B.Tech. Examination, 2017

(Sixth Semester)

(C.S. & I.T.)

Paper - III

COMPUTER NETWORK

Time Allowed : Three Hours

Maximum Marks : 100

Note : Attempt any five questions. All questions carry equal marks.

Q. 1. (a) What is OSI model for networks, also compare OSI model to TCP/IP protocol suite. **10**

(b) Compare and contrast the twisted pair cable, coaxial cable and optical fiber transmission medium. **10**

Q. 2. (a) Discuss the packet switching principle. How it is different from circuit switching ? **10**

(b) A pure ALOHA network transmits 200 bit frames on a shared channel of 200 Kbps. What is the throughput if the system (all stations together) produces : **10**

(i) 1000 frames per second

(ii) 500 frames per second

(iii) 250 frames per second

Q. 3. (a) The code 10010100101 was received. Using the Hamming encoding algorithm, what is the original code sent ? **10**

(b) Explain the working of FDDI networks and enumerate its advantage and disadvantage. 10

Q. 4. (a) What are the two types of sliding window ARQ error control ? How do they differ from one another ? 10

(b) What do you mean by routing algorithms ? Explain distance vector routing. 10

Q. 5. (a) What is congestion ? Differentiate between token bucket and leaky bucket algorithms. 10

(b) Differentiate between IPv4 and IPv6. Also explain the header of IP datagram. 10

Q. 6. (a) Discuss the design issues of transport layer. Explain the terms connection management. 10

(b) Explain the concept of TCP-Window Management. 10

Q. 7. Write short notes on any four of the following : 5×4=20

(i) Cryptography

(ii) SMTP

(iii) POP_3

(iv) ALOHA

(v) CSMA/CD

(vi) ISDN

(vii) Remote procedure call

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Paper - III

COMPUTER NETWORK

Time Allowed : Three Hours

Maximum Marks : 100

Note : Attempt any five questions. All questions carry equal marks.

Q. 1. (a) Define topology and explain the advantages and disadvantages of Bus, Star and Ring topologies. 10

(b) Discuss the TCP/IP protocol suite on the basis of layering principle. 10

Q. 2. (a) Explain IEEE 802.3 and the Ethernet. 10

(b) Briefly explain the sliding window protocols. 10

Q. 3. (a) Sketch the IP header neatly and explain the function of each field. List major differences between IPv4 and IPv6. 10

(b) What is meant by congestion ? Discuss leaky bucket algorithm. 10

Q. 4. (a) Discuss different steps of JPEG compression standard. 10

(b) Show the working of RSA algorithm with suitable example. 10

Q. 5. (a) What is the function of SMTP ? Differentiate between a user agent (UA) and a mail transfer agent ? How does MIME enhance SMTP ? 10

(b) Discuss Simple Network Management Protocol (SNMP) in detail. 10

Q. 6. (a) Explain why a DNS is required with the Internet and describe its main functional parts. In relation to DNS, explain why a hierarchical naming structure is used instead of a flat structure ? 10

(b) What are the different types of transmission technology ? Explain different types of networks on the basis of transmission technology. 10

Q. 7. Write short notes on any four of the following : 5×4=20

(a) FDDI

(b) ARQ

(c) Cryptography

(d) Circuit Switching

(e) Virtual Terminals

(f) POP3

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B.Tech. Examination 2014

(Sixth Semester)

(C.S. & I.T.)

Paper - II

COMPUTER NETWORK

Time Allowed : Three Hours

Maximum Marks : 100

Note : Attempt any five questions. All questions carry equal marks.

Q. 1. (a) Discuss ISO-OSI Reference Model in detail ? 10

(b) Explain various Guided and Unguided Media in detail ? 10

Q. 2. (a) Explain Pure-Aloha and Slotted-Aloha System. Give the expression for throughput of each ? 10

(b) Discuss Sliding Window Protocol in detail ? 10

Q. 3. (a) Compare and Contrast Circuit Switching and Packet Switching ? 10

(b) Write down various advantages and drawbacks of BUS, RING, STAR Topology. 10

Q. 4. (a) What are different type of Error detection method ? Explain CRC error detection technique ? 10

(b) Differentiate between Link-state and Distance Vector Routing Algorithm ? 10

Q. 5. (a) What is IPv6 ? Explain its advantages over IPv4 ? 10

(b) Discuss in detail about IEEE 802.3 standard ? Also discuss its frame format ? 10

Q. 6. (a) [illegible] Procedure Call ? Discuss in detail. 10

(b) What is Cryptography ? Distinguish between Symmetric and Asymmetric Key Cryptography ? 10

Q. 7. Write short notes on any 4 of the following : 5×4=20

(i) SMTP

(ii) DNS

(iii) TELNET

(iv) CSMA/CD

(v) FTP and TFTP

(vi) FIREWALL