B.E. DEGREE EXAMINATIONS: NOV/DEC 2010

Seventh Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U07ECE12: Television and Video Engineering

Time: Three Hours   **Maximum Marks: 100**

Answer ALL Questions

PART A (10 x 1 = 10 Marks)

1. Aspect Ratio for width to height for a TV picture frame is _____

  (a) 1:1   (b) 2:1   (c) 4:3   (d) 5:4

2. Target plate of plumbicon consists of _____

  (a) antimony tri-sulphide   (b) selenium   (c) tin oxide   (d) lead oxide

3. Which of the following stages incorporates colour saturation control?

  (a) chroma amplifier   (b) chroma demodulator

  (c) colour subcarrier generator   (d) Colour killer circuit

4. The material more suitable for construction of low impedance SAW filters is _____

  (a) lithium neobate   (b) lithium tantalate   (c) Zinc oxide   (d) PZT ceramics

5. The primary colours are _____

  (a) red, green, blue   (b) red, yellow, blue   (c) magenta, cyan, yellow (d) red, yellow, green

6. Slotted aperture mask is used in _____

  (a) Trinitron   (b) PIL Tubes   (c) shadow mask tube   (d) both (a) and (b)

7. European system uses _____ lines per frame

  (a) 110   (b) 220   (c) 525   (d) 625

8. Russia uses _____ system

  (a) NTSC   (b) PAL   (c) SECAM   (d) CCIR

9. Teletext data line contains:

  (a) 40 bytes of display information   (b) 45 bytes of display information

  (c) 45 bytes with 5 bytes as synchronization   (d) 45 bytes with 8 bytes of coded information

10. How many fields are recorded on one slant track of VHS recorder?

  (a) 1   (b) 2   (c) 4   (d) 8

PART B (10 x 2 = 20 Marks)

11. In TV system used in India, total number of scanning lines per frame is 625 and the lines lost per field is 20. Calculate vertical and horizontal resolutions with k=0.7.

12. How will you solve the flickering problem?

13. What is the main purpose of using VHF tuner?

14. Why is AM preferred over FM broadcasting for picture signal?

15. Define Hue and Saturation?

16. Why is (G-Y) not suitable for transmission?

17. What are the limitations of the NTSC system?

18. What is the use of color sub-carrier oscillator?

19. List the fundamental components of DVD player.

20. List some merits of high definition television.

PART C (5 x 14 = 70 Marks)

21. (a) Write notes on composite video signal.

(OR)

(b) Explain the structure and the generation of video output from a vidicon camera.

22. (a) Draw block diagram of a monochrome TV receiver and briefly explain the operation of
TV receiver

(OR)

(b) Explain briefly the operation of IF subsystem.

23. (a) (i) Explain the working of Delta gun picture tube.   (10)

(ii) Give the comparison of different picture tubes.   (4)

(OR)

(b) Explain the terms purity and convergence. Also write about static & dynamic convergence
adjustments.

24. (a) (i) Explain the working of U and V demodulators.   (7)

(ii) Describe with a circuit Burst phase discriminator.   (7)

(OR)

(b) Explain in detail about how phase errors are cancelled in PAL?

25. (a) Briefly explain satellite based TV broadcast system.

(OR)

(b) Briefly explain Digital TV transmission and reception.

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