

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

AUDIO AND VIDEO SYSTEMS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define intensity of sound wave.
2. What is flicker ?
3. What is the need of synchronizing pulses ?
4. Why dc re-insertion is needed in video amplifier ?
5. What is reverse compatibility ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. What is Hi-Fi ? What are the important characteristics of a Hi-Fi system ?
2. Compare dc and ac biasing used in magnetic recording.
3. Explain interlaced scanning.
4. Explain with a diagram, the basic principle of operation of SMPS.
5. What are the advantages of using AGC ?
6. Explain the factors that affect tuner design.
7. Why the (R-Y) and (B-Y) signals are chosen for transmission ?

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the principle of magnetic recording and reproduction of sound. 7
 (b) Explain the construction and operation of a condenser microphone with figure. 8

OR

- IV (a) Explain the construction of Electrodynamic loud speaker. 8
 (b) Draw the block diagram of PA system and explain each block. 7

UNIT — II

- V (a) With a basic block diagram, explain monochrome TV transmitter. 7
 (b) Explain with a diagram, the working principle of Vidicon TV camera. 8

OR

- VI Explain with figure, the construction of monochrome picture tube. 15

UNIT — III

- VII (a) Draw the block diagram of VHF tuner and explain each block 9
 (b) With a basic circuit diagram, explain the operation of video detector. 6

OR

- VIII (a) With the help of a block diagram, explain the operation of horizontal AFC system. 7
 (b) Explain the working of a vertical transistor blocking oscillator circuit. 8

UNIT — IV

- IX (a) Explain PAL encoder with block diagram. 8
 (b) Explain the merits of Digital TV receiver. 7

OR

- X (a) Explain with figure the operation of Delta gun colour picture tube. 8
 (b) With block diagram, explain Digital satellite TV receiver. 7