



**Software Engineering**  
**Assignment-9**  
**TYPE OF QUESTION: MCQ/MSQ**

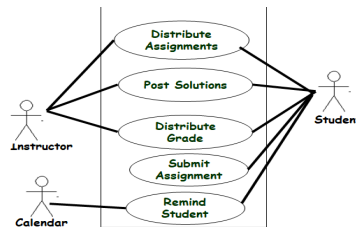
**Number of questions: 10**

**Total mark: 10 X 1 = 10**

For each of the following questions one or more of the given options are correct. Choose the correct options.

**QUESTION 1:**

Consider the following use case diagram for an automation software.



Based on the use case diagram, how many boundary classes should be designed in the domain model?

- a. 3
- b. 5
- c. 6
- d. 8
- e. 9

**Correct Answer: e. 9**

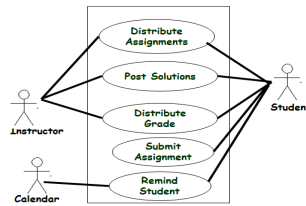
**Detailed Solution:**

The number of boundary classes is equal to number of interactions among users and use cases.

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**QUESTION 2:**

Consider the following use case diagram for an automation software.



Based on the use case diagram, how many controller classes should be designed in the domain model.

- a. 3
- b. 4
- c. 5
- d. 6
- e. 7

**Correct Answer: c. 5**

**Detailed Solution:**

For use case there is one controller class. So, based on the diagram no. of controller classes = 5.

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### **QUESTION 3:**

Which of the followings are do not serve as guidelines for identifying entity classes from a problem description?

- a. Entity classes usually appear as data stores in a DFD model
- b. Entity classes usually occur as group of objects that are aggregated
- c. The number of classes is equal to the number of use cases in the use case model of the system
- d. The aggregator of the objects of an entity class corresponds to a register in the physical world
- e. All actors present in the use case diagram are to be considered as entity classes

**Correct Answer: c.** The number of classes is equal to the number of use cases in the use case model of the system

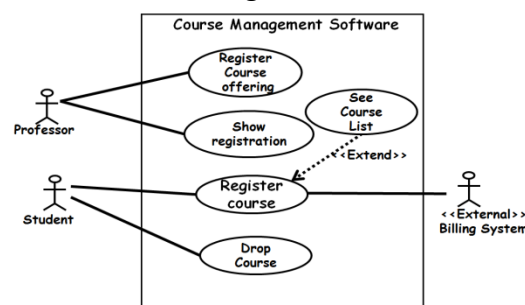
- e. All actors present in the use case diagram are to be considered as entity classes

#### **Detailed Solution:**

The number of classes may not be equal to the number of use cases in the use case model. The actors are not considered as entity rather the data stores are used as entity classes.

### **QUESTION 4:**

What is the number of boundary classes that must be included in the domain model for a software development project whose use case diagram is shown below?



- a. 4
- b. 5
- c. 6
- d. 7
- e. 8

**Correct Answer: b. 5**

**Detailed Solution:**

The number of boundary classes should be equal to the number of interactions among users and use cases.

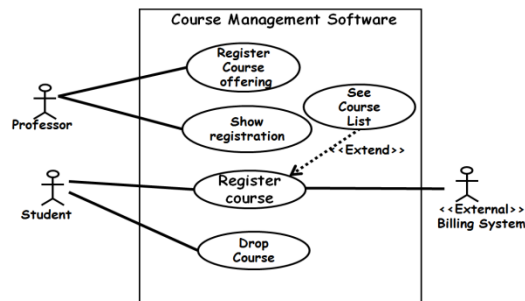
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**QUESTION 5:**

What is the number of controller classes required in the domain model for a software development project whose use case diagram is shown below?



- a. 3
- b. 4
- c. 5
- d. 6
- e. 7

**Correct Answer:** c. 5

**Detailed Solution:**

The number of use cases represents the number of controller classes.

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### **QUESTION 6:**

Which of the following statements describe a failure of a program during testing?

- a. The programmer misunderstood a part of the design given to him
- b. The programmer typed an arithmetic operator as '-', though he intended to type '+'
- c. The program crashes when a tester enters a valid input
- d. A code reviewer reports that he/she has found a defect in the code.
- e. The program produces a garbled output to a certain user query

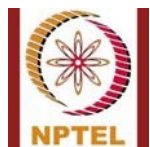
**Correct Answer:** c. The program crashes when a tester enters a valid input  
e. The program produces a garbled output to a certain user query

### **Detailed Solution:**

Program crash for valid input or garbled output to a certain user query is considered as a failure during testing.

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### **QUESTION 7:**

About half the effort of development of a typical software is spent on testing. But, testing typically requires only 10% of the development time. Which of the followings are explain this apparent anomaly?

- a. A team has too many coders as compared to testers
- b. Testing permits many parallel activities to be conducted at any time
- c. A team has too many designers as compared to coders
- d. Testers are more proficient as compared to other developers
- e. Many test tools to automate some of the testing activities are available

**Correct Answer:**

- b. Testing permits many parallel activities to be conducted at any time
- e. Many test tools to automate some of the testing activities are available

**Detailed Solution:**

Even though testing requires half of the development time, the parallel activities and test automation help in requiring only 10% of the development time.

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**QUESTION 8:**

In a waterfall-based software development, which of the following are true concerning various verification activities carried out?

- a. All verification activities are carried out by a separate testing team
- b. All verification activities are carried out by the development team
- c. Verification involves both static and dynamic activities
- d. Verification involves only static activities
- e. Verification involves only dynamic activities

**Correct Answer:** b. All verification activities are carried out by the development team  
c. Verification involves both static and dynamic activities

**Detailed Solution:**

In a waterfall-based software development, all verification activities are both static and dynamic and carried out by development team.

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**QUESTION 9:**

Which one of the following statements is **true** concerning unit testing?

- a. Carried out by the development team
- b. Involves testing the system as a whole
- c. Often carried out by a separate testing team
- d. Carried out by the customers
- e. Concerns validation of system functions

**Correct Answer:** a. Carried out by the development team

**Detailed Solution:**

Unit testing is carried out by development team.

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**QUESTION 10:**

Which of the following are **not** implied by the pesticide paradox?

- a. A software can be tested by repeated application of a testing methodology
- b. A software should be tested by successive application of a wide range of testing methodologies
- c. A software should be tested by deploying the most promising among all the testing methodologies
- d. A testing methodology is effective for certain types of errors

**Correct Answer:** a. A software can be tested by repeated application of a testing methodology  
c. A software should be tested by deploying the most promising among all the testing methodologies

**Detailed Solution:**

Pesticide paradox neither ensures repeated application of a testing methodology nor by deploying the most promising among all the testing methodology.

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