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MCS-032

MASTER OF COMPUTER APPLICATIONS (M. C. A.) (Revised)
Term-End Examination
June, 2023

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 Hours *Maximum Marks : 100*

Note : *Question number **1** is compulsory. Attempt any **three** questions from the rest.*

1. (a) Draw class diagram data flow diagram for the scenario given below : 10

"A department wants to schedule meetings such as, meetings related to purchase committee, syllabus design committee etc. There is a list of members along with their addresses, for different meetings. Scheduling of meeting needs a room of sufficient size at a defined date and time. The members are informed through emails." Make necessary assumptions.

(b) Justify the statement "Aggregation is a special form of Association." Give suitable example to justify your answer. 5

(c) What is polymorphism ? Explain different types of polymorphism with suitable example. 5

(d) Briefly discuss the different notations of state diagram, and draw the state diagram for online chatting (considering the concurrency control). 5

(e) Explain the data persistence with suitable example. How can persistent data be identified ? 5

(f) What is association ? Explain two-way association with an example. 5

(g) What are Behavioural diagrams ? Name the diagrams, involved under the category of behavioural diagrams. 5

2. (a) What is the utility of collaboration diagram ? Discuss the various notations used in collaboration diagram, and use them to draw collaboration diagram for railway ticket reservation system. 7

(b) What is the use case diagram ? Briefly discuss the utility of use case diagram, also discuss the various notations of use case diagram. Draw use case diagram for Bank ATM system. 8

(c) Briefly discuss the concept of serialization, with suitable example. When and where is it required ? 5

3. Write short notes on the following (give suitable example for each) : 20

(i) Integrity constraints and its types

(ii) Concurrent Environment

(iii) Deployment diagram and its utility

(iv) Structural diagrams

4. Differentiate between the following : 5×4=20

(a) Structural Diagrams and Behavioural Diagrams

(b) Ternary Association and Binary Association

(c) Object Oriented Analysis and Object Oriented Design

(d) Dynamic Modeling and Functional Modeling.

5. (a) What is event trace diagram ? Draw event trace diagram, for withdrawing money, checking balance and transferring money in the bank using ATM Card. 7

(b) What is Object Oriented Modelling ? Explain the role of message passing in object oriented systems. 5

(c) Briefly discuss the different notations of DFD (Data flow diagram). Draw a DFD for computing the volume and surface area of a cylinder. Inputs are height and radius of the cylinder. Outputs are volume and surface area. 8