DEPARTMENT OF APPLIED MATHEMATICS

Computer Networks (MC305)

ASSIGNMENT-I

(AY 2025-26)

Q1. Explain the Network topologies. State their advantages and disadvantages.

Q2. How does guided media differ from unguided media? Explain with suitable examples.

Q3. What is the OSI reference model? Explain the responsibilities of various layers of the OSI model and compare and contrast them with the TCP/IP model.

Q4. What are different switching techniques in computer network? Discuss.

Q5. Explain the Transport Layer protocols.

Q6. A CSMA/CD network has a data rate of 100 Mbps and a propagation delay of 5μs. The minimum frame size is 512 bytes. What is the minimum packet transmission time?

Q7. What are the different types of error detection methods? Write the steps to compute the checksum in the CRC code. If the frame is 110101011 and the generator is $x^4 + x + 1$, what would be the transmission frame?

Q8. Explain the IEEE 802 standard.

Q9. List the situations in which pure ALOHA and slotted ALOHA perform better. Justify your answer.

Q10. Suppose in a CSMA/CD LAN, the maximum end-to-end propagation delay is 25.6 μsec. If the line operates at 100Mbps, what is the minimum frame length (in bytes) of the LAN?