Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 71221

M.E. DEGREE EXAMINATION, JUNE/JULY 2013.

Elective

Communication Systems

CU 9251/CU 951/10244 CME 41 — COMMUNICATION PROTOCOL ENGINEERING

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the need for protocol engineering.

2. What are the advantages of layered architecture?

3. Mention the components of a protocol.

4. Distinguish between internal and external interfaces.

5. Distinguish between liveness and correctness properties of a protocol.

6. What are the objectives of protocol verification/validation?

7. Write the problems solved by conformance testing.

8. Draw the general distributed test architecture.

9. What is meant by protocol synthesis?

10. Mention the tools suitable for protocol engineering.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the protocol functions in detail (10)

(ii) Give an overview of the OSI model (6)

Or

(b) (i) Describe the representation of protocol and the protocol development methods. (8)

(ii) Give a brief note on TCP/IP protocol suite. (8)

12. (a) (i) Discuss the multimedia and internet protocol specifications with suitable examples. (10)

(ii) Give a brief account on protocol entity specification. (6)

Or

(b) (i) Discuss the salient features of SDL and describe its applications in protocol specification. (12)

(ii) Discuss the different protocol specification languages other than SDL. (4)

13. (a) (i) Explain the different protocol design errors in detail. (10)

(ii) Discuss the applications of FSM in protocol verification. (6)

Or

(b) (i) Describe the various protocol validation approaches. (8)

(ii) Explain the applications of SDL in protocol validation and verification. (8)

14. (a) (i) Explain the conformance test architectures in detail. (10)

(ii) Write a short note on scalability testing. (6)

Or

(b) (i) Describe the test sequence generation methods. (10)

(ii) Discuss interoperability testing. (6)

15. (a) (i) Explain the interactive and automatic synthesis algorithms. (8)

(ii) Give a short account on object-based approach to protocol implementation. (8)

Or

(b) (i) Describe the requirements of protocol implementation. (8)

(ii) Explain the protocol compilers in detail. (8)
