

Printed Pages—2

IC—602

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 3 0 4 6**

Roll No.

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**B.Tech.**

SIXTH SEMESTER EXAMINATION, 2005-2006

**DATA ACQUISITION AND TELEMTRY**

Time : 2 Hours

Total Marks : 50

**Note :** (i) Attempt **ALL** questions.

(ii) In case of numerical problems assume data wherever not provided.

(iii) Be precise in your answer.

1. Attempt **any four** parts of the following : (3.5x4=14)
- What is Sampling ? How is its maximum and minimum rates fixed ? Discuss in brief.
  - Describe signal aliasing. How may this be reduced ?
  - What is BER ? What are its usual contributions in measurement instrumentation system ? Discuss.
  - Explain QPSK. How is it used to transmit binary data ?
  - Give a flow chart of the design of real time software and discuss its programme structure.
  - Discuss various type of error detection and correction codes.

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2. Attempt *any two* parts of the following : (6x2=12)
- (a) By giving appropriate schematic diagram introduce the working of data loggers.
  - (b) Introduce "Quantization" of an input signal and calculate the capture time for a 1 kHz signal using a 10 bit ADC, where the input sine wave amplitude equals the maximum input for the ADC.
  - (c) By giving a block diagram of various components of a PC based data acquisition system. Discuss various parameters for a good system design.
3. Attempt *any two* parts of the following : (6x2=12)
- (a) With the help of a schematic diagram, explain the working of a Data Modem in brief.
  - (b) Discuss the operational security system components in brief.
  - (c) Describe the Tone command system using its complete schematic.
4. Write short notes on *any two* of the following : (6x2=12)
- (a) RF links of Data transmission and reception.
  - (b) Data transmission over telephone lines.
  - (c) Pipe line control.

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