 **National University of Computer & Emerging Sciences, Karachi**

**Department of Computer Sciences**

**Mid-Term Examination (Fall 2021)**

**9 November 2021**

**Paper B**

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| **Course No: CL 1001** | **Course Name: Programming Fundamental** |
| **Instructor Name : Sumaiyah Zahid** | |
| **Student Roll No:** | **Section:** |

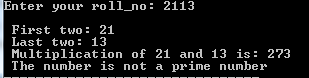
**Time Allowed**: 90 minutes. **Total Marks**: 30

Instructions:

* Your Student ID must be written on the paper.
* For Exam submission: Submit the .c file for each question named as **Q1.c, Q2.c** on net storage.

**Question # 1: (If-Else If)**  *[ Marks: 10 Time:30 mints ]*

Write a program that take your roll number as input find the first two digits and last two digits of the roll number and print the message the number is prime if it is prime else the number is not a prime number. Roll number must be of 4 digits.



**Question # 2: (Switch Case)**  *[ Marks: 10 Time:30 mints ]*

You are working as a Data Scientist in xyz company which works on 3 types of data i.e numerical, textual and symbols. Data handling is a tough task, you are required to make a C program using switch statements which should be able to do the following tasks.

* If data is Numerical, program should do the following task:

Check if number is Armstrong or not.

Armstrong number is a number that is equal to the sum of cubes of its digits.

For example 153 is an Armstrong number. 153= 1^3 +5^3+ 3^3

* If data is Textual, program should do the following task:

Take 5 characters and check if it’s a palindrome or not.

Also count vowels and consonants.

* If data is Symbols, program should do the following task :

Whatever symbol user inputs, it should draw a square of it

Enter symbol : #

###################

# #

# HELLO #

# WORLD #

# #

###################

**Question # 3: (Loop)**  *[ Marks: 10 Time:30 mints ]*

DECS is organizing a Pakistan tour. Freshmen would have 10% discount, Sophomores have 15% discount, Juniors have 20% discount, and Seniors have 25% discounts.

Your program should be able to work on any ticket price. It shouldn’t be hard coded.

Make a C program to display a menu to the user. He should be able to purchase as many tickets as he wants. Program should display the summary of tickets purchased and total bill along with the total discount.

Welcome to DECS Annual Tour

Ticket price is 30000/ person

Enter your batch year or n to exit: 20

Enter your batch year or n to exit: 19

Enter your batch year or n to exit: 19

Enter your batch year or n to exit: 18

You bought 1 ticket of batch 20

2 tickets of batch 19

1 ticket of batch 18.

Your Total Bill is: 120000

Your Discount is: 25000

You Net Bill is : 95000