

**MASTER OF COMPUTER  
APPLICATIONS (MCA-NEW)**

**Term-End Examination**

**December, 2023**

**MCS-219 : OBJECT ORIENTED ANALYSIS AND  
DESIGN**

*Time : 3 Hours*

*Maximum Marks : 100*

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**Note :** *Question No. 1 is compulsory. Attempt any  
three questions from the rest.*

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1. (a) “Object Oriented Analysis and Design is better than Structured Analysis and Design.” Explain in detail. Justify the above statement. 10

- (b) What is UML ? What are its advantages ?  
Draw class diagram for an ATM system. 10
- (c) What is inheritance ? Explain advantages  
of inheritance. 5
- (d) What is an association ? Explain use of  
link in representation of association with  
the help of a diagram. 5
- (e) What is design documentation ? Briefly  
explain the features of a good design  
documentation. 5
- (f) What is a functional model ? Which  
diagram is used in functional modeling ?  
Explain in brief. 5
2. (a) What is State Transition Diagram ? Draw  
State Transition Diagram for an ATM  
machine/system. 10

- (b) What is Generalization ? How is it different from Specialization ? Explain with an example using suitable UML diagrams. 10
3. (a) What is a constraint ? Explain how constraints are shown in a class diagram. 5
- (b) What is serialization ? Explain its use. 5
- (c) Explain the difference between unidirectional and bidirectional association. Describe how bidirectional association is implemented. 10
4. (a) What is a component diagram ? What are its advantages ? Draw component diagram for ATM system. 10
- (b) What is Aggregation ? Explain the use of aggregation in object oriented system design with the help of an example. 10

5. Write short notes on the following :  $4 \times 5 = 20$

- (a) Abstract class
- (b) Use case Diagram
- (c) Sequence Diagram
- (d) Object Class and Database Tables