Z 3511

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Third Semester

MC 1701 — COMPUTER NETWORKS

(Regulations 2005)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What are the key elements of protocols?

2.   How do layers of the internet model correlate to the layers of the OSI model?

3.   What is meant by NIC and NAT?

4.   Mention the sublayers datalinklayer in IEEE standard.

5.   How do the subnet mask and supernet mask differ?

6.   What are the important fields in a routing table?

7.   Compare circuit and packet switching.

8.   List the three phases of TCP connection.

9.   Name the policies that can prevent congestion.

10.   In symmetric key cipher, how many secret keys are needed for 'n' users?

PART B — (5 × 16 = 80 marks)

11. (a) What are requirements for reliable connection? Explain in detail about OSI layer reference model?

Or

(b) (i) Distinguish between forward error correction versus error correction by retransmission.

(ii) Find the status of the following generators related to two isolated single bit errors.

(1) $x^7 + x^6 + 1$

(2) $x^4 + 1$.

12. (a) Give a brief description of the following :

(i) LAN Topology

(ii) Compare the performance of BUS and Ring topology.

Or

(b) Discuss in detail Transmission on Media for LAN and compare their characteristics.

13. (a) Explain the differences between adaptive and nonadaptive routing algorithm. Give one algorithm from each of the above mentioned class.

Or

(b) With neat diagrams explain Bridges and LAN Switches.

14. (a) Discuss in detail various TCP congestion control mechanism.

Or

(b) Explain User Datagram Protocol format and use of UDP in detail.

15. (a) What is S–P network? Explain the characteristics of good ciphers? How Encryption differ from Compression?

Or

(b) Explain the following :

(i) SMTP

(ii) Compare Private and Public Key Techniques

(iii) SNMP.

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