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ALVA'S BASAVA MOLLER COLLEGE OF ENGINEERING KARKALA

REG. NO.

Credit Based Fourth Semester BASLP Degree Examinations

May 2008

BAPSLC - 254 -Electronics and Acoustics

Time : 3 Hours Max.Marks: 100

Note : Answer All questions

UNIT- I

1. a. Explain Doppler effect. Obtain expressions for the apparent frequency of the sound heard for the following cases.
   i. moving observer, source at rest.
   ii. moving source, observer at rest.
   iii. both source and observer move through the transmitting medium
   Explain the significance of Doppler shift in acoustics. 14

   b. Write a note on harmonics and overtones. 6

OR

2. a. Explain interference of sound waves. 6

   b. Explain the concept of resonance. With necessary theory explain the working of Helmoltz resonator. 14

UNIT- II

3. a. Give an account of anechoic sound isolated rooms. 5

   b. Explain the terms; reverberation, time of reverberation and standard time of reverberation. Mention the factors on which reverberation depends. 5

   c. Based on Sabine's formula for reverberation time, how do you calculate the reverberation time for a hall ? 10

OR

4. a. Define the following
   (i) decibel sound pressure level (ii) phon (iii) sone 9

   b. Explain with examples, how the total SPL that results by combining sources of
   (i) equal intensity (ii) unequal intensities, are calculated. 11

UNIT- III

5. a. Define energy and power with proper units in SI system. 4

   b. Express the sensitivity of the microphone in terms of voltage output and power output. 6

   c. With a neat circuit diagram, explain the construction and working of a single stage RC coupled common emitter transistor amplifier with voltage divider bias. 10

OR

Contd... 2

6. a. Mention different types of transducers. With relevant diagrams explain the working of unidirectional microphone. 12

   b. Write short notes on ac & dc power supplies. 8

UNIT- IV

7. a. With the help of a neat diagram explain the construction and working of air suspension loud speaker. Explain baffles and enclosures. 12

   b. Write a note on harmonic distortion and transient distortion. 8

OR

8. a. With relevant diagrams, explain how does a tape recorder system works. 10

   b. What is a hearing aid? Mention different types of hearing aids. 05

   c. Write short noted on digital tape recording. 0:

UNIT- V

9. a. List the advantages of Integrated circuities (IC's) over discrete components. 05

   b. Explain how the integrated circuit are fabricated. 05

   c. With a neat diagram explain the working of cathode ray oscilloscope. 10

10. a. Give the block diagram of a multimeter. Explain in detail how a multimeter can used to measure current, voltage and resistance. Mention the merits and demerits of portable multimeter. 12

    b. Write a note on 08

       i) frequency counter

       ii) sound level meter

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