SEAT No._____ No. of Printed Pages :03

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SARDAR PATEL UNIVERSITY

B.Sc. (5th Semester) Examination

Electronics

US05CELE24- Analog Communication

Date :- 26-11-21 **Time :-** 3:00 pm to 5:00 pm

Day :- Friday **Total Marks :-70**

Q1. Multiple Choice Questions . **[10]**

1. A radio receiver _____the RF carrier to get back the original modulation frequency voltage.
   (a) Amplifies (b) accepts (c) detects
2. _____receiver are super heterodyne receivers used for reception of code and short waves telephone signals.
   (a)Communication (b) radio (c) radar
3. _____reception stands for radio reception after converting the modulated carrier voltage at a different carrier frequency.
   (a) Heterodyne (b)Analog (c) digital
4. In frequency mixer, the RF signal voltage and the local oscillator voltage are mixed together to produce a new frequency called the_____ Frequency
   (a) Oscillator (b) Intermediate (c) Audio
5. _____ per stage of I.F. amplifier is higher than that in one stage of RF amplifier using the same transistor.
   (a) Current (b) Amplification (c) Power
6. A properly designed AVC system reduces the _____variation due to fading from a high value of 30 to 40dB to a small value of 3 to 4 dB.
   (a)Current (b) Amplitude (c) Power
7. _____ is a process by which the optical image of the television object is formed on the photo sensitive plate of the TV cameras.
   (a) Scanning (b) photography (c) Assembling
8. At the receiving end also, the electronic beam traces out horizontal lines on the florescent screen of the picture tube and produce by horizontal and vertical scanning a uniform lit rectangular area called _____ .
   (a)Picture (b) raster (c)television image

[P.T.O.]

9.The RF tuner through the use of _____ isolates the local oscillator from the antenna.

(a)IF amplifier (b) RF amplifier (c)Frequency mixer

10. If traps are design to provide _____ attenuation to unwanted signals.

(a) 80db (b)100db (c)20db

Q2. State whether the following statements are True or False. [08]

1. The problem of flicker is remove by a special method of scanning called interlaced scanning. True/False.
2. Quality of the reproduced sound program depends on fidelity. True/False.
3. Single transistor working as a mixer and local oscillator is called converter .True/False.
4. The standard values of the intermediate frequency is 456KHz. True/False
5. The image orthicon camera tube operates on the principle of photo emission . True/False
6. Retrace is not seen on TV monitor due to Blanking pulse. True/False.
7. The device used to match the impedance at TV receiver input is known as balun .True/False.
8. The AVC filter is used to remove the audio fequency components. True/False.

Q3. Short Questions [Attempt any Ten] [20]

1. Explain the principle of super heterodyne radio receiver.
2. Why local oscillator and RF amplifier are ganged together?
3. What is a radio receiver?
4. What is aspect ratio?
5. What is AFC? Explain the principle of AFC.
6. What is scanning?
7. What is function of television camera tube?
8. What is the need of interlaced scanning?
9. What is the principle of operation of Vidicon camera tube?

10. What are the basic requirements of video IF amplifier used in TV receiver ?
11. What is RF tuner?
12. What is Balun ?

Q4. Long Answer Questions [Attempt any four]

1. Draw the block diagram of super heterodyne receiver and briefly explain the function of the different constituent parts. [08]
2. (a) Discuss in detail the basic functions of AM receiver.
   (b) Discuss in detail the salient features of broadcast receivers. [08]
3. Explain in detail the working of the RF amplifier used in broadcast radio receiver with the help necessary diagram. [08]
4. What is AVC? What is the principle of operation of AVC? Draw the circuits of linear diode detector with capacitor filter & simple AVC and explain its working. [08]
5. Discuss in detail the construction and working of image orthicon giving necessary diagram. [08]
6. Discuss in detail the composite video signal. [08]
7. Draw the block diagram of broadcast TV receiver and explain its working. [08]
8. Discuss in detail the interstage couplings methods used in TV receiver. [08]

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