

**B.TECH. IN ELECTRONICS AND
COMMUNICATION ENGINEERING (BTECVI)**

Term-End Examination

December, 2012

BIELE-001 : TELEVISION ENGINEERING

Time : 3 hours

Maximum Marks : 70

*Note : (i) Attempt any seven questions in all.
(ii) Question No. 1 is compulsory.*

1. (a) What are the values of horizontal and vertical scanning frequencies ? **5x2=10**
- (b) Name the type of AGC used in Television Receiver.
- (c) Define dark current in Vidicon.
- (d) What is NTSC standard ?
- (e) What is meant by Scrambling ?

2. (a) What do you understand by interlaced scanning ? Show that, it reduces flicker and conserve bandwidth. **5**
- (b) Discuss the Demerits of Vestigial sideband transmission. **5**

3. (a) Discuss the merits and demerits of positive and negative modulation and justify the choice of negative modulation in most TV systems. 7
- (b) What do you understand by resolution or kell factor ? 3
4. (a) Explain how composite video signal is detected ? How is the polarity of the video output signal decided ? Why is it dependent on video amplifier stages ? 6
- (b) Draw the block diagram of an RF Tuner. 4
5. (a) Draw the AFC circuit and explain its operation. 7
- (b) What do you understand by image rejection ratio ? 3
6. Describe with a diagram the construction of a colour TV camera and its optical system. Why are the outputs of all the three camera tubes set equal when standard white light is made incident ? 10
7. Explain with a suitable block diagram the encoding process in the PAL colour system, why is the colour burst signal transmitted after each scanning line ? 10

8. Explain the schematic diagram of a Modern Cable TV system and also discuss briefly the cable decoders. 10
9. Discuss the advantages of Digital TV in detail and explain its principle of operation. 10
10. Write short notes on *any two* of the following : $2 \times 5 = 10$
- (a) Wave traps and scrambling methods.
 - (b) Co-axial cable for CATV and cable distribution system
 - (c) SECAM coder and decoder
 - (d) CCD camera.
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