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Question Paper Code : 90419

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Fifth/Sixth Semester

Computer Science and Engineering

CS 8592 – OBJECT ORIENTED ANALYSIS AND DESIGN

(Common to: Computer and Communication Engineering, Information Technology)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Domain Model and Interaction Diagrams.

2. What are the major phases of a UP project organization?

3. Brief about Risk, Coverage and Criticality.

4. What is FURPS+?

5. Differentiate the types of Interaction diagrams.

6. Draw a sample interaction Diagram.

7. What are the advantages of Bridge Pattern.

8. Define Observer Pattern.

9. List how the object oriented methodologies are classified into?

10. Write short notes on the steps involved in Test Design.

PART B — (5 × 13 = 65 marks)

11. (a) (i) List atleast five inception artifacts and brief about them.   (5)

        (ii) Design and Illustrate the use case model for activities involved in purchasing tickets to travel by the Chennai Metro Rail.   (8)

Or

(b) (i) Elaborate on how to find the Primary Actors, Goals and Use Cases using the example of a Hospital Management System. (8)

(ii) Explain the various formats of Use Cases. (5)

12. (a) (i) Discuss the architectural significance in Elaboration. Point out some key ideas behind planning and project management of the iterative steps in Elaboration. (5)

(ii) Using a suitable example, explain how to design a class. Provide all possible representations in a class (name, attribute, visibility, methods and responsibilities). (8)

Or

(b) (i) Domain Models are not models of Software Components. Justify. (5)

(ii) Summarize the strategies to find Conceptual classes. (8)

13. (a) (i) What is the need for a System Sequence diagram? (5)

(ii) What is state dependent and state independent diagrams and how to apply them? (8)

Or

(b) (i) Explain how synchronous and asynchronous messages are depicted in communication diagram. (5)

(ii) How are mutually exclusive conditional messages shown using Collaboration and Sequence diagrams? (8)

14. (a) What is GRASP? How to apply GRASP Patterns?

Or

(b) Walk through the detailed steps of mapping a design of your choice to code.

15. (a) (i) Design a test case for an ATM banking system. (6)

(ii) Describe the Booch Methodology of object oriented Analysis and Design. (7)

Or

(b) (i) Elaborate the different types of testing strategies. (6)

(ii) Discuss the Object Oriented System Testing. (7)

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PART C — (1 × 15 = 15 marks)

16. (a) Design a system to perform Bank ATM transaction, this system is for the bank client and the manager.

   (i) The bank client must be able to deposit and withdraw amount from his/her accounts using the ATM machine. Each transaction must be recorded and the client must be able to review all transactions performed in his/her account. Recorded transactions must include the date, time, transaction type, amount and account balance after the transaction. (5)

   (ii) The bank manager must be able to view the ATM machine status that is the total balance of the ATM machine, today's withdrawal, today's balance and the limitations of the machine. (5)

   (iii) The bank client is provided by login verification. If it is valid he/she will access their account otherwise an appropriate message is displayed to the client. (5)

Or

(b) Design a system through which students can register to the courses desired by them. (15)

   • The system is built to be used by students and managed by an administrator.

   • The student and employee have to login to the system before any processing can be done.

   • The student can see the courses available to him and register to the course he wants.

   • The administrator can maintain the course details and view all the students who have registered to any course.