[5154]-692

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?

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