step by step instructions written to solve any problem is called

a) pseudocode
b) assembler
c) algorithm
d) class

(xv) A function which calls itself is called a ___ function.

a) Self Function
b) Auto Function
c) Recursive Function
d) Static Function

Group-B
(Short Answer Type Questions)

3 x 5=15

2. Develop a program in C to find the largest and smallest elements in an array. (3)
3. What is the difference between the = symbol and == symbol? (3)
4. What is the difference between ++a and a++? (3)
5. What is the main difference between the Compiler and the Interpreter? (3)
6. Write a C program to swap two numbers without using a third variable. (3)

OR

Write a C program to check whether a number is prime or not. (3)

Group-C
(Long Answer Type Questions)

5 x 6=30

7. What is a block diagram of a computer ? (5)
8. Develop a C program to find the largest and smallest number in an array of integers. The array and its size are given as input to the program. (5)
9. Differentiate between 'call by value' and 'call by reference' in C functions. (5)
10. Describe the 'switch' statement in C, and provide an example (5)
11. Difference the local and global variables in C. (5)
12. Differentiate between 'while' and 'for' loops in C. (5)

OR

Differenciate between '&& 'and '&' (5)

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