BHARTIYA INSTIYUTE OF ENGINEERING & TECHNOLOGY-SIKAR

CLASS IV SEM (CSE)

SUB: DATA COMMUNICATION & COMPUTER NETWORKS

QUESTION BANK

UNIT-1

Short type

Q1. Define the data communication in networking?

Q2. What do you mean topology?

Q3. Why protocols are needed?

Q4. Define digital modulation in data communication?

Q5. What do you mean by signal? Describe types of signals?

Long type

Q1. Describe the network hardware and software resources in networking?

Q2. Explain all types of network topologies in detail?

Q3. What do mean by digital modulation? Explain its types with an example?

Q4. For n devices in a network, what is the number of cable links required for a Mesh, Ring topology?

Q5. Explain the OSI/ISO reference model used in communication?

Q6. Explain the TCP/IP reference model used in communication?

Q7. What do you mean by transmission impairments?

Q8. Consider the bit stream and generate the waveforms by using line coding method:

   10100110   a. Unipolar nrz   b. Manchester   c. polar AMI

Q9. Consider the bit stream and generate the waveforms by using line coding method:

   10110010   a. unipolar rz   b. Diff. Manchester   c. Polar Pseudoternary

Q10. Write down the advantages of optical fiber over twisted-pair and coaxial cable?

UNIT-2

Short type

Q1. What is an error? Explain types of errors.

Q2. What is role of parity bit in data communication?

Q3. Differentiate error correction & detection concept?

Q4. How does a single bit error differ from burst error?

Q5. What do you mean by multiple access communications?

Long type

Q1. State the 2D parity check method by suitable example?

Q2. Explain Checksum error detection method with an example?

Q3. Generate the CRC code for message 1101010101. Given generator polynomial is:

$G(x) = x4 + x2 + 1$

Q4. How does ARQ correct an error? Explain the sliding protocol window?

Q5. Explain stop and wait protocol with example?

Q6. Explain Go back-n protocol with example?

Q7. Explain selective Repeat ARQ protocol with example?

Q8. What do you mean by piggybacking? Explain in detail?

Q9. What is medium access control? Explain pure ALOHA in detail?

Q10. How slotted ALOHA works better than pure ALOHA? Explain?

Q11. Explain the working of CSMA/CD in detail?

UNIT-3

Short type

Q.1 What are the functions of network layer?

Q2. What do mean by routing?

Q3. Write the name of routing algorithms?

Q4. What do mean by IP address?

Q5. What do you mean by congestion control?

Long type

Q1.Explain the various design issues of network layer?

Q2. Explain link state routing algorithm with an example?

Q3. Explain distance vector routing algorithm with an example?

Q4. Draw header details of IPv4 protocol ad describe each one of them in detail?

Q5. Explain difference between IPv4 and IPv6?

Q6. Compare virtual circuit and datagram approach in detail?

Q7. Explain following terms:

    A. ARQ   B. RARQ   C. Internetworking

Q8. What do you mean by congestion control? Explain unicast & multicast routing?

Q9. Explain multicast routing with example?

Q10.Expalin how quality of service maintain on network layer?

UNIT-4

Short type

Q.1 What are the various transport layer services?

Q2. What are the elements of transport layer?

Q3. What is TCP?

Q4. What is UDP?

Long type

Q1.Explain TCP service model in detail?

Q2. Explain flow control and buffering at the transport layer?

Q3. How TCP connection establishes and release in network?

Q4. Explain TCP segment structure with the help of diagram?

Q5. Explain three way handshaking in TCP?

Q6. Explain UDP segment structure with the help of diagram?

Q7. Explain the leaky bucket algorithm in detail?

Q8. Explain the token bucket algorithm in detail?

UNIT-5

Short type

Q1. Define WWW at application layer?

Q2. Define DNS at application layer?

Q3. Define HTTP at application layer?

Q4. Write functions of application layer?

Long type

Q1. Explain architecture of World Wide Web?

Q2. What is proxy server and how is it related to HTTP?

Q3. What is a URL and what are its components?

Q4. Describe the addressing system used by SMTP?

Q5. Describe the following:

    a.   Electronic Mail   b. FTP

Q6. Explain network security in brief?