**Mid Term Paper (Fall-2022)**

**BSSE (Morning)**

**Computer Networks ( CS-577 )**

**Maximum Marks: 18 Total Time: 1.0Hr**

**Question N0. 1 [Marks: 2+3]**

1. With reference to network layer, if source and destination address does not change at intermediate nodes then why router need to open the header information? (2-3 lines answer)
2. Based on bit-stuffing protocol, consider the following bit pattern of frame received at receiver side. Find the actual characters send by sender if the flag being used is 01111000 and the ASCII value of A=65:

Header 0100111010101000001010000010011101 Trailer

**Question N0. 2 [Marks: 2+3]**

1. Can we use CSMA/CD in wireless networks? Justify your answer with reason. (3-4 lines)
2. Explain with the help of flow diagram about the procedure of pure ALOHA. (1Page diagram)

**Question N0. 3 [Marks: 2+2+2+2]**

PTA is receiving complaints about the noise in FM radio adjacent channels currently being used for broadcasting live transmission and wants to reallocate the FM frequency band:

1. What is the starting and ending frequency of FM radio band in MHz?
2. Assuming the noise is only between 92.8MHz to 103MHz and the channel bandwidth requirement is 300KHz. PTA want to add guard band of 600KHz between two adjacent channels to avoid noise/interference. How many channels can be adjusted with this policy? Also draw the diagram with your proposed allocation.
3. Find the channel capacity if the SNR is 3162 and the bandwidth is 300KHz.
4. If we assume that the channel is noiseless with 16 levels, and we can send 2 bits per level then calculate the bitrate.

**\*\*\*\*Good Luck\*\*\*\*\***