Comsats University Islamabad, Lahore Campus

(Defence Road, Off Raiwind Road, Lahore)

Midterm Exam – Spring 2021

Course Title	Software Quality Engineering	**Course Code**		CSE302		**Credit Hours**	3(2,1)
Instructor (s)	Ms. Sobia Usman	**Program Name**		Software Engineering			
Semester	5th	**Batch**	SP21	**Section**	A, B	**Date**	April 05, 2021
Time Allowed	90 minutes	**Maximum Marks**		50			
Student Name:		**Reg No.**					

Important Instructions/Guidelines:

1. Read the questions carefully.
2. Manage your time accordingly.
3. Do not use the lead pencil.
4. Show all intermediate steps to gain complete grades.
5. Attempt all the questions.
6. Do not give detailed answers, just write to the point.
7. Please return the question paper.

Question No 1. **CLO: <01>; Bloom Taxonomy Level: <*Creating*>**

Identify McCall's quality factor against each requirement. **[5 marks]**

1. Students are expected to be able to access the system productively with no training.
2. To reduce waiting time 97% of users should be able to log onto the system within 4 seconds.
3. The system shall follow comprehensible naming conventions and coding standards throughout the development.
4. Moreover, the system shall support course content in various formats: text, pdf or in word doc.
5. The probability of missing some student's data i.e., about their attendance, grades, submitted assignments and quizzes will not exceed the threshold.

Question No 2. **CLO: <01>; Bloom Taxonomy Level: <*Understanding*>**

Explain classification of causes of software errors. Do all software errors end with software failures? Is it enough to take care of the code to ensure the quality of services provided by the software? **[5+3+2]**

Question No 3. **CLO: <03>; Bloom Taxonomy Level: <*Applying*>**

Apply quality assurance on the given dataset using iterative model in two iterations: **[10 marks]**

Activity	Cost unit	Defect removal effectiveness
Req. specification review	3.2	28%
Design review	1.2	50%
Code	1.0	50%
Integration testing	2.9	20%

Documentation	1.0	20%
Big bang testing	2.2	50%
Operational phase	1.6	10%

Question No 4. **CLO: <03>; Bloom Taxonomy Level: <*Creating*>**

What factors affect the intensity of quality assurance activities? **[5]**

Question No 5. **CLO: <02>; Bloom Taxonomy Level: <*Understanding*>**

What are the quality infrastructure components? What is the role *SQA Forum* and committee in organization base. **[5+5]**

Question No 6. **CLO: <03>; Bloom Taxonomy Level: <*Understanding*>**

An SQA professional claims: "I find all the reasons given for a proposal draft review to be justified. I also believe that a review contributes to the quality of the proposal, especially in clarifying and precisely defining requirements, and in preparing more realistic estimates, among other issues. However, once the proposal has been presented to the customer, there is no need for a contract draft review. The task of reviewing the final negotiations results and the final version of the contract should be left to the legal department and to management."

(1) Do you agree with the above statement? List your arguments. [2]

(2) In what situations is a contract draft review not necessary? [2]

(3) What process you will use when applying for a contract review in this case? [1]

Question No 7. **CLO: <02>; Bloom Taxonomy Level: <*Understanding*>**

It is said that three of the quality plan's elements must be coordinated with an element of the development plan – the mapping of the development process.

(1) Can you identify these elements? [2]

(2) Explain the nature of the required coordination. [3]

Question No 8. **CLO: <02>; Bloom Taxonomy Level: <*Understanding*>**

A customer's angry letter complaining about an unfair cost estimate for a requested minor improvement: 60 man-days. He quoted the head of the Software Functional Improvement Team, who had said that the high estimate was the outcome of missing documentation and non-standard coding of the original package.

(1) Suggest the reasons for each of the maintenance team's failures. [2]

(2) Suggest the steps to be taken to prevent failures. [3]