[4960] - 1311

M.E. (Computer Engineering)
Software Design and Architecture
(2013 Pattern) (Semester-II)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates:

1) *Neat diagrams must be drawn wherever necessary.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*

Q1) a)   i)   Describe design patterns and why they are important in modern software development? **[8]**

         ii)   How are design patterns classified? Explain in brief any two patterns under each class.

   b)   Consider a typical 3 - tier web application. How is the functionality of the Application Logic achieved in all the three tiers. What are the benefits of using a typical 3 - tier architecture? **[8]**

<div align="center">OR</div>

Q2) a)   Describe the most common and important system quality attributes? Explain Modifiability and Performance Quality attributes in detail. **[8]**

   b)   Discuss the major phases of the Software Design Process. Illustrate the characteristics of an exceptional designer. **[8]**

Q3) a)   i)   How is Software Architecture documented? **[8]**

         ii)   What are Context diagrams? What do they depict?

   b)   i)   List and explain the major design elements for which software architecture documentation is very critical? **[8]**

         ii)   What do you mean by Combined views? What is its importance?

<div align="center">OR</div>

Q4) a) List and explain the various Software Documentation principles that are followed to generate a good document? **[8]**

b) i) Explain Views, Viewtypes and Styles. **[8]**

ii) For a particular system how are relevant views identified? Explain with an example.

Q5) a) i) What are component-and-connector styles? **[9]**

ii) Give examples of variation in implementation of the component-and-connector styles.

b) Write short notes on **[9]**

i) Hierarchical Architecture

ii) Customer Relationship Management

OR

Q6) a) i) What are Archetypes and Patterns, explain with an example **[9]**

ii) State the UML profile for Archetypes.

b) Explain the two design principles with proper examples. **[9]**

i) Principle of Decoupling

ii) Ensuring Cohesion