

8E8022

Roll No. _____

Total No of Pages: **3****8E8022****B.Tech. VIII-Sem (Main & Back) Exam September 2020
Electronics & Communication Engg.
8EC2A Radar & TV Engineering****Time: 2 Hours****Maximum Marks: 48
Min. Passing Marks: 16**www.ersahilkagyan.com**Instructions to Candidates:**

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

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL2. NIL**UNIT-I**

- Q.1 (a) What is Blind speed? Calculate the minimum blind speed for a Radar, which is operating at a frequency 20 GHz and sends 1000 pulses per second. [8]
- (b) An MTI Radar operates at 5GHz, with a pulse repetition frequency of 800 pps. Calculate the lowest three blind speeds of this radar. [8]

OR

- Q.1 (a) Explain microwave landing system using neat and clean diagram. [8]
- (b) Write the difference between Pulse Radar and CW Radar with respect to – [8]
- (i) Maximum Range
 - (ii) Resolution
 - (iii) Accuracy and
 - (iv) Power Level

UNIT- II

- Q.2 (a) Draw the block diagram of Monochrome TV transmitter and explain each block. [8]
- (b) Explain the – [8]
- (i) Image orthicon
 - (ii) CCD camera tubes.

OR

- Q.2 (a) Explain Block diagram of TV transmitters. [4]
- (b) Explain Plumbicon camera tube with its constructional diagram. [6]
- (c) What is the disadvantage of NTSC system and how it overcomes in PAL System? [6]

UNIT- III

- Q.3 (a) What do you understand by compatibility in TV transmission? [4]
- (b) Justify the use of vestigial side band transmission. [6]
- (c) Why the front porch and back porch intervals provided before and after the horizontal sync pulse? Explain why the blanking pulses are not used as sync pulse. [6]

OR

- Q.3 (a) Describe briefly the different type of TV transmission and reception antennas with constructional diagram. [8]
- (b) Write shorts notes on – [4+4=8]
- (i) Encoding picture information
 - (ii) Chrominance Signal Modulation

UNIT- IV

- Q.4 (a) Explain the use of – [3×4=12]
- (i) RF Tuner
 - (ii) Video detector
 - (iii) Deflection Oscillator
 - (iv) AGC
- (b) What is compatibility and how it has been achieved in B/W and colour TV system. [4]

OR

- Q.4 (a) What are advantages of using AGC in transmission receivers? [8]
- (b) Write short notes on – [8]
- (i) HDTV
 - (ii) DBS – TV
 - (iii) 3D – TV
 - (iv) Video detector

UNIT- V

- Q.5 (a) Compare the analog TV and digital TV. [8]
- (b) Explain transmission of TV signals through satellite and transponders. [8]

OR

- Q.5 (a) Explain working principles of - [4+4=8]
- (i) Cable TV
 - (ii) DBS TV
- (b) Compare the picture quality of HDTV, 3D TV and Normal TV. Draw the functional block diagram of any beam - less TV receiver. [4+4=8]
-