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BIELE-001

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

00073

December, 2016

BIELE-001 : TELEVISION ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Assume missing data suitably, if any. Use of scientific calculator is allowed.*

1. (a) Explain vestigial side band transmission used in a TV system. *4*

(b) How is the illusion of continuity created in TV pictures ? Why has the frame reception rate been choosen to be 25 and not 24 as in motion pictures ? *6*

2. What do you understand by active and balancing periods in horizontal and vertical scanning ? Give the periods of normal, active and retrace intervals of horizontal and vertical scanning as obtained in the 625 line system. *10*

3. With neat diagrams of circuits of horizontal and vertical deflection system, explain their operation. *10*

4. Draw the block diagram of a monochrome TV receiver and briefly review the nature of input and output signals at various sections. *10*

5. Explain the following terms : *10*

   (a) Primary colours

   (b) Hue

   (c) Saturation

   (d) Dichroic mirrors

   (e) Colour circle

6. (a) What is the basic difference between SECAM and other Colour TV systems ? *5*

   (b) Explain the working of delta gun picture tube. *5*

7. Draw the basic block diagram of a fixed frequency channel modulator and explain how modulation is affected in two stages. How are the channel carrier frequencies generated and maintained at the chosen frequency ? *10*

8. Draw the basic block diagram of an UP-LINK set-up and explain how the signals are compressed, packetized and multiplexed before modulation and transmission. *10*

9. (a) Write a short note on CCD Camera. *5*

(b) A tuned radio frequency receiver has to be designed with a single tuned circuit using a 9×10^{-6} Henry inductor. The ideal 10 kHz bandwidth occurs at 1100 kHz. Determine the bandwidth of the receiver at 550 and 1550 Hz. *5*

10. (a) Discuss the general specifications of NTSC standard. *5*

(b) Find the image frequency for a standard broadcast band AM receiver using 455 kHz intermediate frequency that is tuned to a station at 640 kHz. *5*