

DipIETE – ET (Current Scheme)

Time: 3 Hours

DECEMBER 2016

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q. 1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. The primary pigment colours are :-

(A) Red, Green and Blue	(B) Red , Yellow, Blue
(C) Magenta, Cyan and Yellow	(D) None of these
- b. According to C.C.I.R standard, horizontal scanning frequency is :-

(A) 15,725 Hz	(B) 50 Hz
(C) 15,625 Hz	(D) None of these
- c. Sound IF in C.C.I.R standard is

(A) 33.4 MHz	(B) 38.9 MHz
(C) 41.25 MHz	(D) None of these
- d. Composite Video Signal is :-

(A) Modulated camera signal
(B) Blanking pulses
(C) Camera signal + sync pulses + blanking pulses
(D) None of these
- e. Modulation system employed for video signal in PAL B system is :-

(A) AM	(B) FM
(C) PM	(D) None of these
- f. The rotating head assembly of a Video tape recorder :-

(A) Actually receives the audio signal
(B) Actually receives the video signal
(C) Receives frequency modulated video signal
(D) Dose not receive any signal
- g. Balun is located :-

(A) Between the receiving antenna and the tuner input
(B) In the tuner circuit
(C) Between the tuner and IF section
(D) None of these
- h. The Voltage required for picture tube anode, assuming a 51 cm screen is typically.

(A) 10 KV	(B) 15 KV
(C) 1000 KV	(D) 18 KV

- i. The purpose of “Colour Killer” in a Colour Television receiver is
 (A) To cut off the chroma section during monochrome transmission.
 (B) To adjust amount of colour in the picture
 (C) To separate primary colours.
 (D) None of these
- j. Aspect Ratio is :-
 (A) Height to Width ratio. (B) Width to Height ratio.
 (C) Length to Width ratio. (D) Length to Height ratio.

**Answer any FIVE Questions out of EIGHT Questions.
 Each question carries 16 marks.**

- Q.2** a. Define following :-
 (i) Flicker (ii) Scanning
 (iii) Hue (iv) Frame
 (v) Fields (5)
- b. Explain Interlaced Scanning. (3)
- c. Describe VSB Transmission. (8)
- Q.3** a. Name the types of Colour picture tube and explain the working of Precision in line (P.I.L) / Guns in line colour picture tube with the help of neat diagram. (10)
- b. Why is a medium persistence phosphor is preferred in picture tube of T.V receiver? (2)
- c. What is the function of aquadag coating on the inner side of the picture tube wall? (4)
- Q.4** a. Sketch composite video signal wave form and indicate :
 (i) Extreme White Level (ii) Blanking Level
 (iii) Pedestal height (iv) Sync pulse level (2x4=8)
- b. Explain the details of blanking pulses. Why it is needed? (8)
- Q.5** With the help of a neat block Diagram explain the working of PAL colour T.V receiver. (10+6=16)
- Q.6** a. Explain how the luminance signal (Y – Signal) and colour difference signals are develop from camera output. Why is the “Y” Signal set = $0.3 R + 0.59 G + 0.11 B$? (8)
- b. Explain additive mixing and subtractive mixing. (4+4=8)
- Q.7** a. Enumerate safety precautions which must be observed while servicing a television receiver. (8)
- b. Tabulate likely faults and faulty section of the receiver for the following visual indications.
 (i) Sound normal but no raster
 (ii) Poor interlacing
 (iii) Fold over in picture but sound normal
 (iv) Poor resolution (4x2 = 8)
- Q.8** a. How a video camera operates? (8)
- b. Explain the EIA standard for color Bar signal. (8)
- Q.9** Write short notes on any **TWO**:- (4x2 = 8)
 (i) AGC (ii) Colour Burst (iii) Electrostatic Focussing in picture tube