

Total No. of Questions : 12]

SEAT No. :

P1805

[4859]-208

[Total No. of Pages : 3

**B.E. (Computer Engineering)
SOFTWARE ARCHITECTURE**

(2008 Course) (Semester-I) (Elective-I(d)) (410444)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answers to the two sections should be written in separate answer books.*
- 2) From section-I Answer (Q. 1 or Q. 2) and (Q. 3 or Q. 4) and (Q. 5 or Q. 6).*
- 3) From section-II Answer (Q. 7 or Q. 8) and (Q. 9 or Q. 10) and (Q. 11 or Q. 12).*
- 4) Neat diagrams must be drawn wherever necessary.*
- 5) Figures to the right indicate full marks.*
- 6) Assume suitable data, if necessary.*

SECTION-I

- Q1)** a) Consider Civil Engineering / Architects profession of designing and constructing residential/office buildings. What is the difference between the role of architect and civil engineer? Similarly a software architect also helps build software with quality like security, performance etc. What is the difference between roles played by programmer and an architect. Explain with examples how software architect and architecture contributes to any software System's quality. **[9]**
- b) What is a deployment diagram? What kind of architectural decisions/ scenarios does a deployment diagram depict? Show the following two tier web application scenario using a deployment diagram. Scenario: Browser based client using HTTP to access static web pages. **[9]**

OR

Q2) Write short notes on Any Three: **[18]**

- a) Software design.
- b) Synchronous and asynchronous messaging.
- c) Software architect and his/her role in IT industry.
- d) Software architecture and functional/nonfunctional requirements.
- e) Software architecture and 4+1 views.

P.T.O.

- Q3)** a) Consider a hypothetical PAYROLL (employee salary) system. State the likely functional requirements for the system. Assuming a role of an software architect, discuss importance of accuracy, performance, data Confidentiality for your system. [8]
- b) What is importance of availability of a system? How availability of a system is achieved through various availability tactics. [8]

OR

- Q4)** Explain and illustrate the following concepts (in context of quality attribute/ tactics) with examples, in brief: [16]
- a) Authorization versus authentication.
- b) UNDO command in Microsoft word.
- c) Dynamic, interactive websites.
- d) Testability, userfriendliness.

- Q5)** a) Define Design pattern. What are the types of design patterns? Explain in brief. [8]
- b) Give structure of Façade. Explain with real life example. [8]

OR

- Q6)** IN CONTEXT OF OBSERVER PATTERN answer the following: [16]
- a) How does action listener (event listener) in java work.
- b) What is publish subscribe.
- c) What are roles of subject and observer?
- d) Give a non-software example of observer pattern.

SECTION-II

- Q7)** a) What is XSLT, XML DOM parsers? [6]
- b) Compare and contrast J2SE and J2EE. [6]
- c) What is JDBC-ODBC driver, prepared statement in JDBC. [6]

OR

- Q8)** a) Explain role of middleware in 3-tier architecture. [6]
b) Write note on application server. [6]
c) What is socket? Enlist and explain different classes used in Java for socket programming. [6]

Q9) Briefly describe need, role, use of following technologies. [16]

- a) AJAX.
- b) DOM tree.
- c) Rich Internet applications.
- d) DHTML.

OR

Q10) a) Explain various technologies available to develop client side. [8]

- b) Explain n-tier web architecture. [8]

Q11) a) With neat diagram explain MVC. Also explain how it is supported by Java. [8]

- b) What is Service Oriented Architecture? [8]

OR

Q12) a) What is XML, SOAP? [8]

- b) What is STRUTS and what are its advantages? [4]
- c) Explain servlet life cycle. [4]

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