Computer Programming - M2022

Mid Semester Exam

Set -6

- Answer all questions.
- Write your roll number and set number on top of each page.
- Save your scanned file with the name Setnumber_Rollnumber.pdf

(eg: Set6_S2022XXXXX.pdf)

QNo.

1. C programs are compiled into executable code. The input to the compiler is a '.c' file and the output is a.out (assuming you did not specify an output name using -o flag). We then execute the a.out directly. This is called the compilation and execution pipeline.
   Answer the questions below (2 marks + 4 marks + 4 marks)

   (a) What are the different stages of compilation ? Give a high level overview
   (b) Explain in detail the role of the **Linker** in the compilation and execution pipeline
   (c) What are the **advantages of using an interpreter** (in contrast to a compiler)

2. (a) Write a C program to take a symbol among +, -, *, /, and % as an input from the user. Use a switch case to print the corresponding symbol's name. Other than these inputs, the program should print "The entered symbol is not in the list"   (5 marks)

   Hint:
   +: Plus, -: Minus, *: Multiplication, /: Division, %: Modulo

   Example :
   Enter a symbol among +, -, *, /, %:
   +
   You entered plus symbol

(b) What will be the output of the following code, if the values of i and j are:
   (i) i =4, j=2 (ii) i=4, j=3   (5 marks)

```c
#include <stdio.h>

int main() {
    int i, j;
    printf("Enter the values of i and j: ");
    scanf("%d %d", &i, &j);

    if(++i == 6)
    {
        printf("\nChocolate");
        if (++i == --j)
            printf("\nPizza");
        else if (++i>--j)
            printf("\nPasta");
        else
            printf("\nBurger");
    }
    else if(i + j-- == 7)
        printf("\nPastry");
    else if(--i+j == 8)
        printf("\nSandwich");
    else
        printf("Nothing");

    return 0;
}
```