ROLL NO. _____

Code: DE68 **Subject: TELEVISION ENGINEE**

DipIETE – ET (NEW SCHEME)

Time: 3 Hours **JUNE 2012** **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 horizontal resolution of a picture is decided by

(A) No. of vertical lines **(B)** Aspect ratio
(C) No. of horizontal lines **(D)** Pixel size

b. CAMCORDERs usually use pickup device as,

(A) CMOS **(B)** CCD
(C) Image orthicon **(D)** LCD

c. The chrominance signal is

(A) Sum of primary colours
(B) Sum of colour difference signals
(C) Resultant of modulated quadrature colour difference signals
(D) Result of colour difference signals

d. The pattern of scanning lines in a video system

(A) Retrace **(B)** Resolution
(C) Raster **(D)** Interface

e. The bandwidth allowed for the colour difference quadrature signals after modulation is about

(A) 0.99 MHz **(B)** 2 MHz
(C) 1.3 MHz **(D)** 0.6 MHz

f. Serrated pulses give information of

(A) Equalizing lines **(B)** Vertical synchronization
(C) Horizontal synchronization **(D)** End of vertical period

g. Differential phase error causes

(A) Change in luminance **(B)** Change in colour
(C) No picture **(D)** Distorted picture

h. Camera Linearity is checked using

(A) Vector scope **(B)** Ball Chart
(C) Signal generator **(D)** Multimeter

i. In a TV receiver, the colour killer_____

(A) ensures that no colour is transmitted to monochrome receivers
(B) cuts off the chroma stages during monochrome reception
(C) prevents overloading
(D) makes sure that the colour burst is not mistaken for sync pulses by cutting off reception during the back porch

j. The horizontal Deflection circuit helps in following processes

(A) Horizontal and vertical deflection
(B) Horizontal deflection and H. V. generation
(C) Horizontal deflection
(D) Synchronization

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

Q.2 a. Draw the block schematic of Cable T.V. and explain how a cable operator provides various channels to the customer. **(6)**

b. Bring out the similarity between motion picture and television. **(4)**

c. What is the need of vertical and horizontal synchronization, how are these achieved? **(6)**

Q.3 a. Explain the basic structure of an electron gun with neat sketch. **(8)**

b. List the important precautions required in picture-tube. **(8)**

Q.4 a. Explain "Non-linear & Poor-interlaced scanning" Raster distortions in pictures. **(6)**

b. Why are the lines scanned during vertical trace much closer together than lines scanned during vertical flyback? **(6)**

c. Why convergence is required? **(4)**

Q.5 a. How many saw tooth are required in a CCIR-B standards? How these are used to create a raster, explain drawing wave forms and timings? **(8)**

b. How flicker and power line noise is avoided in a video? **(4)**

c. Draw composite video signal for a seven scale Grey scale, giving normalized amplitudes and timings for one horizontal period of 64 micro seconds. **(4)**

Q.6 a. What is the need of both luminance and chrominance during transmission? How are these generated and transmitted? **(8)**

b. Explain the following:

(i) Desaturated colour.
(ii) Colour Synchronization burst. **(8)**

Q.7 a. What is meant by colorplexed video signal, give an example how is it built? **(8)**

b. Draw a EIA Test pattern and explain how it is used to test a T. V receiver. **(8)**

Q.8 a. With the help of a block diagram explain the working of a heterodyne T. V. receiver. **(8)**

b. What is the need of automatic gain control and automatic frequency control, explain the principle of these. **(8)**

Q.9 a. What are the various steps required to systematically trouble shoot a T. V. receiver. **(8)**

b. Write short notes on: **(8)**
(i) T.V. Test Equipments.
(ii) T.V. Performance Test.