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

PAPER ID : 3041 Roll No. | | | | | | | | | | |

B.Tech.

SIXTH SEMESTER EXAMINATION, 2004-2005

MEASUREMENTS AND INSTRUMENTATION

Time : 2 Hours *Total Marks : 50*

Note : *Attempt ALL questions.*

1. Attempt ***any three*** parts of the following : **(5x3=15)**

   (a) What are the different methods of measurement of frequency in the power frequency range ? Explain any one of them in detail.

   (b) What are various techniques of time interval and group delay measurements ?

   (c) Describe briefly, various methods of voltage measurement at radio frequencies.

   (d) Describe the circuits and working of wave analysers used for audio frequencies.

   (e) What is inter modulation distortion ? Describe the working of an inter modulation distortion meter with the help of a block diagram.

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2. Attempt *any two* parts of the following : **(5x2=10)**

(a) Define active and passive transducers with examples and state the role of each in measurement systems.

(b) Explain quartz temperature transducer with the help of block diagram.

(c) Explain Doppler frequency shift flowmeter.

3. Attempt *any two* parts of the following : **(5x2=10)**

(a) (i) A broad cast AM transmitter radiates 60 KW of carrier power. What will be the radiation power at 75 percent of modulation ?

(ii) Explain current telemetering systems.

(b) Draw the block diagram representation of a basic frequency modulation tele metry system and explain its working. Make a comparison between frequency and amplitude modulation.

(c) List the features of GPIB interface bus. Explain with the help of a diagram.

4. Attempt *any three* parts of the following : **(5x3=15)**

(a) Compare LED and LCD in respect of (i) construction principle (ii) speed (iii) size of display area.

(b) Elucidate the non-return-to-zero method of magnetic recording and reproduction of digital signal 1011001.

(c) What is Network Analyser ? Mention its engineering applications.

(d) Explain the principle of secondary emission in a storage oscilloscope.

(e) (i) What are the basic types of digital tape recorders ?

(ii) What are the various methods of magnetic tape recording ? Explain any one of them in detail.

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