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B TECH
(SEM VII) THEORY EXAMINATION 2017-18
TELEMETRY AND DATA TRANSMISSION

*Time: 3 Hours**Total Marks: 100***Notes: 1. Attempt all Sections.**

Q1. Attempt any FOUR parts

5x4=20

- a) $x(n) = \{1, 2, 3, 4\}$, $h(n) = \{2, 3, 4\}$, Find the linear convolution between $x(n)$ and $h(n)$
- b) What is sampling theorem? List the important components of a telemetry system.
- c) Define Delta modulation. What is meant by granular noise?
- d) What is probability of error? Compare the probability of error for QPSK, FSK and PSK.
- e) Write short notes on Multiplier and concentrator.
- f) What is pipelining? Define pipeline control.
- g) Comment on Industrial tele control installations.

Q2. Attempt any TWO parts

10x2=20

- a) Explain the sensors and signal conditioners with block schematic.
- b) Describe about Data Modems, Data transmission over telephone lines
- c) Differentiate between Bit synchronizers and frame synchronizers.

Q3. Attempt any TWO parts

10x2=20

- a) What is ambiguity resolution and differential encoding? Also explain the concept of error detection.
- b) State error detection and error correction. Explain error detection code with an example.
- c) Compare Pulse Code Modulation and Differential Pulse Code Modulation.

Q4. Attempt any TWO parts

10x2=20

- a) Explain the following :
 - (i) Frame synchronizer codes
 - (ii) R. F. links
- b) Explain in detail about Programmable controllers for factory automation.
- c) Discuss about Tone command system, Tone digital command system, ON/OFF command

Q5. Attempt any TWO parts

10x2=20

- a) Explain about Power system control and Operational security systems components
- b) Brief about Multi terminal configuration, reliability in tele-control installations.
- c) Write short notes on ADC- range and resolution.