Total No. of printed pages = 4

Et-601/CE&M /6th Sem/2016/N

CONSUMER ELECTRONICS AND MAINTENANCE

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No.1 and any *five* from the rest.

1. (a) Fill in the blanks : 1×10=10

(i) In principle a microphone is like a ——— (dynamo, motor).

(ii) The range of audio frequency is 16 Hz to ——— (1 KHz, 4 KHz, 10KHz, 20KHz)

(iii) Woofer reproduces ——— frequency response and tweeter reproduces ——— frequence response. (high, low, mid)

(iv) The greater the gap size, lower will be the ——— to give optimum output.

(magnetism, frequency, wavelength, voltage)

[Turn over

(v) Head gap allows magnetic lines of force to pass through the tape. This statement is ——— (true, false).

(vi) Photo sensitive materials convert ——— into video signal. (sound, brightness, colour, VHF signal)

(vii) India uses ——— colour system. (NTSC, PAL, SECAM)

(viii) Relative speed of tape is increased using ——— heads. (rotating, stationary)

(ix) Stereophony gives sense of ——— to the listeners. (loudness, timbre, pitch, directions)

(x) Cathode ray tube converts ——— into brightness. (video signal, light, colour, VHF).

2. What is the difference between Microphone and Loudspeaker ? What are characteristics of a good microphone ? Name different types of microphone and explain with a neat sketch working principle of any one of them. 1+2+2+7=12

3. What are sensitivity, selectivity and fidelity of radio receiver ?

   Draw the block diagram of a superheterodyne AM radio receiver and explain each block. Also mention some common faults and their rectifictions. 3+7+2=12

4. How is the tape recorded ? What is the relation between head gap, tape speed and recorded frequency ?

   Draw the block diagram of a tape record / replay system and explain each block. 2+2+8=12

5. What is the full form of PAL in TV system ? Name the primary colour in TV system.

   Draw the block diagram of a monochrome TV receiver and explain the vertical deflection and horizontal deflection sections. 1+1+4+3+3=12

6. Why is the rotating head is used in VCR ? How monochrome and colour signal are separated ? Why monochrome signal is frequency modulated and colour signal is down converted ? Draw the block diagram of VCR. 2+3+3+4=12

7. Write short notes on any *two* : 6×2=12

(i) Washing machine

(ii) CD player

(iii) Microwave oven

(iv) Balance, bass and treble control

(v) Yagi Udr antenna.