Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80448

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024

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. Distinguish between method and messages in object Oriented design.

2. Compare include and extend use case relationships.

3. List the components of domain model. Brief anyone of those.

4. Write the role of conceptual sub class. How is it different from conceptual super class?

5. How synchronous and asynchronous messages are depicted in communication diagram?

6. What is package diagram? Classify the three layers of package diagram.

7. Write the Limitations of Factory Pattern.

8. Distinguish between coupling and cohesion.

9. List out the Myer's debugging principles.

10. Define Test Case and Test Plan.

PART B — (5 × 13 = 65 marks)

11. (a) Assuming automated the Library management system, assume functionalities. Perform the object oriented System Development and give the use case diagram for the same (use include, extend and generalization) (13)

Or

(b) (i) Generalize the concepts of Next Gen POS system? Briefly explain about Inception Phase. (7)

(ii) Identify the major difference between Evolutionary and water fall requirements. (6)

12. (a) Explain about elaboration and its techniques. Compare it with inception use and example.

Or

(b) (i) Elaborate about the relationship between sequence diagram and use case diagram. (8)

(ii) Compare and contrast Aggregation and Composition. (5)

13. (a) What is Collaboration diagram? How does it differ from sequence diagram? Design the collaboration diagram to model the details of a seminar. There system has to display the details of seminar and the courses enrolled in the seminar. Once the course is selected, the details of the students enrolled in the seminar should be displayed. The system should automatically displays the number of seats left to enroll for the seminar. The student should then be able to register in the course.

Or

(b) Consider the hospital management system application with the following requirements.

(i) System should handle the in-patient, out-patient information through the dashboard.

(ii) Doctors are allowed to view the patient history and give their prescription upon fixing a online schedule with out patients.

(iii) There should be an information system to provide the required information to all admin people.

Draw the state chart, component and deployment diagrams and explain.

14. (a) (i) Explain the advantages of using design patterns in object modeling. (5)

(ii) Explain in detail about the GRASP method for designing objects with example. (8)

Or

(b) Identify and describe the patterns that can be used for the following. Justify your selection.

(i) To provide an interface for crating families of objects without specifying classes. (7)

(ii) To ensure that a class has only one instance and provide a global point of access to it. (6)

15. (a) Explain Booch's methodology of object-oriented analysis and design. Compare it with Jacobson methodologies.

Or

(b) Analyze the Unit, Integration and system testing for testing a currency converter application.

PART C — (1 × 15 = 15 marks)

16. (a) Explain the methodology suggested by Shaler/Mellor, Coad/Yourdon, Rambausch and compare them to Booch. List the aspects by which the Booch analysis is successful.

Or

(b) Explain how an Airline Ticket reservation system can be automated. State the use cases. Draw the following UML diagrams and explain.

(i) Sequence and Collaboration diagram (booking a ticket) (7)

(ii) Activity diagram. (4)

(iii) State chart diagram. (4)