

UNIVERSITY OF PUNE
[4364]-767
B. E. Computer Engineering
Examination – May 2013
SOFTWARE ARCHITRCTURE
(2008 Pattern)

Total No. Of Questions: 12

[Total No. Of Printed Pages: 4]

[Time: 3 Hours]

[Max. Marks: 100]

Instructions:

- (1) *Figures to the right indicate full marks.*
- (2) *Answers to the **two sections** should be written in **separate answer-books**.*
- (3) *From Section I, Answer (Q1 or Q2) and (Q3 or Q4) and (Q5 or Q6)*
- (4) *From Section II, Answer (Q7 or Q8) and (Q9 or Q10) and (Q11 and Q 12)*
- (5) *Make suitable assumptions wherever appropriate and relevant.*

SECTION-1

- Q. 1. 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

OR

- Q. 2. A) When and why will a software architect choose following choices for (6)
- Any system, Justify with example

i) ODBC ii) C language iii) ORACLE

B) How can the architect use component diagram to show components (6)

And interfaces, explain components/ interfaces with an example diagram.

C) Write short notes on software design and its impact on application. (6)

Q. 3. A) Consider a hypothetical PAYROLL (employee salary) system. State (8)

The likely functional requirements for the system. Assuming a role of an software architect, discuss importance of accuracy, performance, data Confidentiality for your system.

B) What do you understand by quality of software. State what do (8)

Understand by modifiability of software system?. What are the Challenges in making changes to software?

Draw a diagram for modifiability tactics. And discuss in brief on

Modifiability tactic : localize changes

OR

Q. 4. Explain and illustrate the following concepts (in context of quality (16)

Attribute) with examples, in brief

a) Importance and challenges of security for a university online Exam website

b) Quality attribute scenarios

c) Define any two software quality attributes

d) Tactics for recovery from database failures

Q. 5. a) Explain in brief, terms: architectural patterns and architecture (4)

b) Write on history and the need of design patterns (6)

c) Write short notes on MEDIATOR pattern (6)

OR

- Q. 6. a) Explain what are design patterns. Further illustrate design patterns (4)
Using examples from specifically a NON-SOFTWARE context
- b) Which design pattern will you choose you in following (6)
CONTEXT and why? Explain how the pattern will work with UML diagrams, CONTEXT is that you wish to create objects in your application Dynamically?
- c) Write and Illustrate with relevant examples the relation of UML and (6)
documentation of design patterns

SECTION-2

- Q. 7. a) What is the role of following technologies: JAVA SE, JAVA EE (6)
- b) What kind of application can be developed in RPC, and how is RPC (6)
of benefit for such application
- C) Write short notes on application servers (6)
- OR
- Q. 8. a) Write short notes on EJB components and interfaces (6)
- b) Drew a neat labeled diagram for three tier use of J2EE (6)
- c) Explain working of RPC with sample code (6)

- Q. 9. a) What kind of responsibilities does a web client have in a web (4)
Application
- b) Explain following web client side concepts through simple examples (6)
i) plug-ins ii) browser configuration
- c) Explain following web client side concepts through simple examples (6)
i) Client side validation ii) HTML 5

OR

- Q. 10. a) Discuss the importance of IT in any enterprise (4)
b) Discuss the concept of N tiers in web application (6)
c) Discuss what different technologies are available to develop client side in web based systems. (6)
- Q. 11. In context of JAVA struts, write on (16)
a) Advantages of java
b) Concept of ACTIONS
c) What is JSP and what is the role of JSP in STRUTS
d) Advantage of STRUTS

OR

- Q. 12. a) How is role of server side different from client side in a typical Website. (4)
b) What is UDDI (4)
c) Define terms : service oriented architecture, web services (4)
d) What is the role of middle tier in 3 Tier application, Illustrate (4)