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

Question Paper Code : 50432

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.

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. Write the significance behind the object oriented analysis and design.
2. Compare include and extend use case relationships.
3. Enlist the component of domain model. Brief anyone.
4. Elucidate the role of Conceptual sub class. How it is differ 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. "A system must be loosely coupled and highly cohesive"- Justify.
8. Generalize the concepts of responsibility. What are the various types of responsibilities?
9. List the different kinds of errors you might encounter when you run your program?
10. Generalize the impact of an object orientation on testing.

PART B — (5 × 13 = 65 marks)

11. (a) Consider the online bookstore management system which has maintenance of stock, purchase of books if required and sales of a book to customer. Perform the object oriented system development and give use case model for the same which use include, exclude and generalization.

Or

(b) A Library lends books and magazines to member, who is 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. Design the use case diagram and discover the users and actors of this system and the interactions between them must be depicted.

12. (a) 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 Design and explain the classes for each sequence. Design the Use case and Class diagrams for designing this system.

Or

(b) Write briefly about elaboration and its techniques. Compare with inception with an example.

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

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

(ii) Doctors are allowed to view the patient history and give their prescription.

(iii) There should be a information system to provide the required information.

Explain and give state chart, component and deployment diagrams.

Or

(b) What is Collaboration diagram? How does it differ from sequence diagram? Design the collaboration diagram to model the details of a seminar. The display is to obtain the details of seminar and the courses enrolled in the seminar. Then it obtains the details of the seminar. . The display is to obtain the details of seminar and the courses enrolled in the seminar. Then it obtains the details of the students enrolled in the seminar. It finds the number of seats left to enroll for the seminar.

14. (a) Examine the following GRASP patterns:

(i) Creator, (3)

(ii) Information Expert, (4)

(iii) Low coupling, (3)

(iv) High cohesion. (3)

Or

(b) Create the observer pattern by using your own application and explain the sections of the design pattern.

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

Or

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

PART C — (1 × 15 = 15 marks)

16. (a) For the Next Gen POS systems design, explain the following Conceptual class hierarchies.

(i) Conceptual super class. (3)

(ii) Conceptual subclass. (4)

(iii) Authorization Transaction classes. (4)

(iv) Abstract Conceptual classes. (4)

Or

(b) Explain the GRASP pattern (Creator, Information Expert, Low coupling) by using Monopoly game.

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