

B.Tech. VIII Semester (Old Back) Examination, April/May - 2017

Electronics & Communication Engg.

8EC2 Radar & TV Engineering

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 26

Instructions to Candidates :

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Unit - I

1. a) Sketch the block diagram of MTI RADAR with power amplifier transmitter and explain the function of each block.
- b) Briefly describe the method of lobe switching. How is conical scanning improved over lobe switching?

OR

1. a) What are pulse compression techniques? Explain them with their merits and demerits.
- b) What is meant by blind speed in a MTI RADAR? What is the effect of blind phase on i) I-channel ii) Q-channel in MTI RADAR?

Unit - II

2. a) Explain :
 - i) Principle of operation of RADAR direction finder.
 - ii) Block diagram of DME.
- b) Give the applications of LORAN system also explain how the range is increased.

OR

2. Write short note on :
- Air craft tracking systems.
 - TACAN System.

Unit - III

3. a) Justify the need for pre and post equalizing pulses? Why is it necessary to keep their duration equal to the half line period.
- b) Sketch composite video signal wave forms for at least three successive lines and indicate :
- Extreme white level
 - Blanking level
 - Pedestal height
 - Sync pulse level

Also justify the choice of p/s ratio = $\frac{10}{4}$ in the composite signal.

OR

3. a) What are the main features of PAL system? How does cancellation of phase error occur in the above system? Explain.
- b) Explain with the help of suitable sketches, how video signal is developed in a vidicon camera tube? How is the vidicon different from an image orthicon and what are its special applications.

Unit - IV

4. a) What is VSB transmission and why is it used for transmission of TV picture signal? Write demerits of VSB transmission.
- b) Draw block diagram of TV transmitter and label its various sections, and explain the function of each block.

OR

4. a) Explain following :
- i) Compatibility of colour and monochrome TV system.
 - ii) Chrominance modulation.
- b) Explain the functions of :
- i) Colour killer.
 - ii) Colour matrix.

Unit - V

5. a) Sketch the circuit diagram of vertical sync separator and explain its working.
- b) Draw complete block diagram of a monochrome TV receiver and discuss briefly each section of the receiver indicating the various waveshapes at the input and output of each block of the receiver.

OR

5. a) Briefly discuss basic idea of HDTV.
- b) Write short notes on :
- i) Common faults and their diagnosis in TV receiver.
 - ii) DBS - TV.

