Reg. No.:

Question Paper Code: 1045341

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024
Fifth Semester
Computer Science and Engineering
U20CS503 – OBJECT ORIENTED ANALYSIS & DESIGN
(Regulation 2020)

Time: Three Hours   Maximum: 100 Marks

Answer ALL questions

PART – A   (10 x 2 = 20 Marks)

1. Identify the attributes and methods of a dishwasher object.

2. Distinguish between method and message in object.

3. Compare and contrast coupling and cohesion.

4. Mention the benefits of bridge pattern.

5. Compare system testing and integration testing.

6. Mention the steps involved in mapping design to code.

7. State the purpose of UML interaction diagram.

8. Mention the strength and weakness of sequence diagram.

9. Sketch the use case model for bank ATM subsystems.

10. Differentiate Aggregation and Composition.

PART – B   (5 x 16 = 80 Marks)

11. (a) Narrate the case study of Bank ATM System. Identify the classes, corresponding attributes and methods involved in the system. Illustrate the components, association, super-sub classes, aggregation and part of relationships among the classes of the ATM system.   (16)

(OR)

(b) Sketch and discuss the notations of UML Component diagram for a Cool drink vending Machine.   (16)

12. (a) List out various design patterns and explain any two design patterns in detail. (16)

(OR)

(b) Discuss in detail about Creator, Controller and Information Expert. (16)

13. (a) Explain in detail about the design, artifacts to implement code in an object oriented language. (16)

(OR)

(b) Explain in detail about the different types of testing strategies in OOAD. (16)

14. (a) Describe in detail about the logical architecture and UML package diagram with example. (16)

(OR)

(b) illustrate and explain about Interaction Diagram Notation for inventory Management system. (16)

15. (a) Exemplify class hierarchy. Create a class hierarchy to organize the following drink classes: alcoholic, non-alcoholic, grape juice, mineral water, lemonade, and wine. Assume the drinks have following characteristics. (8)
   • Alcoholic drinks are not for drivers or children.
   • Non alcoholic drinks are thirst quenching
   • Wine is made of grapes and for adults only.
   • Grape juice is made from grapes and has the taste of fruit.
   • Mineral water is bubbling and does not taste like fruit.
   • Lemonade is bubbling and tastes like a fruit.

(ii)Discuss the process of Domain model refinement. (8)

(OR)

(b) A busy Restaurant consist of one chef, a customer and one waiter. The Chef is responsible for order all the food ingredients, preparation of the food and doing washing up. The waiter is responsible for taking the customer order, preparing bill and make payment made by the customer. The customer browses the menu, orders the food, consumes the food, orders the bill and pays the bill. Sketch and exemplify the components of use case diagram for the restaurant showing role of chef, waiter and customer with appropriate uses and extends relationship. (16)

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