Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 41284

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Seventh Semester

Electronics and Communication Engineering

080290057 — TELEVISION AND VIDEO ENGINEERING

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define aspect ratio.

2. Why is an aluminized coating provided on the phosphor screen?

3. Why are the horizontal pulses not used as sync pulses?

4. Why different band widths are assigned to Q and I signals?

5. Mention the need for diplexer.

6. List the requirements of receiving antenna.

7. Why is a SAW filter preferred over conventional trap circuits for IF band shaping.

8. What do you understand by degaussing?

9. What is descrambler?

10. What are the basic elements of any projection system?

PART B — (5 × 16 = 80 marks)

11. (a) (i) How is the illusion of continuity created in television pictures? Why has the frame reception rate been chosen to be 25 and not 24 as in motion picture? (8)

(ii) Narrate how interlaced scanning reduces flicker and conserves bandwidth. (8)

Or

(b) (i) Explain the working principle of vidicon camera tube. (8)

(ii) Describe basic principle of a colour camera with the help of a suitable diagram. Explain why dichroic mirrors are used in the camera optics. (8)

12. (a) (i) Justify the need for pre-and-post equalizing pulses. Why is it necessary to keep their duration equal to the half-line period? (8)

(ii) Give distinguished features of PAL-B, G and I standards. Justify that the same receiver can receive PAL B and G standards of transmissions. (8)

Or

(b) (i) Draw basic circuit of the NTSC coder and explain how the chrominance signal is interleaved with the Y signal after quadrature modulation. (8)

(ii) Explain why NTSC receiver needs a tint control. Similarly explain why a SECAM receiver does not need colour and saturation controls. (8)

13. (a) Describe briefly co-channel and adjacent channel interference effects. Discuss the technique employed to eliminate such interference in fringe areas. (16)

Or

(b) (i) What is a ghost image and what causes it to appear on the receiver screen along with the produced picture. What causes trailing and leading ghost images? (8)

(ii) Brief the structure of yagi aerials. (8)

14. (a) With the neat block diagram, explain the operation of monochrome receiver. (16)

Or

(b) (i) Describe the gun structure and focusing details of a Trinitron colour picture tube. (8)

(ii) Brief the need of pincushion distortion correction and the method employed to obtain a distortion free raster. (8)

15. (a) Discuss about cable TV signal processing. (16)

Or

(b) Draw the block diagram of a TV 'RECEIVE ONLY' (TVRO) earth station receiver and explain how the converted down-link IF signal of a TV channel is processed to obtain both video and audio signals. (16)

———————