

Total No. of Questions : 10]

SEAT No. :

P3386

[Total No. of Pages : 2

[5353] - 589

**T.E. (Computer Engineering)**  
**SOFTWARE MODELLING AND DESIGN**  
**(2015 Pattern)**

Time :  $2\frac{1}{2}$  Hours]

[Max. Marks : 70

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) State and explain how UML supports requirements modeling? [5]  
b) Explain the elements of a class diagram with an example. [5]

OR

- Q2)** a) Explain the application of composite structure diagram. [5]  
b) Explain Orthogonal State with a suitable diagram. [5]

- Q3)** a) Explain any two operators used in sequence diagram with an example. [5]  
b) Explain the difference between component diagram and deployment diagram in UML. [5]

OR

- Q4)** a) Explain with an example the difference between aggregation and composition. [5]  
b) Draw an activity diagram for the functionality : credit card validation. [5]

**P.T.O.**

- Q5)** a) Explain Client Server architecture for Software Design. [8]  
b) Explain the importance of Object oriented software architecture and its applicability in software development. [8]

OR

- Q6)** a) Explain the broker pattern for design of service oriented architecture. [8]  
b) Explain the real time software architecture with a suitable example. [8]
- Q7)** a) Explain factory pattern. Describe its intent, motivation and implementation with suitable example. [8]  
b) What are design pattern and explain its significance in modern software development. [8]

OR

- Q8)** a) Draw the structure of observer pattern with suitable class diagram including subject and observer. [8]  
b) What is singleton pattern? Explain one example scenario where you will singleton pattern to get applied. [8]
- Q9)** a) Define test case? Why is it necessary to develop test cases for both valid and invalid input condition? [6]  
b) Define error, fault and failure with a suitable example. [6]  
c) Explain the types of Integration testing. [6]

OR

- Q10)** Write a short note on (Any 3): [18]  
a) Scenario testing.  
b) Integration testing.  
c) Performance testing.  
d) Acceptance testing.

