

Time: 3 Hours

**JUNE 2014**

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. In television broadcasting

- (A) AM is used for picture signal and FM for the associated sound signals.
- (B) FM is used for picture signal and AM for the associated sound signals.
- (C) AM is used for picture signal and AM for the associated sound signals.
- (D) FM is used for picture signal and FM for the associated sound signals.

b. In TV frame and field frequencies are

- (A) 30 frames/second, 30 fields/second
- (B) 60 frames/second, 60 fields/second
- (C) 30 frames/second, 60 fields/second
- (D) 60 frames/second, 30 fields/second

c. The camera signal with blanking and sync is called

- (A) Correlated video signal
- (B) Composite video signal
- (C) Colour video signal
- (D) Synchronous video signal

d. A crack or puncture in the picture tube results in a violent inrush of air is called

- (A) Pincushion
- (B) Explosion
- (C) Implosion
- (D) Evacuation

e. The horizontal scanning frequency in a TV system with 525 lines and 30 frames/second is

- (A) 15625 Hz
- (B) 1570 Hz
- (C) 30 Hz
- (D) 60 Hz

**Code: DE68****Subject: TELEVISION ENGINEERING**

- f. Which of the following colour is produced by adding only red and blue?
- (A) Yellow (B) Cyan  
(C) Magenta (D) Pink
- g. The colour burst is transmitted on the back porch of each
- (A) Horizontal blanking pulse (B) Vertical blanking pulse  
(C) Horizontal sync pulse (D) Vertical sync pulse
- h. The number of gray-scale steps in the EIA test pattern is
- (A) 16 (B) 20  
(C) 18 (D) 10
- i. The operating control used in the TV receivers vertical oscillator section is
- (A) Contrast (B) Brightness  
(C) Vertical Hold (D) Fine tuning
- j. When the frequency of the modulating signal equals the horizontal line scanning frequency
- (A) Vertical bars are formed (B) Horizontal bars are formed  
(C) Diagonal bars are formed (D) Sound bars are formed

---

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

---

- Q.2** a. Explain with a neat diagram, television broadcasting system. (8)
- b. What is the function of blanking pulses and explain horizontal and vertical blanking? (8)
- Q.3** a. Explain the precaution to be taken in television picture tubes. (8)
- b. Explain the magnetic deflection in a picture tube. (8)
- Q.4** a. Explain:  
(i) Pincushion distortion (ii) Barrel distortion  
(iii) Trapezoidal distortion (8)
- b. Explain the synchronizing pulses. (8)
- Q.5** a. With a block diagram, explain how the picture information is decoded. (8)

**Code: DE68****Subject: TELEVISION ENGINEERING**

- b. Explain the working of Additive Color Mixture and Color Voltages. (8)
- Q.6** a. Explain color subcarrier frequency selection. (8)
- b. How is the 3.58 MHz modulated chrominance signal transmitted to the receiver? Why is the 3.58 MHz signal called a subcarrier? (8)
- Q.7** a. Explain resolution wedges in the test pattern. (8)
- b. Explain tests for ringing in the picture. (8)
- Q.8** a. Explain the working of chroma section with a neat block diagram. (10)
- b. Explain the function of colour killer circuit. (6)
- Q.9** a. Explain the process of TV receiver servicing. (9)
- b. Explain sound interference in the picture. (7)