National University of Computer and Emerging Sciences, Lahore Campus

Course Name:	Network Security	Course Code:	CS525
Program:	BS (Computer Science)	Semester:	Spring 2020
Duration:	90 Minutes	Total Marks:	40
Paper Date:	11-03-2019	Weight	20
Section:	-	Page(s):	6
Exam Type:	Midterm		

Student : Name:_____ Roll No._____ Section:_____

Instruction/ Notes:

1. **Points for each question are roughly related to the time that needs to be spent on that question. Avoid spending excessive time on questions with less points and less time on questions with more points.**

MCQ1. One of the empirical studies found out that if an error in the requirement phase is not corrected, it could result in as much as _____ rework cost (if corrected at later stages of development).

A) 10 times
B) 50 times
C) 100 times
D) 200 times
E) 300 times

MCQ2. Which of the following statements are true

i. Many requirements error are made
ii. Many of these errors are not detected early
iii. Many of these error are detected early
iv. Some of these error are detected early
v. Many of these errors can be detected early
vi. Many of these cannot be detected early
vii. Requirements error are usually not very common

A) i, iii, v
B) i, ii, iv, vi
C) ii, iv, v, vii
D) i, ii, iv, v
E) ii, iv, vi, vii

MCQ3. Gold-plating refers to the practice of

A) Assigning correctly the highest priority to a requirement
B) Assigning incorrectly the highest priority to a requirement
C) Defining a useless requirement not desired by the customer in the hopes of impressing them
D) Taking a requirement and assigning it the highest importance

MCQ4. Following are the features that most customers do not want. Identify the one which a small percentage would want.

A) Undesirable performance characteristics
B) Esthetic features
C) Gold plating
D) Hazards

MCQ5.

Q1. Suppose a smart home system is to be designed. One of the stakeholders is an illiterate man from one of the villages of Pakistan. Write a short persona of such a person that could affect the development of the smart home system (5).

Q2. What is the relationship between a goal and a requirement? Explain with at least 2 examples (1+1+1=3)

Requirements are specified to accomplish a Goal

To build the safest bridge in the world – The Bridge structure of the bridge should be able to support double the required maximum tonnage.

To develop a highly secure software – the software should not contain any of the known vulnerabilities.

Q3. Describe 10 different security requirements for a smart home monitoring system. (10 points)

1.

2.

3.

4.

5.

6.

7.

8._____
_____
_____
9._____
_____
_____
10._____
_____
_____

7.1.1 System shall have biometric and keypad door locks for all points of entry into the house.
7.1.2 System shall allow users to encode a one time use door code for expected visitors.
7.1.2.1 System shall allow users to remotely code a one time use code for visitors (i.e., over the phone, Internet, or some other mobile device).
7.1.3 System shall record all entries based on code entered or biometrics presented.
7.1.4 System shall present report to users for all entries.
7.1.5 System shall persist home entry data for no less than ten (10) years.
7.1.6 System shall allow for RFID tags to open garage doors.
7.1.7 System shall allow for biometric and key pad entry to open garage doors.
7.1.8 System shall allow user to configure maximum duration for garage door to remain open.
7.1.9 System shall shut open garage door if it is open past the user-defined maximum.
7.1.10 System shall allow user to override automatically shutting the garage door, i.e., “Hold Open option”.
7.1.11 Garage door shall reverse course if something is blocking its path.
7.1.12 System shall notify user if the garage door is unable to safely close.
7.1.13 System shall allow users to configure entry routine for all RFID, biometric, and key codes, i.e., upon entry for user X through the garage door, turn on garage light, hall light, and kitchen light.

Q4. Imagine a system such a FELX. Write one desired behavior, one specified behavior, one missing behavior and one unwanted behavior. (1+1+1+1=4)

1._____
_____
_____
2._____
_____
_____
3._____
_____
_____

4._____
_____
_____

1. The system shall allow only those students to register who have cleared their dues
2. The system shall allow only those students to register who have cleared their dues
3. The system should allow only those students to apply for final transcript who have cleared their dues
4. The system shall use all the colors in the rainbow.

Q4. Imagine a system such a FELX. Write two forbidden behaviors. (2)

1._____
_____
_____
2._____
_____
_____

1. The system should not allow one student to access the grades of another student
2. The system should not allow a student to change his/her grades.

Q5. Should a requirements engineer make assumptions? Explain your answer with an example. (2)

No. Suppose the a RE makes an assumption which is forbidden in the environment of the customer. Such flashy colors, low speed

Q6. In CMMI Level 2, how does having cost and schedule planning processes affect the overall development process? (2)

They are likely to be able to make consistent budget and schedule predictions for projects in the same application area.

Q7. Describe briefly the four major requirements engineering activites? (1+1+1+1=4)

1._____
_____
_____
2._____
_____
_____
3._____
_____
_____
4._____
_____
_____