

Seat No. : \_\_\_\_\_

# FE-126

February-2025

Int. M.Sc., (CA & IT), Sem.-I

## Fundamental of Programming

Time : 2 Hours]

[Max. Marks : 50

1. Answer the following questions : 10
- (A) State whether the following statements are true or false : (Any five) 5
- (1) Pointer variables are declared using the address operator.
  - (2) When an array is passed as an argument to a function, a pointer is passed.
  - (3) If an existing file is opened in write-mode, then the current contents of the file are deleted.
  - (4) Files are always referred to by name in C program.
  - (5) An array cannot be used as a member of structure.
  - (6) A union can have another union as one of the members.
- (B) Define following function : (Any five) 5
- |              |                  |
|--------------|------------------|
| (1) gets()   | (4) ceil(number) |
| (2) strcat() | (5) Abs(number)  |
| (3) strlen() | (6) ctime()      |
2. Answer the following questions : 10
- (A) Design an algorithm to check whether a number is prime or not. 5
- (B) Discuss simple if and if...else statement with appropriate example. 5
- OR**
- (A) Draw a flowchart to find the factorial of a number. 5
- (B) Explain type casting in C with examples of implicit and explicit conversions. 5
3. Answer the following questions : 10
- (A) Explain the differences between while, do-while, and for loops with examples. 5
- OR**
- Describe nested loops with an example.
- (B) What are the differences between static and dynamic arrays ? Provide examples. 5

4. Answer the following questions : (Any two) 10
- (A) Explain the difference between *call by value* and *call by reference* with an example. 5
- (B) What is a structure in C ? Explain in detail. Also explain how it differs from an array. 5

**OR**

- (A) Define a Union in C. How does it differ from a structure ? 5
- (B) What is recursion ? Explain with example. 5

5. Answer the following questions : 10
- (A) How do you declare and initialize a pointer ? Provide an example. 5
- (B) Explain the use of `fopen()`, `fclose()` and `fprintf()` functions. 3
- (C) Explain the purpose of `argc` and `argv` in the `main()` function. 2

**OR**

Find errors and rewrite correct code : (Any five) 10

- (1) 

```
#include<stdio.h>
#define pi=3.14;
void main();
{
    Area = pi*7*7;
    printf("%f",area);
}
```
- (2) 

```
#include<stdio.h>
void main();
{
    FILE *file;
    file = fopen("data.txt", "r");
    fprintf("Writing to a file");
    fclose(file);
}
```
- (3) 

```
#include <stdio.h>
void swap(int x, int y)
{
    int temp = x;
    x = y;
    y = temp;
}
void main()
{
    int a = 5, b = 10;
    swap(a, b);
    printf("a = %d, b = %d", a, b);
    return 0;
}
```

```
(4) #include <stdio.h>
int main( )
{
int i = 0;
while (i < 5)
{
printf("%d ", i);
}
return 0
}
```

```
(5) #include<stdio.h>
int main( )
{
int arr[5] = {1,2,3,4,5};
int *ptr = arr;
printf("Second element: %d"; *(ptr + 5));
return 0;
}
```

```
(6) #include<stdio.h>
int main( )
{
FILE *file;
file = fopen('data.txt', 'w');
printf(file, "Hello, File!");
fclose(file);
return 0;
}
```

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