

Instructions : (1) All questions are compulsory.

(2) Draw neat labelled diagrams wherever necessary.

(3) Figures to the right indicate full marks.

Q.1 Solve any Five of the following.

5

- (a) Write the use of size of () operator.
- (b) "A function can not be defined inside another function" - Justify.
- (c) Define Flowchart.
- (d) What is newline character ?
- (e) Give any two limitations of an array.
- (f) What do you mean by exit controlled loop ?

Q.2 (A) Solve any Two questions out of Three.

(2*3 = 6)

- (i) What is Function ? Explain it's declaration and definition with suitable example.
- (ii) Explain gets () and puts () function with syntax and example.
- (iii) Explain row major and column major representation of two dimensional array.

(B) Solve any Two questions out of Three.

(2*2 = 4)

- (i) Write an algorithm for printing fibonacci series upto 'n' terms.
- (ii) Explain basic data types in C.
- (iii) Write a C program to check whether given number is prime or not.

Q.3 (A) Solve any Two questions out of Three.

(2*3 = 6)

- (i) What is an identifier ? Give the rules of an identifier.
- (ii) What is recursion ? Explain with suitable example.
- (iii) Write the difference between compiler and interpreter.

(B) Solve any Two questions out of Three.

(2*2 = 4)

- (i) Explain auto and static storage classes.
- (ii) Explain any two logical operator in C with example.

(iii) Trace the output.

```
#include <stdio.h>
int x = 2;
int main ( )
{
    int x = 3;
    Fun ( );
    printf (" x = %d ", x);
    return 0;
}

void fun ( )
{
    x = 4;
    x ++,
    printf ("x = %d", x);
}
```

Q.4 Solve the following questions.

(5*2 = 10)

(i) Write a C program to print the following pattern for 'n' number of rows.

```
1  2  3  4
1  2  3
1  2
1
```

(ii) Write a C program accept two matrices of $n \times n$ from user and perform the addition.



Semester II-Examination 2023
USCS-121 Advanced 'C' Programming

Time: 2 Hours]

[Marks: 35

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.

Q1. Attempt any 5 of the following.

[5 x 1=5]

- a) Define Dangling pointer.
- b) What is string? Give example.
- c) Define nested structure.
- d) What is command line argument?
- e) What is the use of rewind () function?
- f) What is pointer initialization? Give Example.

Q2. A) Attempt the following (any two).

[2 x 3=6]

- a) Explain the differences between macros and functions.
- b) Define file. Explain any two file functions.
- c) Explain the concept array of pointers with examples.

B) Attempt the following (any two).

[2 x 2=4]

- a) What are the uses of #include directive.
- b) Explain the differences between static memory allocation and dynamic memory allocation.
- c) What is output of following C code?

```
#include <stdio.h>
int main ()
{
    char s[10] = "hello";
    int i;
    for(i=0;i<5;i++)
    {
        printf("%c",s[i]-32);
    }
    return 0;
}
```


Q3. A) Attempt the following(any two).

[2 x 3=6]

- a) What is random access to files? Explain fseek() function.
- b) Explain the differences between structure and union.
- c) How pointers can be passed as an argument to function? Explain.

B) Attempt the following (any two).

[2 x 2=4]

- a) Explain typedef keyword in C with example.
- b) Write a format of preprocessing directives.
- c) Write a C Program to convert all the characters of a string in lower case using predefined function.

Q4. Attempt the following.

[Marks 10]

- a) Explain fgets() and fputs() function with example. **[3]**
- b) Write a C program to accept a string from user and copy given string into another string. **[3]**
- c) Write a C program to declare structure employee having data members eid, ename, salary. Accept details of 5 employees and display them. (Use: Array of structure). **[4]**
