

Total No. of Questions – [3]

Total No. of Printed Pages: 01

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OCTOBER 2019 INSEM (T1)

S. Y. B.TECH. (Information Technology) (SEMESTER – III)

COURSE NAME: DATA COMMUNICATION

COURSE CODE: ITUA21183

(PATTERN 2018)

Time: [1 Hour]

[Max. Marks: 20]

(*) Instructions to candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed.
- 4) Assume suitable data where ever required.

Q1) Attempt any one.

- a) Discuss the effect of transmission impairments on signal transmission. [8]
Draw input analog signals with phase 180° in time domain and mention it's equation.
Amplitude=2V, Frequency=3Hz, 2. Amplitude=4V, Frequency=3Hz
Amplitude=1V, Frequency=3Hz. 4. Draw the composite signal as an output.
- b) Define the terms 1. Periodic signal 2. non-periodic signal 3. Attenuation [8]
4. Distortion with diagram. Represent the digital signal which carries the information with
i) 2 signal levels ii) 4 signal levels.
Mention the data bit carried by each signal level roughly for both the case.

Q2) Attempt any one.

- a) What is the purpose behind each type of modulation, write it separately? [8]
Explain any two types of modulations techniques.
- b) Explain line coding and Multilevel line coding schemes? [8]
Represent the signal with proper labels for 2B1Q multilevel scheme with given data

Data bit	Level
00	+1
01	+3
10	-1
11	-3

Q3) Attempt any one.

- a) Describe DSL in detail and list out it's applications. [4]
- b) Draw and explain the construction of Fiber-Optic cable [4]