ourdiu.com | Shared by Mahbub Hasan

Daffodil International University

Faculty of Science & Information Technology

Department of Software Engineering

Mid Examination – Fall 2025

Course Code: SE 121; Course Title: Structured Programming

Sections & Teachers: All; MSS, JIC, MR, AHZ, SCS, MBH, AJE

Time: 1.5 Hours | Marks: 25

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1. a) Interpret the output and explain value changes at each step. [Marks-4] CLO-1 *Level-2*

```
#include <stdio.h>
int main(){
int a =15, b=7, c, d;
b = a++;
c = - -b;
d = (a>b) && (b>c);
printf ("%d\n %d\n %d\n %d\n", a, b, c, d);
}
```

b) Rewrite both programs in a correct and compilable form. [Marks-6] CLO-1 *Level-2*

i)
```
#include<stdio.h>
int main {
   int num = 42;
   float PI_VAL = 3.14159;
   printf("Number: %f\n", num);
   printf("PI: %f\n", PI_VAL);
   return;
}
```

ii)
```
#include <stdio.h>
int main () {
float number;
scanf("%f", number);
int res = sqroot(number);
printf("Result is: %d\n", res);
return 0;
}
```

2 a) A restaurant wants to automate billing. [Marks-4] CLO-2 *Level-3*

Item Code	Item Name	Price (BDT)
1	Burger	180
2	Pizza	250
3	Pasta	200

Build a C program using a *switch–case* where the user enters an item code (1–3) and quantity, then displays the total bill or "*Invalid choice*" for an invalid code.

Sample Input	Sample Output
Enter item code (1-3): 2 Enter quantity: 3	Total Bill = 750 BDT

ourdiu.com | Shared by Mahbub Hasan

2.	*b)*	**Construct** a C program to simulate the Deshi Squid Game. A player starts with 1000 taka and plays 5 rounds. • Winning a round adds 500 taka. • Losing a round deducts 500 taka. • If the balance becomes 0 or less, the player is eliminated, and the game stops immediately. • After the game ends, display the final balance and whether the player survived or was eliminated.	[Marks-6]		CLO-2 *Level-3*

Sample Input	Sample Output
Round 1 result (1 = Win, 0 = Lose): 1 Round 2 result (1 = Win, 0 = Lose): 0 Round 3 result (1 = Win, 0 = Lose): 1 Round 4 result (1 = Win, 0 = Lose): 1 Round 5 result (1 = Win, 0 = Lose): 1	Final Balance: 2500 Status: Survived!

Sample Input	Sample Output
Round 1 result (1 = Win, 0 = Lose): 0 Round 2 result (1 = Win, 0 = Lose): 0	Player Eliminated! Balance reached 0.

c)	A smart security system verifies a user's access code by checking the sum of its digits. **Construct** a C program using a loop that takes a numeric code as input and calculates the sum of all its digits.	[Marks-5]		CLO2 *Level-3*

Sample Input	Sample Output
Enter the code number: 567	Sum of Digits = 18

Sample Input	Sample Output
Enter the code number: 511	Sum of Digits = 7

ourdiu.com