Sub Code:NIC702

Paper Id: 132707 Roll No:

B.TECH
(SEM-VII) THEORY EXAMINATION 2019-20
TELEMETRY PRINCIPLES

Time: 3 Hours *Total Marks: 100*

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

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a. What is Inter-symbol interference (ISI).
b. Define Antenna.
c. Discuss the advantages of Active Filter.
d. Draw modulated waveforms PAM related to Telemetry.
e. Mention two types of Non electrical telemetry systems.
f. Define Free Running Mode & Capture mode related to PLL.
g. Write the time–domain equation of Amplitude Modulation (AM).
h. What is Telemetry?
i. Give two differences between FDM & TDM?
j. Draw the basic block diagram of PLL.

SECTION B

2. Attempt any *three* of the following: **10x3=30**

a. Explain **Power line carrier Communication** in detail.
b. Describe Time Division Multiplexed System – TDM/PAM system.
c. Explain **protocols of modem** in detail.
d. What are the **Transmission Techniques** in Telemetry? Explain current distribution and design consideration of antenna in Telemetry.
e. Explain working of **Switched Capacitor Filters** with circuit diagram.

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

a. Discuss the **components of telemetry system** with block diagram.
b. Explain **Non electrical telemetry systems** in detail.

4. Attempt any *one* part of the following: **10x1=10**

a. What is Differential Pulse Code Modulation? Explain the working of Differential Pulse Code Modulation with transmitter & receiver block diagram.
b. Write three differences between FDM & TDM. Draw the block diagram of both Frequency Division Multiplexing (FDM) & Time Division Multiplexing (TDM).

5. Attempt any *one* part of the following: **10x1=10**

a. What is Modem? Give details of Modems with block diagram.
b. Describe QAM with modulator & De-modulator used in Telemetry System.

6. Attempt any *one* part of the following: **10x1=10**

a. Discuss in detail the different **Microwave Antennas**.
b. What are the different Receiver Antennas? Also provide information about Antenna arrays & current distribution.

7. Attempt any *one* part of the following: **10x1=10**

a. Describe **µP based DAS**.
b. Explain the basics of **Satellite** and **Fiber Optic Telemetry** in detail.