A 1239

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Fifth Semester

Information Technology

IF 352 — COMPUTER NETWORKS

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Distinguish between synchronous and asynchronous transmission.

2. What is circuit switching?

3. Explain the main function of Data link layer.

4. What are the advantages and disadvantages of fined routing?

5. What are the relative advantages and disadvantages of frame relay compared to X.25?

6. What are the four ATM service classes? Give the type of customer for each services.

7. Discuss the importance of CSMA/CD.

8. What is a collision?

9. What are the four factors needed for a secure networks?

10. Why is Network Virtual Terminals (NVT) needed in the remote login?

PART B — (5 × 16 = 80 marks)

11. (i) Explain about TDM and FDM, clearly, in detail. Make a comparison between them.   (10)

    (ii) What are the two popular approaches to packet switching? Explain one approach in detail.   (6)

12. (a) Explain in detail the ISO – OSI layered Architecture neat diagram. Explain in detail the functions of each layer in the OSI architecture. (16)

Or

(b) Explain in detail with an example distance vector and link state routing. (16)

13. (a) (i) Explain in detail using neat diagrams the Frame relay operation using PVC and SVC. (10)

(ii) Explain the behaviour of a switch in a frame relay network using Leaky Bucket algorithm. (6)

Or

(b) Draw a neat sketch showing the Architecture of an ATM network and describe the various layers and the associated sub layers. (16)

14. (a) Explain the highlights of LAN. Describe token bus and token ring schemes in LAN. (16)

Or

(b) (i) Describe the slotted ALOHA method of transmission. (8)

(ii) Derive an expression for the throughput in the case of slotted ALOHA. (8)

15. (a) (i) Explain how access authorization can be achieved using secret key and public key using simple message flow diagram. (8)

(ii) What is the importance of digital signature? Explain the process of signing the digest at the sender end and its verification at the receiving end using necessary diagrams. (8)

Or

(b) (i) Define cryptography and explain its need. (3)

(ii) Discuss the advantages and disadvantages of Secret key cryptography and asymmetric key cryptography. Explain the steps involved in RSA algorithm. (13)

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