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2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS
TV ENGINEERING
(ELECTRONICS & COMMUNICATION ENGINEERING)

NOVEMBER 2005

TIME – 3 HOUR
MARK – 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define aspect ratio, contrast, brightness and resolution.

(b) How is flicker eliminated by using interlaced scanning?

(c) Derive the video bandwidth requirement for 625 line system. *[6+6+4]*

2. (a) Clearly explain different components in composite video signal.

(b) Justify the need for pre and post equalizing pulses. *[8+8]*

3. (a) What is meant by the resolving power of a camera tube? How is it specified?

(b) What is meant by the gamma of a camera tube? Explain how the gamma of the camera tube, the camera signal chain and the picture tube are matched to give a overall faithful reproduction of the picture. *[6+10]*

4. (a) Draw the block diagram of high level modulation transmitter and explain the function of each block.

(b) What is IF modulation? Explain the criteria of selection of IF frequency. *[4+12]*

5. (a) Draw the simplified circuit diagram of the vertical deflection amplifier employed in TV receiver and explain its operation.

(b) Explain the tuner operation for Channel 4 of 625 line system. *[5+11]*

6. (a) What is AFC in sync separator circuit? What are the methods to implement AFC?

(b) Draw the basic block structure of AFC and explain how control voltage is developed. *[10+6]*

7. (a) How are the luminance and color difference signals produced in the output of a color camera?

(b) Explain the corrections that are normally made to achieve almost distortion less reproduction of color on the screen of a PIL tube. *[6+10]*

8. (a) Compare the performance and complexity of the NTSC and PAL systems.

(b) What are the different types of cables and networks used in cable TV? *[12+4]*