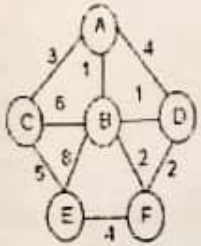
NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA, B.TECH 4th SEMESTER COMPUTER ENGINEERING,

Computer Networks (CSPE-26) SESSIONAL-II, SECTION –A/B

Duration: - 50 Minutes. **M.M 15**

Note: - All questions are compulsory.

Q-1) Consider a network with 6 routers A to F connected with links having weights shown in the diagram. All routers uses distance vector routing algorithm to update their routing table. What will be the path between router A and E after stability. **[4]**



Q-2) Consider a selective repeat sliding window protocol that uses a frame size of 2 KB to send data on a 2 Mbps link with a one-way latency of 40 msec. To achieve a link utilization of 50%, the minimum number of bits required to represent the sequence number field is . .... **[3]**

Q 3) To transmit 100 digitized voice channel using a channel of 20 KHz. what should be the ratio of bits/hertz if we use no guard band. Assume the human voice normally contains frequencies from 0 to 4000 hz and assume 8 bits per sample. **[2]**

Q-4) Suppose nodes A and B are on same 10 Mbps Ethernet segment and the propagation delay between two nodes is 225 bit times. Suppose A and B send frames at t=0, the frames collide then at what time, they finish transmitting a jam signal. Assume a 48 bit jam signal. **[2]**

Q-5) Why pure aloha required 2 free Frame time to send 1 frame and slotted required 1 frame time. **[2]**

Q-6) Explain QPSK modulation scheme **[2]**