

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 17290

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Elective

Computer Science and Engineering

CP 7014 — SOFTWARE ARCHITECTURES

(Common to M.E. Computer Science and Engineering (With Specialization
in Networks))

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the difference between reference architecture and an architectural pattern?
2. Brief on six parts scenarios.
3. What is meant by views? How will you represent it?
4. How do ADL differ from programming languages?
5. Draw a diagram for state transition architecture.
6. List out the common architectural style used in software architecture.
7. How can you describe a system using software architecture style?
8. What are the performance measures that can be considered in architectural design?
9. What are the steps used to create your own web service?
10. Write about the significance of SOA.

PART B — (5 × 13 = 65 marks)

11. (a) (i) With the help of neat diagram of ABC (Architecture Business Cycle), explain in detail the different activities which are involved in creating software architecture. (7)
(ii) Describe about the quality attributes in various categories. (6)

Or

- (b) (i) Describe the technical importance of software architectures. Elaborate on the fact that architecture is a vehicle for stakeholder communication. (8)
(ii) Discuss about how the software architecture affects the factors of influence. (5)

12. (a) (i) Discuss about documenting the views using UML with suitable diagram. (7)
(ii) Explain about the good practices in documenting software architecture. (6)

Or

- (b) (i) Analyze the need for formal languages in software architecture. (6)
(ii) State the merits and demerits of visual languages. (7)
13. (a) Discuss about the importance and advantages of the architectural styles with reference to an appropriate application area, (13)

Or

- (b) (i) Explain about shared information styles in detail with neat example diagram. (9)
(ii) Draw a diagram to represent main-program-and-subroutine architecture using call-return style. (4)
14. (a) Explain about the design process of software architecture based on the quality attribute using Attribute Driven Design (ADD) approach. (13)

Or

- (b) Explain about various specific quality attributes used for architectural design. (13)
15. (a) Explain about the different phases of ATAM. Mention the purpose of ATAM in architecture evaluation. (13)

Or

- (b) Discuss about technologies underlying web services based on SOA. Examine some of the steps involved for migrating legacy applications into web services. (13)

PART C — (1 × 15 = 15 marks)

16. (a) If you were going to evaluate the architecture for a system, who would you want to participate? What would be the stakeholder roles and whom could you get to represent those roles? (15)

Or

- (b) An organization has identified a number of qualities that made the WWW successful : interoperability, portability, remote access, extensibility, and scalability. Which of these do you think contributed most substantially to the Web's success? If any of these qualities had been sacrificed, would the Web still have been successful? What tradeoffs did these quality goals entail in the architecture of applications based upon WWW? (15)