Total No. of Questions : 10]

SEAT No. :

P3386

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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.