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

PAPER ID : 2720 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. VII) ODD SEMESTER THEORY EXAMINATION 2013-14

TELEMETRY AND DATA TRANSMISSION

Time : 3 Hours *Total Marks : 100*

Note :–Attempt **all** questions.

1. Attempt any **four** parts of the following : **(5×4=20)**
   (a) Draw the block diagram of a telemetry system, identifying different part in it.
   (b) Draw the sketches of a voltage and current telemetry schemes using wire. Enlist their advantages and disadvantages.
   (c) Sketch a frequency transmitter circuit as used in frequency telemetering system and explain its operation.
   (d) What are the different types of comparators ? Give their names, circuit sketches and transfer characteristic.
   (e) Distinguish between a three line and two line electrical type transmitters.
   (f) Describe delta modulation systems. What are its limitations ?
2. Attempt any **four** parts of the following : **(5×4=20)**
   (a) Discuss the telemetry standard of baseband configuration in terms of frequency as stipulated by IRIG.
   (b) Explain Synchronous and asynchronous time division multiplexing of PCM signals.

(c) Write short note on RS-232 interface.

(d) What are the advantage and disadvantages of delta modulation over PCM and DPCM.

(e) In an FM system, if M_f is doubled by halving the modulation frequency, what will be the effect on the maximum deviation ?

(f) Explain the Phase Locked Loop (PLL) with the help of neat sketches.

3. Attempt any **two** parts of the following : **(10×2=20)**

(a) What is meant by Modem ? Draw the pin diagram of Modem and explain them.

(b) Explain with the help of block diagram ADSL modem. What type of topology is used when customers in an area used DSL modems for data transfer ?

(c) Draw the block schematic diagram of TDM system of telemetering and make appropriate labels, both on the transmitting and receiving sides.

4. Attempt any **two** parts of the following : **(10×2=20)**

(a) Define Remote control system and discuss its applications areas.

(b) Enlist the communication based processing control systems and illustrate the basic features of the automatic pipelines.

(c) Sketch the block diagram of tone based command system and explain how Doppler shift profile is result in earth rotation for a distance space craft.

5. Attempt any **two** parts of the following : **(10×2=20)**

(a) Sketch and explain the specific units of the Programming Controllers and specify its functional areas.

(b) Enlist the Multiplexing techniques in tele-control and illustrate the basic features of Industrial Tele-control installations.

(c) Discuss the different aspects of reliability in telecontrol installations.