

Total No. of Questions : 10]

SEAT No. :

**P3126**

**[5154]-692**

[Total No. of Pages : 2

**B.E.(Information Technology)**  
**SOFTWARE MODELING AND DESIGN**  
**(2012 Pattern) (Semester-I)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
- 2) Figures to the right indicate full marks.*
- 3) Draw appropriate diagrams using UML 2.0 notations.*
- 4) Use of non programmable electronic calculator is allowed.*

- Q1)** a) Elaborate the keywords class, association name, association end name and multiplicity with an example. **[6]**
- b) Elaborate extend, include with the context of use case diagram using an example. **[4]**

OR

- Q2)** a) Elaborate on association, aggregation and composition with an example. **[6]**
- b) Write a short note on representation of constraints using UML2.0 **[4]**
- Q3)** a) Define a state, transition, entry, exit, and do action in the context of state diagram. **[6]**
- b) Explain the expansion region in the context of activity diagram. **[4]**

OR

- Q4)** a) What is the relation between use cases and sequence diagram? Explain the keywords participants, time line, focus of control, synchronous message with respect to sequence diagram. **[6]**
- b) Elaborate composite state and concurrent state with an example. **[4]**
- Q5)** a) Describe batch transformation and continuous transformation. **[8]**

**P.T.O.**

- b) Write the purpose of deployment diagram. Draw & explain the following element of deployment diagram. [8]

- i) Node
- ii) Artifact
- iii) Node instance

OR

- Q6)** a) Explain layered architecture & partitions. [8]

- b) Draw component diagram for online shopping system. [8]

- Q7)** a) What is design pattern? Explain 4 essential elements of patterns. [8]

- b) Explain the Design pattern documentation. [8]

OR

- Q8)** a) Write a short note on [8]

- i) Observer design pattern.

- ii) State design pattern.

- b) Write the classification, motivation, class diagram and uses of adapter design pattern. [8]

- Q9)** a) Differentiates between Black box testing and white box testing. [8]

- b) Draw and explain V-model of testing. [10]

OR

- Q10)** a) Test Driven development: Explain in brief [8]

- b) Define software validation and software verification. [10]

Explain verification and validation concept by considering the following statements:-

- i) Are we building the product right?
- ii) Are we building the right product?

