

Code No: R164104A

**R16**

**Set No. 1**

**IV B.Tech I Semester Regular/Supplementary Examination March - 2021**

**TELEVISION ENGINEERING**  
**(Electronics and Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Define the following terms i) Hue. ii) Saturation. [2]
- b) Discuss merits and demerits of a synchronous detector over a conventional detector employing a diode. [3]
- c) Write the principle of burst phase ident circuit. [3]
- d) List the profiles that support H.264. [2]
- e) List the other societies and organizations in HDTV and DTV standards. [2]
- f) Write the benefits of Common Alerting Protocol. [2]

**PART-B (4x14 = 56 Marks)**

2. a) What is flicker? Explain how it is eliminated? [7]
- b) With a neat sketch explain composite video signal. [7]
3. a) Explain why AM is chosen for picture and FM for sound in TV signal transmission. [7]
- b) Write short notes on the types of RF tuners. [7]
4. a) Describe basic principle of AGC and discuss the advantages of employing AGC of IF and RF amplifiers in the TV receiver. [7]
- b) Explain the U and V demodulator with a neat diagram. [7]
5. a) Describe the comparisons of Analog & Digital TV transmission systems. [7]
- b) Write about MPEG-2 compression technique. [7]
6. a) Discuss the functions of Audio Engineering Society. [7]
- b) Explain transport stream demultiplexing in DTV reception. [7]
7. a) Explain 1080 60p presentation and mention the techniques that support 1080 60p. [7]
- b) Explain the features of multiplatform Emergency Alert System [7]

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**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Briefly explain desaturation. [3]
- b) List the factors that influence the choice of IF in TV receivers. [2]
- c) Why diode is used for heterodyning in the mixer? [2]
- d) List the steps involved in compression. [3]
- e) Write the standard bodies of HDTV. [2]
- f) Write any four disadvantages of EAS. [2]

**PART-B (4x14 = 56 Marks)**

2. a) Explain about interlaced scanning. [7]
- b) Explain in detail color mixing. [7]
3. a) Explain positive and negative modulation in TV transmission system? [7]
- b) Discuss in detail IF sub-system in PAL-D color receiver. [7]
4. a) Draw a block diagram of differential peak FM detector and explain the functions performed by each block. [7]
- b) With a neat circuit diagram explain the working of ident and color killer circuits. [7]
5. a) Explain the digital television systems. [7]
- b) Explain about MPEG-2 video compression. [7]
6. a) Explain briefly DTV transmission and reception system with neat diagram. [7]
- b) What are the problems occurred at the DTV receiver? Explain [7]
7. a) Explain briefly about delivery and distribution in emerging TV technologies. [7]
- b) Write in briefly about eTV and iTV implementation. [7]

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**Set No. 3**

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**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Why the aspect ratio is set to 4/3? [2]
- b) What is the effect of earth's curvature? [2]
- c) Write the advantages of keyed AGC system. [3]
- d) Define cliff effect. [2]
- e) List the features involved in video presentation format [3]
- f) What is virtual product placement? [2]

**PART-B (4x14 = 56 Marks)**

2. a) Explain the operation of a monochrome TV receiver with a neat block diagram. [7]
- b) Explain how color difference signals are developed from R,G and B signals [7]
3. a) Explain in detail why vestigial sideband transmission is used to transmit video signal in television? [7]
- b) With a neat circuit diagram, explain the operation of a video detector. [7]
4. a) Explain noise cancellation methods in a TV receiver. [7]
- b) Explain the basic principle of separation of U and V signals by transformer action. [7]
5. a) Explain in detail about Grand Alliance Prototype of HDTV [7]
- b) Write about MPEG-4 and H.264 standards. [7]
6. a) Explain the role of visual perception in presentation. [7]
- b) What are the standard bodies of DTV technology? [7]
7. a) Write about MPEG and metadata technologies. [7]
- b) Write short notes on virtual product placement. [7]

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**Set No. 4**

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**(Electronics and Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Briefly explain the color difference signal. [3]
- b) Write the reasons for choosing negative modulation in TV system. [2]
- c) Define forward AGC and reverse AGC. [2]
- d) Why HDTV is developed in US? [2]
- e) Write various cable DTV standards. [2]
- f) How metadata can be described? [3]

**PART-B (4x14 = 56 Marks)**

2. a) Explain the operation of monochrome TV transmitter with a neat block diagram. [7]
- b) With the aid of block diagram explain the working of PAL encoder. [7]
3. a) Explain the functions of chroma decoder with a neat diagram. [7]
- b) Discuss briefly about sync separation and processing in monochrome television receiver. [7]
4. a) Explain IF subsystem of a color receiver. [7]
- b) Explain PAL-D decoder with block diagram. [7]
5. a) Explain briefly the features and properties of HDTV. [7]
- b) Write a short note on audio compression. [7]
6. a) What are the different demodulation techniques used for DTV receiver? Explain any one technique. [7]
- b) Explain briefly about SMPTE standard. [7]
7. a) Explain enhanced, interactive and personalized features in emerging TV technologies. [7]
- b) Write about Multiplatform Emergency Alert System (EAS) and its drawbacks. [7]