

(3 Hours)

[Total Marks : 100

T.E. Sem-6 (Rev.) - ETRX Communication System 13/12/08

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of the remaining **six** questions.(3) Assume any **suitable** data wherever **required** but justify the **same**.

1. Answer any **four** questions :- 20
 - (a) Define Directivity, Antenna Bandwidth and efficiency of an antenna.
 - (b) What is meant by interlaced scanning ? Why is it done ?
 - (c) Why the (G-Y) is not suitable for transmission in colour T.V. System.
 - (d) State and explain Kepler's Law.
 - (e) What is the major problem with analog MTI System ? How can digital MTI Overcome it ?

2. (a) Differentiate between grounded and ungrounded antenna. What is a basic Marconi antenna ? Show its voltage and current distribution, as well as its radiation pattern. 10
 - (b) List the various UHF and microwave Antenna and explain any one of them. 5
 - (c) Discribe the end-fire array and its radiation pattern. 5

3. (a) What is the composite video signals for a monochrome T.V. ? Draw a neat sketch of Composite Video Signal and indicate :- 10
 - (i) Blanking level
 - (ii) Synchronizing level
 - (iii) Pedestal height
 - (iv) DC level.
- (b) Draw the neat block diagram of B/W (Monochrome) T.V. receiver and explain how Synchronize pulses are separated from CVS and processed to Synchronize the field and line Oscillator. 10

4. (a) What is colour burst signal ? What is its purpose ? And how is it transmitted ? Explain the use of colour killer circuit. 10
- (b) Write the advantages of digital T.V. and explain with the help of suitable block diagram the Digital T.V. System. 10

5. (a) Explain the role and function of transponders in satellite T.V. 5
- (b) Explain the satellite launching mechanism. 5
- (c) Define the following with respect to satellite system. 10
 - (i) Frequency allocation
 - (ii) LEO and MEO satellite.

6. (a) Explain the Principle of Operation of RADAR with the help of a neat block diagram and Derive the radar range equation. 10
- (b) Explain the following :- 10
 - (i) Doppler effect
 - (ii) Radar antenna.

7. Write short notes on the following (any **four**) :- 20
 - (a) Half wave dipole antenna
 - (b) HDTV
 - (c) NTSC Colour T.V. System
 - (d) Satellite Multiple Access