BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSC **SEMESTER: I**
BRANCH: CQEDS **SESSION: MO/2025**

SUBJECT: ED25109 INTRODUCTION TO COMPUTING & PROGRAMMING

TIME: 3 Hours **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	i) Convert $7A.F_{16}$ to decimal. ii) Find the binary equivalent of $(237)_8 + (3A)_{16}$.	[2]	1	3
Q.1(b)	Explain a general structure of C program with an example.	[3]	1	2
Q.1(c)	Explain the different types of Datatypes available in C language?	[5]	1	2
Q.2(a)	Write a C program to print the sum of the digits of a number in C?	[3]	2	3
Q.2(b)	Write a C program to print the following pyramid pattern using loops: * * * * * * * * * * * * * * *	[3]	2	3
Q.2(c)	Explain the different types of loops in C with syntax, flowchart and code snippet.	[4]	2	4
Q.3(a)	Explain string manipulation library functions with their syntaxes. Write a program to reverse a string.	[5]	3	2,4
Q.3(b)	How a single dimension and two-dimension arrays are declared and initialized? Write a program to print Transpose of a matrix.	[5]	3	2,4
Q.4(a)	Explain the purpose of malloc(), calloc() and free() in C programming with example code snippet?	[3]	4	2
Q.4(b)	Predict the output:	[3]	4	3
Q.4(c)	Explain in detail the difference between call-by-value and call-by-reference with suitable example and code snippet.	[4]	4	4
Q.5(a)	Difference between Stack and Queue with example.	[2]	5	4
Q.5(b)	Write a program to copy the contents of one file into another.	[3]	5	3
Q.5(c)	Write a C program to search an integer from N numbers in ascending order using binary searching technique.	[5]	5	3

Q.4(b) Predict the output:

i)
```
int x = 10;
int *p = &x;
int **q = &p;
**q = **q + 5;
printf("%d", x);
```

ii)
```
union test {
int a;
char b;
float c;
};

union test t;
t.a = 100;
t.b = 'A';
printf("%d", t.a);
```

iii)
```
struct emp {
        int id;
        int salary;
        };

struct emp e[2] = {{1,1000},{2,2000}};
printf("%d", e[1].salary);
```

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