B.E. Sixth Semester (Electronics Engineering) (CGS)

10682 : Radar & Television Engineering : 6 XN 04

P. Pages : 2 | **AU - 2780**

Time : Three Hours | Max. Marks : 80

* 0 6 1 9 *

Notes : 1. Answer **Three** question from Section A and **Three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Diagrams should be given wherever necessary.
5. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) What is doppler effect? Obtain mathematical expression for calculating doppler frequency. **7**

b) In MTI radar prf is 200 Hz and carrier transmission frequency is 100 Hz. Find its 1st, 2nd, 3rd blind speed. **6**

OR

2. a) Explain how single delay line canceler eliminates fixed clutter of zero doppler frequency. **7**

b) Explain non coherent MTI radar with the help of block diagram. **6**

3. a) What is duplexer? Explain balanced duplexer. **5**

b) Define A scope, B scope, C-scope, E-scope Radar display formats consistent with IEEE definations. **8**

OR

4. a) What are the problems associated with single ended mixers and how they are eliminated in balanced mixer. **6**

b) What is Instrument Landing system? Explain its principle of operation in detail. **7**

5. a) Sketch the details of horizontal blanking and sync pulses. Label on it (i) front porch (ii) horizontal sync pulse (iii) back porch and (iv) active line periods. Why are front. Porch and back porch intervals provided before and after the horizontal sync pulse? Explain why the blanking pulses are not used as sync pulses. **7**

b) What is vestigial sideband transmission and why is it used for transmission of TV picture signals? **7**

OR

6. a) Describe with suitable sketches how CCD array is scanned to provide interlaced scanning. **7**

b) What is flicker? Explain how interlaced scanning is utilized to reduce flicker. **7**

SECTION – B

7. a) Explain the mechanism of separating the sound signal in a video detector. What is the pivotal point that makes the intercarrier sound system a success? **7**

   b) Draw the circuit of a sync separator employing a p-n-p transistor and explain its working. **6**

OR

8. a) Describe with suitable diagrams the constructional details of a delta gun colour picture tube. Why is it necessary to connect a very high voltage at the final anode of a colour picture tube? **6**

   b) Draw and explain functional block diagram of SECAM III coder. **7**

9. a) Explain DCT based JPEG compression. **6**

   b) Draw and explain Basic block diagram of MPEG2 encoder. **7**

OR

10. a) What is Digital video broadcasting? Explain with the help of diagram DVB-C transmitter and DVB-C receiver. **7**

    b) Explain QAM modulation scheme used in digital TV. **6**

11. a) Explain key broadcasting building blocks of Digital TV over IP architecture. **7**

    b) What is plasma? Explain working of plasma display. **7**

OR

12. a) Explain construction and working of LCD display. **7**

    b) Explain scheme of DVB-T transmission system. **7**

****