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**Question Paper Code: U3C02**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 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)

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|---|-------|
| 1. Define UML.  | CO1-U |
| 2. What are the three kinds of Actors?  | CO1-U |
| 3. List any five inception artifacts.   | CO1-U |
| 4. What are the types and categories of requirements?                                     | CO1-U |
| 5. Define Package. Draw UML notation for Package.   | CO1-U |
| 6. Compare Activity and state chart diagram. Mention the Elements of an Activity Diagram. | CO1-U |
| 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. Compare white and black box testing.  | CO1-U |

PART – B (5 x 16= 80 Marks)

11. (a) A University conducts examinations and the results are announced. Prepare a report for the following: CO2-App (16)
- 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 usecases and actors of this system

Or

- (b) Write a problem statement for Hospital Management. To develop use case diagram and discover the use case 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 in detail about the Adapter patternwith an example. CO1-U (16)
- Or
- (b) How would you apply the Creator principle in designing a class hierarchy for a complex system? CO1-U (16)
15. (a) Explain briefly the four phases of OMT model. Explain with example OMT Functional Model. CO1-U (16)
- Or
- (b) Discuss in detail about the different types of testing in OOAD. CO1-U (16)