Printed Page:- 04 **Subject Code:- ACSE0201**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: II - THEORY EXAMINATION - (2023 -2024)

Subject: Programming for Problem Solving using C

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 one is the result of the output given by a computer (CO1) 1

(a) Data
(b) Instruction
(c) Information
(d) Excursion

1-b. Which of the following are components of Central Processing Unit (CPU)? (CO1) 1

(a) Arithmetic logic unit, Mouse
(b) Arithmetic logic unit, Control unit
(c) Arithmetic logic unit, Integrated Circuits
(d) Control Unit, Monitor

1-c. What is the size of an int data type? (CO2) 1

(a) 4 Bytes
(b) 8 Bytes
(c) Depends on the system/compiler
(d) Cannot be determined

1-d. Which is correct with respect to size of the data types? (CO2) 1

(a) char > int > float

(b) int > char > float

(c) char < int < double

(d) double > char > int

1-e. "continue" statement is used to (CO3) 1

(a) continue to the next line of code

(b) debug a program

(c) stop the current iteration and begin the next iteration from the beginning of the loop

(d) None of the above

1-f. "break" is used to (CO3) 1

(a) exit from a program

(b) exit from the current loop

(c) Both of the above

(d) None of the above

1-g. Which keyword can be used for coming out of recursion? (CO4) 1

(a) break

(b) return

(c) exit

(d) both break and return

1-h. Which of the following is true about return type of functions in C? (CO4) 1

(a) Functions can return any type

(b) Functions can return any type except array and functions

(c) Functions can return any type except array, functions and union

(d) Functions can return any type except array, functions, function pointer and union

1-i. Which of the following true about FILE *fp (CO5) 1

(a) FILE is a keyword in C for representing files and fp is a variable of FILE type.

(b) FILE is a stream

(c) FILE is a buffered stream

(d) FILE is a structure and fp is a pointer to the structure of FILE type

1-j. The first and second arguments of fopen() are (CO5) 1

(a) A character string containing the name of the file & the second argument is the mode

(b) A character string containing the name of the user & the second argument is the mode

(c) A character string containing file pointer & the second argument is the mode

(d) None of the mentioned

2. Attempt all parts:-

2.a. Define computer. (CO1) 2

2.b. What is keyword? Can these be used as an identifier? (CO2) 2

2.c.	What is the syntax of for loop? (CO3)	2
2.d.	what is the advantage of using function? (CO4)	2
2.e.	What is Embedded System. (CO5)	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	What are different characteristics of an algorithm? (CO1)	6
3-b.	What are the various applications of computer? (CO1)	6
3-c.	Define keyword. explain with example. (CO2)	6
3-d.	Write a program to swap the values of two variables without using third variable. (CO2)	6
3.e.	Differentiate between while and do-while loop with help of a program. (CO3)	6
3.f.	Write a function that returns smallest of three numbers. (CO4)	6
3.g.	What are various file opening modes in C. (CO5)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Discuss the major components of a digital computer with suitable block diagram. Also discuss the function of each component. (CO1)	10
4-b.	Write an algorithm and draw a flowchart to check if a number is positive, negative or equal to zero. (CO1)	10

5. Answer any one of the following:-

5-a.	What are operators? Mention different types of operators in C. (CO2)	10
5-b.	Describe rules for the nomenclature of a variable in C. (CO2)	10

6. Answer any one of the following:-

6-a.	What are different conditional statements in C programming. Explain with proper example of each. (CO3)	10
6-b.	WAP that accepts marks of five subjects and finds percentage and prints grades according to the following criteria: (CO3) Between 90-100%----------Print 'A' 80-90%----------Print 'B' 60-80%----------Print 'C' Below 60%----------Print 'D'	10

7. Answer any one of the following:-

7-a.	Define function. Write the advantages of using function. Explain the classification of functions. (CO4)	10
7-b.	Write a program to calculate factorial of a number using function. (CO4)	10

8. Answer any one of the following:-

8-a.	Write a program to copy the contents of one file into another file. (CO5)	10

8-b. Write a program to count number of vowels in a text file. (CO5) 10