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BICSE-010

**B.Tech. – VIEP – COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

00556

December, 2014

BICSE-010 : DATA MODELLING AND UML

Time : 3 hours

Maximum Marks : 70

Note : Answer any *seven* questions. All questions carry equal marks. Assume suitable missing data, if any.

1. (a) How do object-oriented analysis and design techniques differ from classical analysis and design techniques ? 5
- (b) Object model describes the statical aspect of system. Explain the statement. 5
2. Design a class diagram to illustrate 'A Company Database System'. 10
3. (a) What is a one-shot state diagram ? Design a one-shot state diagram for chess game. $1+4=5$
- (b) What is a use-case diagram ? Draw a use-case diagram for ATM system from the users' perspective. 5
4. (a) What is generalization ? Organize the following set of classes into hierarchies : 5
Circle, Point, Rectangle, Matrix, Ellipse, Line, Plane.

(b) Define the following terms : $2\frac{1}{2} + 2\frac{1}{2} = 5$

(i) Operation

(ii) Polymorphism

5. What are the different components of a state diagram ? Draw a state diagram for a flight reservation system. 10
6. (a) What is multiplicity ? How is it represented in a class diagram ? 5
- (b) Describe association and link, with the help of proper example. 5
7. (a) Explain in brief, the solution domain in object-oriented modeling. 5
- (b) Aggregation is a special form of association. Justify the statement. 5
8. (a) Which aspects of a system does a functional model deal with ? Describe data flow diagram with proper example. 5
- (b) Differentiate between the include relationship and the extend relationship. 5
9. What is an activity diagram ? How is it different from state diagram ? Explain with the help of an example. 10
10. Write short notes on any *two* of the following : $5+5=10$
- (a) Falsification
- (b) Aggregation
- (c) UML terminology