

School of Engineering

**B.TECH Electronics and Communication Engineering in Artificial Intelligence and Machine
Semester End Examination - Jun 2024**

Duration : 180 Minutes

Max Marks : 100

Sem VI - G2UC605T - Communication Network

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) What is the number of bits in an IPv4 address? What is the number of bits in an IPv6? K1(2)
- 2) Write a detailed note on the TCP/IP reference model. K2(4)
- 3) Write a detailed note on Selective Repeat Request ARQ Sliding window protocol. K2(6)
- 4) Write about Link State Routing algorithm K3(9)
- 5) Write about TCP segment? K3(9)
- 6) One hundred stations on a pure ALOHA network share a 1-Mbps channel. If frames are 1000 bits long, find the throughput if each station is sending 10 frames per second. K5(10)
- 7) What advantage does a circuit-switched network have over a packet-switched network? K4(12)
- 8) Encrypt "INTERNET" using a transposition cipher with the following key . K5(15)
3 5 2 1 4
1 2 3 4 5
- 9) Write about Error Control in SCTP? K5(15)
- 10) A path in a digital circuit-switched network has a data rate of 1 Mbps. The exchange of 1000 bits is required for the setup and teardown phases. The distance between two parties is 5000 km. Answer the following questions if the propagation speed is 2×10^8 m:
a. What is the total delay if 1000 bits of data are exchanged during the data transfer phase?
b. What is the total delay if 100,000 bits of data are exchanged during the data transfer phase?
c. What is the total delay if 1,000,000 bits of data are exchanged during the data transfer phase?
d. Find the delay per 1000 bits of data for each of the above cases and compare them. What can you infer? K6(18)