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Question Paper Code : Q 2773

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Seventh Semester

Electronics and Communication Engineering

EC 1011 — TELEVISION AND VIDEO ENGINEERING

(Regulation 2004)

(Common to B.E. (Part-Time) Sixth Semester – ECE – Regulation 2005)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Define Aspect Ratio for a TV image.

2. List the components in a composite video signal.

3. Briefly present the concept of AFT.

4. What is the significance of 5.5 MHz sound trap?

5. Draw the block schematic that generates the Y, (R–Y) and (B–Y) signals from the R, G, B outputs of a color camera.

6. Justify the use of a Bistable multivibrator in the 180° PAL switch in a CTV receiver.

7. List out the limitations of the NTSC standard.

8. Give the weighting factors of color difference signals in color encoding.

9. Present the principle of scrambling of TV signals in a cable TV system.

10. Locate the video and FM sound signals in the 3D stereo sound TV transmission system after modulation.

PART B — ($5 \times 16 = 80$ marks)

11. (a) Illustrate the Interlaced scanning format in detail. Mention the number of active lines traced out.

Or

(b) Describe the deflection mechanism of a TV picture tube. How do you troubleshoot a fault of 'No Brightness' in it?

12. (a) Explain with a neat block diagram how the video signal is modulated and sketch the output of this modulator.

Or

(b) Summarise the design requirements of the vision IF Amplifier section. Describe the video and sound signal detection.

13. (a) Explain how the 'C' signal is formed by quadrature modulation of color difference signals. Also present the color subcarrier interleaving mechanism with the 'Y' signal.

Or

(b) Draw the structure and explain the raster scanning in a Trinitron Colour Picture tube.

14. (a) Describe the phase error cancellation process in a PAL TV system, in detail.

Or

(b) Illustrate the basic working of a comb filter. Explain fully how the C and Y signals are separated without any loss of bandwidths.

15. (a) Draw the block diagram and explain the reception and demodulation aspects of a TVRO earth station.

Or

(b) How is EDTV different from conventional TV? Explain the MAC technique in detail.