EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION MAY 2012

EC 04 805 D—TV ENGINEERING AND RADAR SYSTEMS

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

Part A

1. (a) Explain the principle of interlaced scanning.

 (b) Explain the components of a CCD camera.

 (c) Define and explain *hue* and saturation.

 (d) Explain the principle of formation of chrominance signal with a neat sketch.

 (e) Give an account on 'MPEG standard'.

 (f) What is scrambling ? Explain its significance.

 (g) Explain the advantages of Radar systems.

 (h) What are the types of tracking radar ? Explain any *one* in detail.

(8 × 5 = 40 marks)

Part B

2. (a) Explain the constitution and principle of operation of CCD camera with a neat diagram.

Or

 (b) Define and explain :

 (i) Channel bandwidth.

 (ii) VSB transmission.

 (iii) Positive and negative modulation.

(3 × 5 = 15 marks)

3. (a) Differentiate a color TV tube from a monochrome TV tube. Explain the difference in detail.

Or

 (b) Explain in detail the principles of NTSC and PAL coder and decoder.

4. (a) Discuss in detail the general concept of video bit reduction with neat diagrams.

Or

 (b) Explain the application of coaxial cable for CATV with a neat diagram.

5. (a) Derive the simple radar range equation. Explain the limitations of this equation.

Or

 (b) Draw neat block diagrams for CW radar and FM CW radar. Explain their principle of operation in detail.

(4 × 15 = 60 marks)