



SF-8334

B. E. - III (Sem. - VI) (ECC) Examination

May/June - 2011

Audio & Video Systems

(New Syllabus)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृशावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य कभवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
B. E. - 3 (SEM. - 6) (ECC)

Name of the Subject :  
AUDIO & VIDEO SYSTEMS (NEW SYLLABUS)

Subject Code No. : 8 3 3 4 Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) Attempt all the questions.

(3) Figures to the right indicate full marks.

1 (a) Give the answers :

10

- (i) Sound is a \_\_\_\_\_ wave motion (longitudinal, transverse, electromagnetic, pulse)
- (ii) Sound of 60 dB intensity at 40 Hz gives the same loudness as sound of 0 dB 1000 Hz. Then loudness at 40 Hz is \_\_\_\_\_ phon. (0,40,60,1000)
- (iii) \_\_\_\_\_ is wavelength of sound of 1000 Hz assuming its velocity to be 344 m/s (34.4 cm, 30 cm 24.4 cm, 20 cm)
- (iv) With respect to 1000 Hz, two octave wide note is \_\_\_\_\_ Hz and 2<sup>nd</sup> harmonic is \_\_\_\_\_ Hz. (1000, 2000, 3000, 4000).
- (v) The unit of pitch \_\_\_\_\_ (some, phon, mel, meter)
- (vi) Frequency range for telephone speech is \_\_\_\_\_.
- (vii) A moving coil microphone works on the principle of \_\_\_\_\_.
- (viii) \_\_\_\_\_ microphone is used in telephones.
- (ix) \_\_\_\_\_ microphone's directivity pattern is bi-directional. (moving coil, ribbon, crystal, condenser, carbon)
- (x) What is piezo electric effect ?

- (b) Explain terms with respect to microphone: sensitivity, directivity, distortion. 5
  - (c) Describe a different classes of Power amplifier with sound amplification. 5
- 2**
- (a) Explain a carbon microphone with the help of construction, functioning, application and proper diagrams. 7
  - (b) Explain a Moving coil corn type loudspeaker with the help of construction, functioning, application and proper diagrams. 8

**OR**

- (a) Explain a moving coil Microphone with the help of construction, functioning, application and proper diagrams. 7
  - (b) Explain a Electrodynamic loudspeaker with the help of construction, functioning,. application and proper diagrams. 8
- 3** Write a short note : (any **three**) 15
- (i) Comparison of different microphones
  - (ii) Voltage amplifier design
  - (iii) Cross over network
  - (iv) Sampling and quantizing in PCM audio
  - (v) PA systems and installation.

- 4** Attempt the following : 10×2=20
- (i) What is scanning ?
  - (ii) List front panel controls of TV receiver.
  - (iii) Define negative modulation. According to CCIR-B standards which modulation is used in our country ?
  - (iv) List video signal characteristics according to CCIR-B standards.
  - (v) List three distinct characteristics to describe any visual information.
  - (vi) While televising a static desecrated colour scene , the camera outputs were found to have following amplitudes:  
 $V_R = 0.7V$ ,  $V_G = 0.6 V$ ,  $V_B = 0.2 V$   
 Compute value of 'Y' signal.

- (vii) What are the range of frequencies assigned in VHF and UHF band of channels for television broadcasting.
  - (viii) List various colour picture tubes for television.
  - (ix) Define video compression.
  - (x) Describe any two video interfaces and connectors.
- 5** (a) Draw and explain Block diagram of SECAM decoder. **8**
- (b) List various types of colour picture tubes and explain in detail Precision-in-line (PIL) colour picture tube. **7**

**OR**

- (a) Discuss 4:3 to 16:9 aspect ratio conversion. **8**
  - (b) What is LCD ? What are the types of LCD technologies and explain flat panel LCD display. **7**
- 6** Attempt any **three** : **5×3=15**
- (i) Write a short note on Digital Video Broadcasting (DVB)
  - (ii) Write differences between LED Backlit and LCD Backlit Displays.
  - (iii) Draw and explain block diagram of monochrome Television receiver.
  - (iv) Enlist ten characteristics of CCIR-B standards.
  - (v) Why is (G-Y) signal is not transmitted ?