

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2023 Supplementary Examinations

**Programme: B.E.**

**Semester: V**

**Branch: Information Science And Engineering**

**Duration: 3 hrs.**

**Course Code: 20IS5PCSEO**

**Max Marks: 100**

**Course: Software Engineering and Object Oriented Modeling Design**

**Date: 14.09.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may suitably assumed.

### UNIT - I

1 a) Describe work products for a “Ticket Distributor” Project **06**

b) Define the terms with suitable examples-  
 i) Activity  
 ii) Delivery  
 iii) Management  
 iv) Task  
 v) Phases  
 vi) Resources

c) Explain the roles and responsibilities in software engineering for establishing “Travel Agency” firm. **08**

### UNIT - II

2 a) Consider a software system for supporting checkout of material at a public library  
 (i) List four actors. Explain the relevance of each actor  
 (ii) One use case is to borrow a library item. List three use cases at a comparable level of abstraction. Summarize the purpose of each use case with a sentence.  
 (iii) Prepare a use case diagram for a library checkout system.

b) Design an activity diagram that elaborates the details of logging into an e-mail system. Note that entry of the user name and the password can occur in any order. **06**

c) Consider the purchase of gasoline from an electronic gasoline pump. **08**

i. Prepare a use-case diagram for the given scenario.  
 Normally the customer pays cash for a gas purchase. Add extend relationships to handle the incremental behavior of paying by credit card outside or paying by credit card inside. Add an include relationship to represent the optional purchase of a car wash.

ii. List and explain the relevance of each actor.

iii. Summarize the purpose of each use case

**OR**

3 a) Prepare a Sequence diagram for a session with an “Online Stock Broker” system. **06**

b) Prepare a class diagram for a graphical document editor that supports grouping. Assume that a document consist of several sheets. Each sheet contains drawing objects, including text, geometrical objects and groups. A group is simply a set of drawing objects, possibly including other groups. A group must contain at least two drawing objects. A drawing object can be direct member of at most one group. Geometrical objects include circles, ellipses, rectangles, lines and squares. **06**

c) Describe Generalization and Inheritance with suitable examples **08**

**UNIT - III**

4 a) Specify the various functional and non-functional requirements for Forensic Cloud system. **06**

b) Define Realism, Verifiability and Traceability with suitable examples **06**

c) Explain in detail the methods adopted in requirements elicitation process. **08**

**UNIT - IV**

5 a) Draw a flowchart and flowgraph to calculate factorial of a number and calculate its cyclomatic complexity **06**

b) Consider a system designed for postal services’ payment : Letters up to 100g are called as ‘light’. Postal rates for sending the light letters up to 10 g are \$25. The next 40 g should be payed by \$35. Each next 25 g up to 100g should be payed by an extra \$10. Analyze and design partitions for the above scenario. **06**

c) Prepare a test case report on “Social Networking Site (FConnect)” **08**

**UNIT - V**

6 a) Explain in detail the reasons, why it is difficult to introduce agile methods for large companies. **06**

b) Illustrate Supplier Risk Assessment for a Data Management Company. **06**

c) Differentiate between Agile and Plan driven development methods with suitable illustrations **08**

**OR**

7 a) Considering the factors affecting the software pricing, prepare an estimation for “Health Insurance”. **06**

b) Prepare a project schedule /activity bar chart for constructing a “Commercial Complex” **06**

c) Explain in detail Risk management process with suitable diagram and describe Strategies which help in managing risk **08**

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