

**End Semester Examination, November, 2019**

**M.Tech CSE, Specialization-Software Engineering, Subj:- Software Architecture (CS6403)**

**Time: 3 Hours, Full Marks: 50,**

**(Please attempt any FIVE questions. Question 1 is compulsory)**

1.
  - a. Explain three-tier architectural pattern with a suitable diagram.
  - b. List out various architectural styles. What are the important benefits of following a style?
  - c. Explain the role of barrel in software architecture of google.
  - d. Describe the roles of trust management with proper architectural approach.
  - e. What are the desired skill set of a good architect?
2.
  - a. Explain prescriptive and descriptive architectures for design as well as implementation with proper diagram.
  - b. Write the important roles of various connectors. What are the salient features of client-server based data distribution connectors with proper diagram?
3.
  - a. Explain KOALA with single and two systems. Write all the evaluation parameters of KOALA.
  - b. What is an architectural visualization? Write the types of visualization. Explain models and visualizations with neat diagram.
4.
  - a. Describe the architectural framework with a suitable canonical example. Write the evaluation parameters for it.
  - b. How does the decentralized architecture work? Explain the Gnutella architectural style with proper diagram.
5.
  - a. Explain business and engineering product lines with proper graphical representation. Explain Lunar Lander with respect to the product line.
  - b. Explain REST web service. Write all the principles and constraints associated with REST.
6.
  - a. What are the key features associated with DoDAF and TOGAF. Explain with block diagram.
  - b. Explain Douglas McGregor's Theory on work-motivation and Victor Vroom's Valence theory.
7. Write short notes on:
  - a. Mobile robotics with S-P-A concept.
  - b. PACE architectural style.
  - c. Performance penalty induced by distance in the architectural configuration.

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