No. of Printed Pages : 3

MCS-032

MCA (Revised)
Term-End Examination
June, 2016

01096

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 hours *Maximum Marks : 100*

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

1. (a) What are Associations in UML ? How are Associations implemented in C++/Java ? Explain with suitable example/code. *5*

(b) Explain the role of message passing in object oriented system. *5*

(c) Briefly discuss the need of design optimization in object oriented systems. List the ways through which the object oriented systems design can be optimized. *5*

(d) What is the utility of Object ID in object oriented systems ? *5*

(e) What are the steps involved in implementing persistence in object oriented systems ? *5*

(f) Draw a state diagram for online submission of examination form. 5

(g) Draw an activity diagram for compressing a file and sending it through an email, as an attachment. 5

(h) Discuss the role of Object model and Dynamic model in object oriented modelling. 5

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

(a) Collaboration Diagram and Interaction Diagram

(b) Static binding and Dynamic binding

(c) Packages and Subsystem

(d) Abstract class and Concrete class

3. Discuss the following, with suitable examples : *4×5=20*

(a) Integrity constraints and its types

(b) Multiple Inheritance

(c) UML state diagram

(d) Serialization

4. (a) What do you understand by the term "Concurrency" ? Which model is perfect enough to describe concurrency in a UML diagram and why ? When can you say that two objects are concurrent ? Briefly describe any two concurrency issues. *10*

(b) Briefly discuss the advantages of two-way associations. *5*

(c) How are constraints implemented in object oriented languages ? Give an example/code in support of your answer. *5*

5. (a) What is object oriented decomposition of systems ? Explain briefly. *5*

(b) Draw a DFD for computing the volume of a sphere. Input is radius of the sphere and output is volume of the sphere. *5*

(c) Write short notes on the following : *5×2=10*

(i) Use Case Diagram

(ii) Class Diagram

(iii) Inheritance Adjustment

(iv) Metaclass

(v) Data Dictionary