

[5460] - 589

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

2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- i) Q.1 and Q.2 are compulsory. Solve Q. 3 or Q.4, Q.5 or Q.6 and Q. 7 or Q.8.
- ii) Assume suitable data if required.
- iii) Figure to the right indicates full marks.

i) Explain the difference between procedural/structural and Object-Oriented paradigm of design [5]

ii) Write a use case specification for the use case: User authentication? [5]

i) Draw sequence diagram for Event registration system? [5]

ii) Why class diagram is important in static modeling? Explain different relationship used in class diagram? [5]

i) Explain synchronous communication pattern in Client server architecture with example? [6]

ii) Explain Location & Platform transparency in service oriented architecture? [6]

iii) Write short notes on [6]

i) web registration services

ii) Brokering & discovery services

OR

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Q4) a) Explain asynchronous message communication with call back pattern with suitable example? [6]

b) Explain important characteristic of real time software architecture? [6]

c) Explain dynamic view of software architecture with the help of example? [6]

Q5) a) Explain proxy pattern? Describe its intent, motivation, Applicability & implementation with example? [6]

b) Draw structure of observer pattern with suitable class diagram including subject and observer? [6]

c) Write short note on [4]

i) Port provided & required interface

ii) Real time software architecture

OR

Q6) a) Explain Behavioral Design Pattern in short? [4]

b) Explain factory pattern? Describe its intent, motivation & implementation with example? [6]

c) What is singleton pattern? Explain one example scenario where you will Singleton pattern to get applied? [6]

Q7) a) What is integration testing; Explain its type in details? Define Stub & Driver? [8]

b) What is Black box testing? Why it is called BBT? Also explain boundary value analysis? [8]

OR

Q8) a) Explain graph based testing with suitable example? [6]

b) Compare white box testing and black box testing. [4]

c) What is performance testing? List few tools of performance testing? [6]

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