Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: U3C02

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

Fourth Semester

Computer Science and Business Systems

21UCB402-SOFTWARE DESIGN WITH UML

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the three ways to apply UML?   CO1-U

2. Define a) Actors, b) Scenarios, and c) Use cases.   CO1-U

3. Define Elaboration.   CO1-U

4. Define an attribute. Explain with an example using UML notation   CO1-U

5. Compare and Contrast asynchronous and synchronous message.   CO1-U

6. Compare Activity and state chart diagram. Mention the Elements of an Activity   CO1-U
    Diagram.

7. Define patterns.   CO1-U

8. What are the steps for mapping design to code?   CO1-U

9. List out the four phases of OMT model   CO1-U

10. Define Integration testing   CO1-U

PART – B (5 x 16= 80 Marks)

11. (a) A Library lends books and magazines to member, who is   CO2-App   (16)
         registered in the system. It also maintains the purchase of new
         books and magazines for the Library. A member can reserve a
         book or magazine that is not currently available in the library, so
         that when it is returned or purchased by the library, that person is
         notified. The library can easily create, replace and delete
         information about the books, members, and reservation in the
         system. The books transactions are stored in the database. The
         fine list while the member returns the book after the due date
         must be generated. To develop use case diagram and discover the
         use cases and actors of this system.

Or

(b) A University conducts examinations and the results are announced. Prepare a report for the following:
• Print the marks in the register number order semester wise for each department
• Print the Arrear list semester wise.
• Prepare a Rank list for each department.
• Prepare the final aggregate mark list for final year students.
Identify the problem statement and to develop use case diagram and discover the use cases and actors of this system   CO2-App   (16)

12. (a) Explain with an example, how use case modeling is used to describe functional requirements, Identify actors, scenario and use cases for the example.   CO2-App   (16)

Or

(b) Write a problem statement for Airline ticket Reservation System. To develop Class diagram and discover the notation of this system   CO2-App   (16)

13. (a) Distinguish between the Concepts of component and Deployment Diagram with an example.   CO1-U   (16)

Or

(b) Why are interaction diagrams important for understanding the interactions and relationships within a software system?   CO1-U   (16)

14. (a) Explain Adapter pattern with a diagram   CO1-U   (16)

Or

(b) Explain with an example Observer pattern.   CO1-U   (16)

15. (a) Discuss in detail about the different types of testing in OOAD.   CO1-U   (16)

Or

(b) Explain in detail about mapping design to code concepts in detail.   CO1-U   (16)

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