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BCAN 12101

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

PAPER ID : 51107 Roll No. [redacted]

BCA Examination 2023-24

(Even Semester)

PROGRAMMING IN C

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : 8×1=8

   (a) Explain algorithm.

   (b) Draw a flowchart to find out greatest of two numbers.

   (c) Give run time initialization of a single dimension array.

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(d) What will be the output of the following C code :

```
#include <stdio.h>
int main( )
{
    int a = 1, b = 1, c;
    c = a++ + b;
    printf ("%d %d %d", a, b, c);
}
```

(e) Define enum.

(f) Give the difference between structure and union.

(g) Give syntax for fprintf and fscanf functions.

(h) Write a fseek function to go to the beginning of a file.

SECTION – B

2. Attempt any two parts of the following : 2×6=12

(a) Explain the difference between top down and bottom-up programming approaches.

(b) Write a C program for binary search.

(c) What are storage classes? Explain the different types of storage classes.

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(d) Differentiate between the following :

(i) getc and getchar

(ii) fprintf and printf

SECTION – C

Note :– Attempt all questions. Attempt any two parts from each questions. 8×5=40

3. (a) Explain the difference between while and do-while loop.

(b) Explain the difference break; continue; goto statements.

(c) Write a program in C to display the first 'n' terms of the Fibonacci series.

4. (a) Give an array, arr [1.....10] [1.....15] with base value 100 and the sizeof each element is 1 byte in memory. Find the address of arr [8] [6] with the help of row-major order.

(b) Sort the following numbers using Bubble sort :

7 4 1 6 2 3

(c) Write a program in C to compare two strings without using string library functions.

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5. (a) Differentiate between call by value and call by reference of a function.

(b) What will be the output of the following :

(i)
```
#include<stdio.h>
int main( )
{
    int x = 10;
    int *y, **z ;
    y = &x;
    z = &y;
    printf("x = %d, y = %d, z = %d\n",
                                x, *y, **z);
    return 0;
}
```

(ii)
```
#include<stdio.h>
int main( )
{
    int a = 5;
    int *ptr ;
    ptr = &a;
    *ptr = *ptr * 3;
    printf("%d", a);
    return 0;
}
```

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(c) Create a structure called "student" with members name, age and total marks. Write a C program to input data for two students, display their information and find the average of total marks.

6. (a) Write program to copy the contents of one file into another.

(b) Write a nested macro that gives the minimum of three values.

(c) What are command line arguments? Explain.

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