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12SCS253

Second Semester M.Tech. Degree Examination, Dec.2014/Jan.2015
Protocol Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. What is communication? Explain the different subsystems in communication model. Mention the key tasks of communications. (07 Marks)
- b. What is communication software? Illustrate some examples of communication softwares. (05 Marks)
- c. Define communication protocol. Draw the flowchart for simple message exchange protocol and explain in brief. (08 Marks)
- 2 a. Explain some of the transmission errors. (05 Marks)
- b. What is the need for negative acknowledgement? (05 Marks)
- c. Write a note on :
 - i) Congestion avoidance
 - ii) Cyclic redundancy checks. (10 Marks)
- 3 a. List the protocol functions and explain them in brief. (10 Marks)
- b. Give the OSI reference model and explain the function each layer. (10 Marks)
- 4 a. What is service specification? Give the FSM for service specification for reliable data transfer by using service primitives. Explain in brief service events and their actions. (10 Marks)
- b. Briefly describe the protocol entity specification. (10 Marks)
- 5 a. What is protocol specification language? Mention the different protocol specification language. (05 Marks)
- b. Give the salient features of SDL. (05 Marks)
- c. Briefly describe the QA protocol. (10 Marks)
- 6 a. What is the need for protocol verification and validation? Explain the safety and liveness properties of a protocol. (10 Marks)
- b. Explain the following protocol design errors :
 - i) State deadlock
 - ii) Unspecified reception. (10 Marks)
- a. Draw a conceptual conformance test architecture and explain each component, in brief. (10 Marks)
- b. Write an algorithm "Test subsequence generation using U – method" and explain in brief. (10 Marks)
- 8 a. What is protocol synthesis? Explain the interactive synthesis algorithm. (10 Marks)
- b. Briefly describe all the steps in protocol implementation framework. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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