

**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

Student's Copy

( 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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