**Cse321 Lab Final**

**Spring2024**

**Duration – 1hour**

**Marks – 20**

Set A

**Name –**

**ID –**

1. Write a C program which will take your student ID as input. Your program will have a function named “**SumofEven**” which will calculate the sum of even digits of the student ID and print it. [5]
2. Design a C program that utilizes the **fork()** system call. The program should prompt the user to enter an integer. After forking, the child process should calculate and print the square of all the integers upto the given integer only if the integer is odd. If the integer is even, then a grandchild process will be created and it will calculate and print the cube of the given integer, while the parent process should print “Parent process:End of process”. [7]
3. Design a C program to simulate a basic messaging system using. The program should create two threads:

* Sender thread: This thread represents a user who sends messages to a common message box. The sender thread continuously prompts the user for 5 times o input a message box.
* Receiver thread: This thread represents a user who reads messages from the message box. The receiver thread continuously checks the message box for new messages and displays them to the user. [8]