

Code: EC8T1

**IV B.Tech - II Semester – Regular/Supplementary
Examinations - July 2021**

**TV AND SATELLITE COMMUNICATIONS
(ELECTRONICS AND COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) Write short note on Eye-Brain Mechanism.
- b) Define the terms (i) The Light Perception, (ii) Spectral Visibility.
- c) Draw the Spectrum of the Video Signal.
- d) Illustrate the limitations of D/A converter.
- e) Define Quantization and Quantization error.
- f) Classify coded signals.
- g) Summarize the concept of Audio Synchronization.
- h) List out the orbital elements.
- i) Explain about the Frequency allocations for Satellite Services.
- j) Distinguish between PSLV and GSLV.
- k) Explain Communication subsystem in satellite.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) Explain the following in detail (i) Video Carrier Modulation and Audio Carrier Modulation, (ii) Channel Bandwidth and Structure. 8 M
- b) What is meant by horizontal ‘resolution’? Derive the expression for highest modulating frequency in a TV system and show that it is nearly 5MHz in the monochrome system. 8 M
3. a) Illustrate the concept Dynamic Range and the Head room Concept. 8 M
- b) With neat sketch, explain the process of Sampling and Quantizing of the signal. 8 M
4. a) Write a brief notes on Quantizing Range and the Implications. 8 M
- b) With the help of suitable sketch, explain AES/EBU Decoder and Demultiplex. 8 M
5. a) Explain about orbital effects in communication systems performance. 8 M

b) Explain the terms (i) Orbital Perturbations. (ii) look Angle determination. 8 M

6. a) Discuss about attitude and Orbit Control Subsystem. 8 M

b) Write short notes on (i) Satellite Antennas and (ii) Power Subsystem of Satellites. 8 M