

IV B.Tech. II Semester Supplementary Examinations, July -2005
TELEMETRY AND TELECONTROL
(Common to Electronics & Instrumentation Engineering and Electronics & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is meant by signal conditioning and explain its role in the Telemetry system.
(b) Differentiate between wired Telemetry and Radio telemetry system
2. (a) Define the following ITU Terms.
 - i. Simplex operation
 - ii. Duplex operation
 - iii. Radio waves.
 - iv. Telemetry(b) Write the standards for Automatic correction of sub carrier zero and sensitive Drift.
3. Describe in detail about pulse telemetering system and explain them in detail.
4. A dual conversion receiver uses first and second IF's as f_{1f} and f_{2f} , respectively. it receives a signal at frequency f_{in} . Find the image frequency and other spurious frequencies?
5. Explain with a neat sketch generation and demodulation of PWM, PPM.
6. (a) Explain the fabrication and generation of Ruby Laser with figures and graphs.
(b) Draw the structure of a PIN diode and explain its features.
7. Which type of Tele control method is used for remote transmission of continuous varying numerical values? Explain rectifier, resistance and dc compensation analog methods for the local control area.
8. What is meant by remote regulation. Explain about remote regulation with examples.

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1. Write short notes on the following Telemetry system functions.
 - (a) Data processor
 - (b) Programming
 - (c) Magnetic Tapes
 - (d) Data Acquisition
 - (e) Analog to digital converters.
2.
 - (a) Distinguish between wired Telemetry and optical Telemetry.
 - (b) Mention the advantages and disadvantages of optical Telemetry over Radio Telemetry
3. Draw the block diagram of pulse telemetry system and explain about each block.
4. Explain the concept of transmitting and receiving techniques in radio telemetry system.
5. Briefly explain about the sources of error in PWM Telemetry system.
6.
 - (a) Explain the fabrication and generation of Ruby Laser with figures and graphs.
 - (b) Draw the structure of a PIN diode and explain its features.
7.
 - (a) Differentiate between PCM and PDCM.
 - (b) With a neat sketch explain pulse telegram receiver system.
8. With a neat sketch, explain cyclic time multiplex. Signal scanning method and cyclic time multiplex with signal sequence switching.

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1. (a) Discuss the advantages of Telemetry in industry.
(b) Illustrate current Telemetry system
2. (a) Explain the uses of optical Telemetry?
(b) Explain the operation of cross-coiled receiver in current Telemetry system.
3. (a) With a schematic diagram explain Forter - Seeley demodulator.
(b) Draw the block diagram of FM Telemetry receiver and explain
4. Describe the armstrong method of FM telemetry system. Discuss its special features.
5. What are the applications of radio telemetry? Explain about Air Craft Radome development and testing, Aero space facsimile Television system.
6. (a) Explain the Attenuation in optical fibres with figures.
(b) Differentiate between step index and graded index fibres.
7. Write short notes on:
 - (a) DC double current transmission
 - (b) inductive pulse transmission.
 - (c) Time-shared pulse transmission
 - (d) Direct modulation of h.f. Carriers by Tele control signals.
8. (a) Explain with a block diagram how remote supervision of several o/p stations is done using channel selector method.
(b) Draw a sketch and explain about the Tele control installation working with cyclic address interrogation system.

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1. (a) What is meant by signal conditioning and explain its role in the Telemetry system.
(b) Differentiate between wired Telemetry and Radio telemetry system
2. (a) Explain with a sketch how voltage is used to measure pressure in voltage Telemetry system.
(b) Draw the sketch of torque balance Telemetry system and explain with one example.
3. With a neat sketch explain, FM - FM Telemetry system and write about it's functions. List the applications of FM - FM telemetry system.
4. Write about the digital codes used in Error detection and correction and explain briefly.
5. Explain how radio telemetry is used in Hydroelectric project with necessary sketch.
6. What is a single mode fiber? Show the dimensions and refractive index profiles of different types of optical fiber. Explain about the pulse dispersion in step index fibers with graphs.
7. Which type of Tele control method is used for remote transmission of continuous varying numerical values? Explain rectifier, resistance and dc compensation analog methods for the local control area.
8. Write short notes on
 - (a) Remote counting and counter indication.
 - (b) Remote indications of mean value.
