**Sessional Assignment**

**Transmission, Switching & Signaling**

**Submission Date: 28th May, 2020**

1. Design a multistage switch (3 stage) for N=200, n=20 & k=10 usinig;
* Multi-stage switch
* Clos Criteria
1. What is Access Network? Give examples of some of the technologies used in Access Network?
2. What is Digital Telephony? With an example explain the digitization of the PSTN.
3. What is PDH? Name some of its limitations and advantages of SDH/SONET. Show the path section designation for SDH. Also show the SDH Frame and calculate its basic capacity for a byte and frame.
4. Explain the figure given below



1. Explain LATA, SS7, RBOC, and IXC
2. (a) A microwave transmitter has an output of 500 mW. What is its output in dBW?

(b) A combining network has two inputs: +29 dBm and +6 dBm. It has an insertion loss of 3 dB. What is the combined output in dBm?

1. VOIP. Explain w.r.t basic functions, VOIP components. Also explain how to overcome the challenges. What is the role of FXO and FXC in VOIP?
2. What is PSTN? How does PSTN work? Describe present day PSTN terminals, services?
3. What is PBX? Explain its interface standards, functions, features. What are the functional features offered by a CO switch?
4. Difference between in-band and channel associated signaling.
5. Draw the SS7 protocol stack. Show and brief the signaling unit structure of MSU
6. What is SIGTRAN? How does it provide reliable datagram service?
7. ADSL? Describe and show the Modulation Technique used in DSL. Also show and calculate the upstream and downstream data rate for ADSL.
8. Explain Multiplexing hierarchy of T3?

**Assignment – 3**

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**Instructor: Mansoor Qadir**

**Question 1:**  Design a multistage network using Benes and Banyan Network.

**Assignment – 4**

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**Question 1:**  Explain SIGTRAN?

**Question 2:**  Explain SS7oip?

**Question 3:**  Explain SCTP?

**Question 4:**  Explain IP Telephony?

**Question 5:**  Explain VOIP?

**Question 6:**  What is parity, even parity, odd parity?

**Question 7:**  Explain FTTx (FTTH, FTTC, FTTB, FTTCab etc).