

Code No: 114CR**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech II Year II Semester Examinations, August/September - 2022****DATA COMMUNICATION****(Information Technology)****Time: 3 Hours****Max.Marks:75****Answer any five questions****All questions carry equal marks**

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- 1.a) What are the applications and advantages of Data Communication Networks?
b) Explain the classification of Data Communication Networks. [8+7]
- 2.a) Explain pulse code modulation. What are the different types of noise possible in converting analog signal into digital signal?
b) Explain different types of modulation techniques used for data transmission. [7+8]
- 3.a) Draw the FDM diagram and give its advantages over TDM.
b) Explain different switching techniques. [7+8]
- 4.a) What are the advantages of co-axial cable over two-wire line?
b) Explain attenuation mechanism in fiber optical cables. [6+9]
- 5.a) Explain In Channel Signaling in detail.
b) During a busy hour, 1400 calls were offered to a group of trunks and 14 calls were lost. The average call duration has 3 minutes. Find Traffic Offered, Traffic Carried, Grade of Service and the total duration of period of congestion. [8+7]
- 6.a) List and explain the two factors that limits the length of the subscriber loop.
b) A group of 20 servers carry traffic of 10 Erlangs. If the average duration of a call is three minutes, calculate the number of calls put though by a single server and the group as a whole in a one-hour period. [8+7]
- 7.a) Define first generation analog cellular telephone system and explain.
b) Explain the concepts of personnel communication systems. [8+7]
- 8.a) How voice band modems are classified?
b) Write short note on digital service unit. [8+7]

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