Professional Course Examination, May 2023

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

(Software Engineering—II)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A—OBJECTIVE)

(*Marks* : 25)

SECTION—I

(*Marks* : 15)

A. Tick (✓) the correct answer in the brackets provided :   1×10=10

  1. The objective of software project planning is to provide a framework that enables the manager to make reasonable estimates of _____.

    (a) resources   (   )

    (b) cost   (   )

    (c) schedule   (   )

    (d) All of the above   (   )

2. The prototype can serve as the _____.

   (a) pre-system   (   )

   (b) post-system   (   )

   (c) first system   (   )

   (d) second system   (   )

3. A _____ is a generalization of a set of classes that are related to it.

   (a) subclass   (   )

   (b) superclass   (   )

   (c) class   (   )

   (d) None of the above   (   )

4. An attribute can take on a value defined by an enumerated _____.

   (a) domain   (   )

   (b) degree   (   )

   (c) tuple   (   )

   (d) None of the above   (   )

5. There are many reasons why software is delivered late, most can be traced to _____.

   (a) an unrealistic deadline   (   )

   (b) changing customer requirements   (   )

   (c) miscommunication among project staff   (   )

   (d) All of the above   (   )

6. A time-line chart is also sometimes called a _____.

   (a) PERT chart ( )

   (b) Gantt chart ( )

   (c) Bar chart ( )

   (d) All of the above ( )

7. To build a secure system, you must focus on quality, and that focus must begin during _____.

   (a) design ( )

   (b) implementation ( )

   (c) runtime ( )

   (d) None of the above ( )

8. Quality assurance establishes the infrastructure that supports _____.

   (a) solid software engineering methods ( )

   (b) rational project management ( )

   (c) quality control actions ( )

   (d) All of the above ( )

9. A UML state diagram model states of a/an _____.

   (a) object ( )

   (b) class ( )

   (c) function ( )

   (d) All of the above ( )

10. A sequence diagram is used to show the dynamic communications between objects during _____ of a task.

   (a) execution   (   )

   (b) revision   (   )

   (c) modification   (   )

   (d) All of the above   (   )

B. Tick (✓) whether the following statements are *True (T)* or *False (F)* :   1×5=5

   1. Software project management begins with a set of activities that are collectively called project planning.

   (T / F)

   2. Any change to the attributes or operations contained within a superclass is immediately inherited by all subclasses.

   (T / F)

   3. Scheduling begins with process decomposition.

   (T / F)

   4. High-quality software increases risks for both the developer and the end user.

   (T / F)

   5. UML 2·0 provides 23 different diagrams for use in software modeling.

   (T / F)

SECTION—II

(*Marks* : 10)

C. Answer the following questions : 2×5=10

1. What are the steps of spiral model?

    OR

    What is agile process?

2. What are the attributes on object-oriented concept?

    OR

    What is OOA process?

3. Write a note on cost estimation.

    OR

    What is the critical path method?

4. What is the concept of 'Good enough' software?

    OR

    Write a note on ISO 9000.

5. Write a brief note on UML activity diagram.

    OR

    Write a short note on use case diagram.

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

D. Answer the following questions : 10×5=50

1. *(a)* Define the term Management Spectrum 4P. Discuss various components of the management spectrum, and support your answer with a diagram. 2+8=10

OR

(b) Briefly explain the waterfall model, and support your answer with an appropriate diagram. 10

2. *(a)* What is meant by class in object-oriented concept? Discuss the Polymorphism concept and its advantages in object-oriented programming. 2+8=10

OR

(b) Define the term Design Classes. Elaborate on five different types of design classes concerning object-oriented design concepts. 2+8=10

3. *(a)* Write the basic concept of project scheduling. Discuss how to define a task set for the software project. 2+8=10

OR

(b) Define a Task Network. Describe the concept of scheduling in the project scheduling environment. 2+8=10

4. *(a)* Explain the term Quality in Software Quality Management. Discuss McCall's quality factors that affect the software quality. 2+8=10

OR

(b) What is Quality Control? Discuss the ISO 9126 Quality Factors.
 2+8=10

5. *(a)* Define the term Unified Modeling Language (UML). Discuss the concept of Class Diagrams in UML. 10

OR

(b) Briefly explain the concept of a Use Case Diagram in UML, and support your answer with an appropriate example diagram.
 7+3=10

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