

MODEL QUESTION PAPER

MFET4

I Semester ,M.TECH Examination, August 2011 DIGITAL VOICE AND PICTURE COMMUNICATION

Time: 3 Hours

Max. Marks: 75

GROUP A : Answer any three questions.

- Q.1. Write down the Differences between CD recording and tape Recording?
- Q.2. What are the various stages in the broad casting chain from microphone to transmitter? Discuss the purpose and indicate signal levels in each stage?
- Q.3. Explain the TDM and Modems in details.
- Q.4. How are short waves propagated and what is the effect of various ionospheric layers? What is the maximum usable frequency? What are the advantages and limitations of broadcasting at short-waves?
- Q.5. Explain the working of Digital Video processing with block diagram.

GROUP B : Answer any three questions.

- Q.6. What are the advantages of the SSB system?
- Q.7. Draw the block diagram of microwave link equipment employing dual frequencies and space diversity and explain its operation?
- Q.8. Draw the block diagram of communication receiver and explain the working of squelch system block in detail.
- Q.9. (a) Draw and explain the block diagram of Tuned Radio frequency and super heterodyne receiver?
(b) What is tracking?
- Q.10. Give a brief outline of the TV standards adopted in India. What are the different performance tests carried out on a monochrome receiver.

GROUP C : All Questions are Compulsory.

Q.11 Fill in the blanks

- (i) Transmission line can be used for _____ matching.
- (ii) The de-emphasis is employed in _____ receivers.
- (iii) The transmission of the two color difference signal and the luminance signal is sufficient for _____ transmission.
- (iv) Full form of PDM is _____.
- (v) The root mean square noise voltage of the capacitor in parallel _____ circuit with noisy resistor is given as _____.

Q.12 Multiple choice question.

- (i) The distortion which is caused by asymmetry in transmitting or receiving devices is
 - (a) Bias
 - (b) Fortuitous
 - (c) Characteristic
 - (d) None
- (ii) What frequency range is the high Frequency band?
 - (a) 100 KHz
 - (b) 1GHz
 - (c) 30 to 300 MHz
 - (d) 3 to 30 MHz
- (iii) Noise factor is also called
 - (a) Noise temp.
 - (b) Noise figure
 - (c) Noise ratio
 - (d) all of these
- (iv) A super heterodyne receiver with an IF of 450 KHz is tuned to a signal of 1200 KHz, the image frequency is _____.
 - (a) 750 KHz
 - (b) 1650 KHz
 - (c) 2100 KHz
 - (d) 1200 KHz
- (v) Which of the following frequencies will be most suitable for satellite communication?
 - (a) 30 MHz
 - (b) 300 MHz
 - (c) 2500 MHz
 - (d) 2100 MHz

Q.13 True or false

- (i) A super group is made of 16 groups.
- (ii) The vidicon is a stereo amplifier.
- (iii) The baseband modulating signal has a spectrum of 60 KHz to 552 KHz.
- (iv) The Ground waves, also called surface waves, in fact do not exist.
- (v) TV receiver must also be provided with automatic gain control circuit to maintain a relatively constant video signal output.
