Printed Page:- 05 **Subject Code:- ACSBS0103**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: I - CARRY OVER THEORY EXAMINATION - AUGUST 2023

Subject: Fundamentals of Computer Science

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* **three Sections -A, B, & C.** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION A **20**

1. Attempt all parts:-

1-a. Which of the following is the symbolic language? [CO1] 1

(a) machine language

(b) C

(c) Assembly language

(d) All of these

1-b. 1

What will be the output? [CO1]

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

(a) a = 1, b = 1

(b) a = 2, b = 1

(c) a = 1, b = 2

(d) a = 2, b = 2

1-c. How many times is a do while loop guaranteed to loop? [CO2] 1

(a) Variable

(b) 0

(c) Infinitely

(d) 1

1-d. What is output of below program? [CO2] 1

```
int main()
{
int i;
for(i=0; i<5; ++i++)
{
printf("Hello");
}
return 0;
}
```

(a) Hello is printed 5 times

(b) Compilation Error

(c) Hello is printed 2 times

(d) Hello is printed 3 times

1-e. What error would the following function give on compilation ? [CO3] 1

```
f(int a,int b)
{
int a;
a = 20;
return a;
}
```

(a) Missing parentheses in return statement

(b) Function should be define as int f(int a,int b)

(c) Redeclaration of a

(d) No error

1-f. Choose correct statement about Functions in C Language (CO3) 1

(a) A Function is a group of c statements which can be reused any number of times

(b) Every Function has a return type

(c) Every Function may no may not return a value

(d) All the above

1-g. What happens when you try to access an Array variable outside its Size.? [CO4] 1

(a) Compiler error is thrown

(b) 0 value will be returned

(c) 1 value will be returned

(d) Some garbage value will be returned.

1-h. What is actually passed if you pass a structure variable to a function? [CO4] 1

(a) Copy of structure variable

(b) Reference of structure variable

(c) Starting address of structure variable

(d) Ending address of structure variable

1-i. Prior to using a pointer variable it should be (CO5) 1

(a) Declared

(b) Initialized

(c) Both declared and initalized

(d) None of these

1-j. Which type of files can't be opened using fopen()? [CO5] 1

(a) .txt

(b) .bin

(c) .c

(d) None of the mentioned

2. Attempt all parts:-

2.a. Write different types of operators used in C. [CO1] 2

2.b. Write the differences between nested if( ) statement and switch( ) statement [CO2] 2

2.c. Why we use functions in C language? Give an example. [CO3] 2

2.d. How to declare an array in C? [CO4] 2

2.e. Why the function stdin() is used in file handling? [CO5] 2

SECTION B 30

3. Answer any five of the following:-

3-a. Define Algorithm and its properties. Write down an algorithm to swap two numbers (CO1) 6

3-b. Explain Syntax error, logical error and Runtime error with suitable examples. [CO1] 6

3-c. Draw the following patten in C [CO2] 6

```
*
**
***
****
*****
```

3-d. Write C Program to Check whether a given Number is Positive or Negative. [CO2] 6

3.e. Write a C program to find factorial of a given number. [CO3] 6

3.f. Write a C program to read and display a 3 by 3 matrix. [CO4] 6

3.g. Define Preprocess Directives? List down various preprocessor directive along with their syntax [CO5] 6

SECTION C 50

4. Answer any one of the following:-

4-a. Write an algorithm and draw the flow chart to display first N natural number? [CO1] 10

4-b. Write an algorithm and draw the flow chart to find the sum of digits of a given number? [CO1] 10

5. Answer any one of the following:-

5-a. What is Structured programming approach? Highlight the advantages and disadvantages of structured programming. [CO2] 10

5-b. Discuss the while loop. Write a C Program to Display Fibonacci Series Using While Loop . [CO2] 10

6. Answer any one of the following:-

6-a. Write a C program to print all natural numbers between 1 to n using recursion. [CO3] 10

6-b. Write C function declaration, function call and definition with example program. [CO3] 10

7. Answer any <u>one</u> of the following:-

7-a.	Write a C program to eliminate multiple spaces from a sentence and make it single . [CO4]	10
7-b.	Explain the row major and column major memory representation of array. Also mention how we can compute the address of an element in each case. [CO4]	10

8. Answer any <u>one</u> of the following:-

8-a.	Explain the following functions in file operations [CO5] (i) getw() (ii) putw() (iii) fscanf() (iv) fprintf()	10
8-b.	Explain the difference between gets() and scanf() function in detail with the help of suitable example. [CO5]	10