

ABV-Indian Institute of Information Technology & Management, Gwalior

IT208: Computer Networks

Major Examination — 2024

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions. Support your answers with neat diagrams wherever necessary.

1. Explain different types of multiplexing techniques with diagrams. (7 Marks)
2. (a) Explain Stop-and-Wait ARQ.
(b) Derive the efficiency of Stop-and-Wait protocol. (7 Marks)
3. Compare and contrast Go-Back-N and Selective Repeat ARQ with examples. (7 Marks)
4. Explain the working of IP addressing and subnetting. A network has IP 192.168.50.0/27. Find total subnets, usable hosts per subnet, and first valid host address. (7 Marks)
5. What is congestion control? Explain techniques used in TCP for congestion management. (7 Marks)
6. Explain CSMA/CD protocol. How is collision detected and resolved? (7 Marks)
7. Define routing. Explain any two routing algorithms with examples. (7 Marks)
8. A message of 8000 bits is transmitted at 1 Mbps over a 3000 km satellite link. Propagation speed is 3×10^8 m/s. Compute: (i) Transmission delay, (ii) Propagation delay, (iii) End-to-End delay. (10 Marks)