INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER-I

B.Tech II Semester End Examinations, January–2023

Regulations: IARE - UG 20

Programming for Problem Solving using C Laboratory
COMPUTER SCIENCE AND ENGINEERING (cyber security)

Time: 3 hour   Maximum Marks: 70

Answer any ONE Question from the following
All parts of the question must be answered in one place only

1. (a) What will be the output of following program ?
    #include <stdio.h>
    void main()
    {
    printf("value is =%d",(10++));
    }   [BL:Understand — CO:1 — Marks: 5m]

    (b) Problem Statement: Ramesh's basic salary is input through the keyboard. Write a program
    to calculate his gross salary based on the below details(note:tax on income is payable only if
    the net taxable income for a fiscal exceeds Rs. 2.5 lakh.)
    Note : Net Salary = Gross Salary - Income Tax - EPF - Professional Tax
    1. dearness allowance = 40%
    2. house rent = 20%
    3. Transport allowance = 1200
    4. Provisional fund = 200
    5. Income tax = 10%

    Solutions Expected:
      1. calculate the gross salary
      2. calculate the gross salary if the salary is above Rs. 1,00,000
      3. calculate the gross salary if the salary is above Rs. 3,00,000
      4. calculte the net salary (Net salary = Gross salary – Income tax – Provident Fund –
         Professional tax)

                                                         [BL:Apply — CO:2 — Marks: 10m]

    (c) Write a C program to print the following pattern.
    1
    3 5
    7 9 11
    13 15 17 19.

                                                         [BL:Apply — CO:2 — Marks: 5m]

2. (a) Compare & and operators in C.   [BL:Understand — CO:4 — Marks: 5m]

    (b) Write a C program that uses functions to convert decimal number to binarynumber.
                                                         [BL:Apply — CO:4 — Marks: 10m]

(c) Find the output of the following code.

```c
#include <stdio.h>
void main()
{
int x=(20 ||40)&&(10);
printf("x = %d", x);
```

}.   [BL:Apply — CO:2 — Marks: 5m]

END OF EXAMINATION

COURSE OBJECTIVES:
The course should enable the students to:

I	IDE(Integrated Development Environment) to create, edit, compile, run and debug C programs.
II	Various steps in program development.
III	The structural programming paradigms to build efficient programs in C language.
IV	The files handling concepts like create read from and write to text and binary files.

I COURSE OUTCOMES:
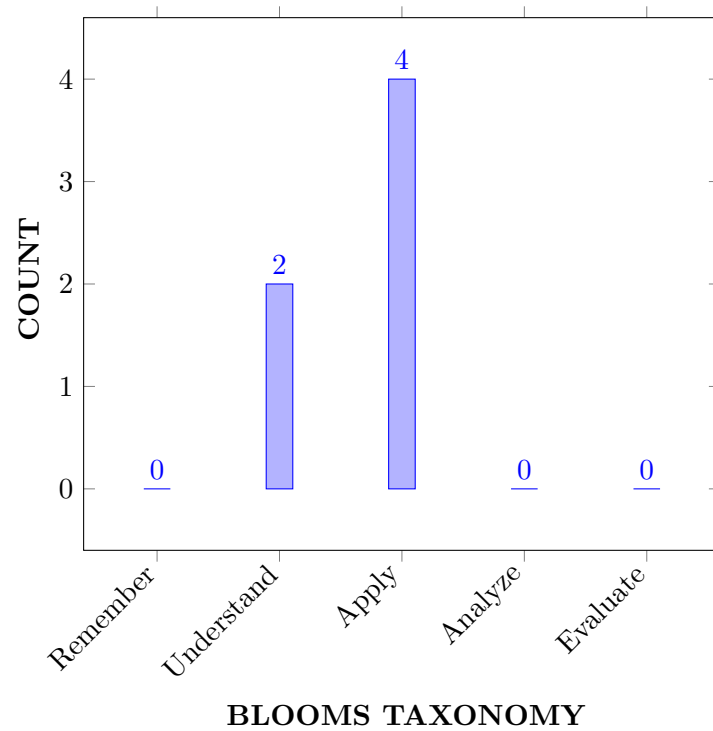**After successful completion of the course, students should be able to:**

CO 1	**Develop** the algorithms and draw flowcharts for solving Mathematical and Engineering problems.	Apply
CO 2	**Identify, compile and debug** programs in C language to analyze the results of experiments	Apply
CO 3	**Construct** programs involving decision structures and loops for specifying iteration, which allows code to be executed repeatedly.	Apply
CO 4	**Compare** the difference between call by value and call by reference to provide appropriate communication between functions.	Analyze
CO 5	**Apply** the working of arrays to implement mathematical vectors and matrices, as well as other kinds of rectangular tables.	Apply
CO 6	**Organize** the dynamics of memory by the use of pointers.	Apply

QUESTION PAPER 1: MAPPING OF SEMESTER END EXAMINATION QUESTIONS TO COURSE OUTCOMES

Q.No			All Questions carry equal marks	Taxonomy	CO's	PO's
1	a		What will be the output of following program ? #include <stdio.h> void main() { printf("value is =%d",(10++)); }	Understand	CO 1	PO 1

	b	**Problem Statement:** Ramesh's basic salary is input through the keyboard. Write a program to calculate his gross salary based on the below details(note:tax on income is payable only if the net taxable income for a fiscal exceeds Rs. 2.5 lakh.) **Note :** Net Salary = Gross Salary - Income Tax - EPF - Professional Tax 1. dearness allowance = 40% 2. house rent = 20% 3. Transport allowance = 1200 4. Provisional fund = 200 5. Income tax = 10% Solutions Expected: 1. calculate the gross salary 2. calculate the gross salary if the salary is above Rs. 1,00,000 3. calculate the gross salary if the salary is above Rs. 3,00,000 4. calculte the net salary (Net salary = Gross salary – Income tax – Provident Fund – Professional tax)	Apply	CO 2	PO 1
	c	Write a C program to print the following pattern. 1 3 5 7 9 11 13 15 17 19.	Apply	CO 2	PO 1
2	a	Compare & and operators in C.	Understand	CO 4	PO 1,2 ,3
	b	Write a C program that uses functions to convert decimal number to binarynumber.	Apply	CO 4	PO 1,2

	c	Find the output of the following code.
		#include <stdio.h>
		void main()
		{
		int x=(20 ‖40)&&(10);
		printf("x= %d",x);
		}.
			Apply	CO 2	PO 1

COURSE KNOWLEDGE COMPETENCY LEVEL

Signature of Course Coordinator   **HOD, CSE(CS)**
Ms. J Alekhya, Assistant Professor