

# EE229-Computer Organization and assembly Language

Friday, July 3, 2020

**Course Instructor**

Engr.Ayesha Inam

**Final Term Exam**  
**Spring Semester 2020**  
**Max Time: 3 Hour**  
**Max Marks: 45**  
**Exam Weight (Out of 100). 45**

Roll No

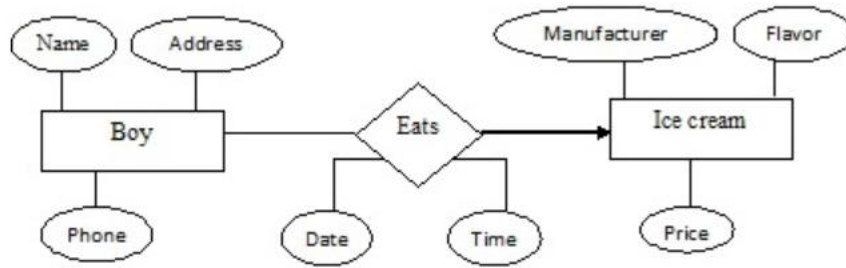
Section

## Guidelines for Submission:

1. You should submit only one zipped folder having excel and access solution files.
2. You must submit your solution before due time via **Slate**. Submissions submitted after the due time shall not be considered.
3. If you don't finish every part of a question, don't worry! You can still submit what you've done to get marks based on your efforts.
4. In case of copied or plagiarized solutions in exam Or If a student provided help to another student during exam both will be awarded "F" grade and it will affect the student CGPA.
5. Viva of any student can be conducted by the instructor after conducting an online exam in case of any doubt.
6. This document should be submitted through LMS (**Slate**). But in worst case, you can email it within the deadline.

	Q-1	Q-2	Q-3	Q-4	Q-5	Q-6	Total
Total Marks	5	10	10	5	5	10	45
Marks Obtained							

Q1. Write an assembly code for the following flow chart:



Q2. Develop the Game 'Are you smarter than a 5<sup>th</sup> grade' in Assembly Programming Language. You have to insert 10 questions in each round. Also, one has to answer at least 8 questions right to qualify to next level.

Q3. For the last two decade Amazon.com has been serving customer worldwide.

Amazon.com was founded by Jeff Bezos back in 1995. The founders vision was to build a virtual shopping place for book lovers. Amazon.com brings the world largest book store to the door step of the people around the world. All people has to do is search and select the desired book. It took 30 day to deliver books to the customers of 50 states and 45 countries. Amazon.com was a huge success in nineties. Amazon.com became a platform for the retailer and individuals in 2000. Amazon.com offers their services towards four types of customers, consumers, sellers, enterprises and content creators. Amazon serves customer through the popular web site [www.amazon.com](http://www.amazon.com). Now a day customers can access through mobile technology. Amazon.com apps are also available for the customers.

If we want to start a business as replica of Amazon, Write an assembly language program to fulfill the purpose.

Q4. Two matrices are given below.

$$A = \begin{bmatrix} 10 & 20 & 30 \\ 40 & 50 & 60 \\ 70 & 80 & 90 \end{bmatrix}$$

$$B = \begin{bmatrix} 75 & 73 & 18 \\ 33 & 45 & 72 \\ 25 & 18 & 9 \end{bmatrix}$$

Write an assembly language program to:

- Declare these matrices in row major order
- Multiply these matrices and store the answer in matrix A.
- All the elements of matrices are in hexadecimal.

Q5. You are given with the following

string str DB "I have to get eighty marks to qualify",0

- Write an ALP to encrypt the above message and store the encrypted string (use your own encryption scheme)
- Then write another code to decrypt the string and store the decrypted string
- Finally compare the decrypted and original string and set the carry flag if both the strings are equal

(Use of string primitive instructions is must in all three parts)

Q6. You are given with two signed decimal numbers 8 and -6.

- Convert them to binary
- Multiply them by using a. Booth's algorithm b. Two's complement method
- Compare the results generated by both the approaches