Paper Id: | 121712 | Roll No: ☐☐☐☐☐☐☐☐☐☐☐☐☐

B.TECH.
(SEM VII) THEORY EXAMINATION 2019-20
TELEMETRY AND DATA TRANSMISSION

Time: 3 Hours   *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   2 x 7 = 14

a.	Discuss the high and low level multiplexing.
b.	Differentiate between PCM and DPCM.
c.	What is PLL ? Explain.
d.	Write down short notes on Industrial Tele-control installations,
e.	Discuss the frame synchronizer codes.
f.	What is ADC ? Discuss its four applications.
g.	Explain aliasing error with suitable diagram.

SECTION B

2. **Attempt any *three* of the following:**   7 x 3 = 21

a.	Explain the communication based processing control systems with its types?
b.	Write short notes on: i) RS 232 C ii) RS 422 iii) RS 423
c.	What is sampling theorem ? Compute minimum sampling rate.
d.	Describe the ON/OFF commands and Data commands used in process control system.
e.	Discuss about pipelines used in communication based processing control systems?

SECTION C

3. **Attempt any *one* part of the following:**   7 x 1 = 7

(a)	What is word and frame format ? How they are multiplexed. Explain.
(b)	Draw the block diagram for modulation and demodulation of delta modulation.

4. **Attempt any *one* part of the following:**   7 x 1 = 7

(a)	Write the short notes on
	     (i) X25
	     (ii) Signal conditioner
	     (iii) Differential encoder

(b)	Draw the block diagram of aerospace telemetry system. Also discuss its various Components.

5. **Attempt any *one* part of the following:**   7 x 1 = 7

(a)	Explain different components of Data modem system. Draw its block diagram.
(b)	What are the general rules for installation of programmable controller for factory automation? Explain Multiplier & Concentrator,

6. **Attempt any *one* part of the following:**   7 x 1 = 7

(a)	Describe Serial and parallel data transmission protocols in detail.
(b)	Explain how will you analyze the reliability of telecontrol installation.

7. **Attempt any *one* part of the following:**   7 x 1 = 7

(a)	Explain PSK and QPSK? compare and describe them. How they are used to transmit data. https://www.aktuonline.com
(b)	Draw and explain the circuit diagram of a bit synchronizer.