Total No. of Questions : 12]

SEAT No. :

P1762

[Total No. of Pages : 3

[4859]-124
B.E. (Electronics)
a - AUDIO AND VIDEO ENGINEERING
(2008 Pattern) (Elective - III) (Semester - II)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Use of electronic pocket calculator is allowed.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain the working of precision-in-line picture tube. Describe the constructional, functional & beam technique employed in the precision-in-line tube. **[8]**

b) Justify the choice of 625 lines for TV transmission. Why is the total number of lines kept odd in all television systems? What is the significance of choosing the number of lines as 625 and only? **[6]**

c) Distinguish between progressive and interlaced scanning and explain various application areas of both. **[4]**

OR

Q2) a) Explain the working of television camera with neat diagram and explain how optical image is converted to electrical signal using camera. **[6]**

b) Sketch a well label diagram of composite video signal and explain it in detail. **[8]**

c) Explain in short the chromaticity diagram and give brief about mixing of colours in television. **[4]**

P.T.O.

Q3) a) Draw the block diagram of a PAL colour TV transmitter and receiver and describe how does of produce R, G and B signals. **[8]**

b) Explain with the help of black schematic the facilities provided in a dobbulescope & explain its use in alignment of RF tuner, video IF amplifier & Ground IF amplifier. **[8]**

OR

Q4) a) Explain with block schematic operation of NTSC colour Receiver. **[8]**

b) Compare PAL, NTSC and SECAM TV system. **[4]**

c) Explain why (G-Y) is not transmitted in colour TV transmission. **[4]**

Q5) a) With suitable diagram explain the MAC encoder and decoder & its formats. **[8]**

b) Compare the analog TV with DTV & HDTV. **[8]**

OR

Q6) a) Draw and explain functional block diagram of digital colour TV. **[8]**

b) What are the objectives of MPEG-2 standard? What do you understand by the term bit stream scalability? How does layered coding approach improve the quality of picture while offering flexibility. **[8]**

SECTION - II

Q7) a) Explain in short: **[8]**

i) Video on Demand.

ii) CATV.

b) Discuss a live TV coverage plan for a cricket match. Show the camera placement at different locations & other equipment set-up for live broadcast. **[10]**

OR

Q8) a) With suitable block diagram explain CCTV system. State the applications of CCTV. **[6]**

b) Explain the direct-to-home (DTH) technique for TV broad casting using heat block diagram. **[6]**

c) Draw a neat block diagram of HDTV decoder and explain function of each block. **[6]**

Q9) a) Explain the different DVD formats. **[8]**

b) Explain the principle of magnetic recording and reproduction with a neat diagram. What is the relationship between gap-width, tape-speed and frequency of audio signal. **[8]**

OR

Q10)a) Explain why performance of DVD is superior to other mediums. **[8]**

b) Enlist and explain the audio compression ITU-T standards. **[8]**

Q11)a) Define the following terms: **[8]**

i) Reverberation.

ii) Absorption coefficient.

iii) Accoustics chamber.

iv) Sound reduction index (SRI).

b) Explain with neat block diagram how digital satellite radio (DSR) receiver works. **[8]**

OR

Q12)a) Explain the working of a typical chordless microphone PA system. State the type of microphone used & their specifications. **[8]**

b) Write short note on: **[8]**

i) Special type of speakers.

ii) Hi-Fi system.