

Computer Programming - M2022

Mid Semester Exam

Set - 5

Date: 20-12-2022

- 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: Set5_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 **Loader** in the compilation and execution pipeline
- (c) What are the **disadvantages of using an interpreter** (in contrast to an compiler)

2. (a) Write a C program to take a capital letter character between A and F as an input from the user. Use a switch case to print Apple, Ball, Cat, Dog, Elephant, and Fish for an input of A, B, C, D, E, and F, respectively. Other than these inputs, the program should print "You are a donkey!"
(5 marks)

Hint:

A: Apple, B: Ball, C: Cat, D: Dog, E: Elephant, F: Fish

Example 1:

Enter a capital letter between A and F:

A

Apple

Example 2:

Enter a capital letter between A and F:

X

You are a donkey!

(b) What will be the output of the following code, if the values of i and j are:

(i) i =5, j=8 (ii) i=7, j=2 (5 marks)

```
#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;
}
```