

MCA/D-17

10314

OBJECT ORIENTED ANALYSIS AND DESIGN USING UML  
Paper - MCA-14-31

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt five questions in all. Q. No 1 is compulsory.  
Attempt four more questions selecting one question  
from each unit.

## Compulsory Question

1. Answer the following questions in brief:

- (a) Explain the following terms in UML: collaboration note, stereotype, active class.  
(b) Distinguish between concurrency and modularity.  
(c) Explain the following w.r.t. state modeling : action, activity, call event, time event.  
(d) What do you mean by hardware and software trade-offs? Explain.

(4×4=16)

## UNIT-I

- (a) What are extensible mechanism in UML? Explain them with suitable examples. 8  
(b) What is dependency relationship in UML ? Explain different types of usage dependencies with a suitable examples of each. 8

1314/400/KD/1270

[P.T.O.

3. (a) What is deployment diagram ? Explain with an example. 8  
(b) What is object diagram ? Explain with an example. 8

## UNIT-II

Explain in the following concepts with examples : (unary) association, ternary association, qualifier, aggregation, multiple inheritance, meta data association attribute, sequence. 16

- (a) What are constraints ? What are different types of constraints ? Explain with examples. 8  
(b) Draw a class diagram for University Registration System showing all possible association end names. 8

## UNIT-III

- (a) What is state diagram ? Draw a state diagram to withdraw money from ATM. www.KUonline.in 8  
b) What is use case diagram ? Draw a use case diagram for a cell phone. 8  
(c) What is sequence diagram ? Draw sequence diagram to send an SMS. 8  
(d) Draw activity diagram to delete a message in cell phone using concept of swim lanes. 8

**UNIT-IV**

8. (a) What is application class model ? Explain the steps of this model. 8  
(b) Explain any four common architectural styles. 8
9. Differentiate between the following :  
(a) Frame work and pattern. 5  
(b) Procedure-driven and event-driven control. 5  
(c) Functionality layer and mechanism layer. 6
-