University Roll No. .....

May 2019

B.Tech.(EIC)-V SEMESTER

Telemetry Data Processing and Recording (EIC-304),Scheme 2010

Time: 3 Hours Max. Marks:60

Instructions:
1. *It is compulsory to answer all the questions (2 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 (a) Draw the block diagram of typical instrumentation system. (2)

(b) Define the term Resolution and sensitivity. (2)

(c) What is BCD to dot matrix converter? (2)

(d) Differentiate between analog and digital data processing. (2)

(e) What is the difference between latch and flip-flop? (2)

(f) Compare FM with PM system. (2)

(g) Explain the term quantization and aperture time (2)

(h) What are the modes of data transmission. (2)

(i) What are the accurate descriptions of attributes of the use of radar to measure the speed of travelling vehicles? (2)

(j) Given the speed of light is 3×10^8 meters/sec and frequency of $500,000 \times 10^9$ Hz calculate the wavelength of radiation (in micrometers). (2)

PART -B

Q2 (a) Explain the voltage and position telemetry system. (5)

(b) How many types of standards are available for transmission channel and media? Explain in detail. (5)

Q3 (a) What is pulse telemetry system? Explain with block diagram. (5)

(b) Explain frequency division multiplexing using block diagram. (5)

Q4 (a) Draw the logic diagram and draw up the truth table of 8421 BCD to 7 segment code. (5)

(b) A $4\frac{1}{2}$ digital voltmeter is used for voltage measurements. Find its resolution, how would 12.98V be displayed on 10V range and how would 0.6973 be displayed on 10V range? (5)

Q5 (a) Design a decade counter using T flipflop. (5)

(b) Explain the theory and working of LEDs. Discuss its advantages.

Q6 (a) Most remote sensing systems avoid detecting and recording wavelengths in the ultraviolet and blue portions of the spectrum. Give expianation to this fact. (5)

(b) What is the role of Earth resource satellites in broadcasting. Also give applications of remote sensing. (5)

Q7 Write short note on: (5)

(a) Nixie Tube

(b) Microwave Remote Sensing (5)

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