

Total No. of Pages 2

Roll No.

EIGHTH SEMESTER

B.E. (EC)

MID SEMESTER EXAMINATION **MARCH** 2005

EC-411 CONSUMER ELECTRONICS

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Attempt **ALL** questions.
All question carry **EQUAL** marks
Assume suitable missing data, if any.

- 1[a] Calculate the interval and number of octaves in the range of 62.5 Hz to 10 kHz.
 - [b] If the sound pressure level of 20×10^{-6} Pa is 0db, calculate the SPL in db for a sound pressure level of 2 Pa.
 - [c] The sensitivity of microphone is 140 db below 1 volt per Pa. Calculate its output.
 - [d] If the intensity of sound from a L/S is 0.07 w/m^2 at a distance of 1 meter when the amplifier delivers 25 watts to the L/S. Calculate the efficiency of the L/S.
 - [e] The output of a directional mic is 2 m V. If an omni-directional mic placed in an identical condition gives 110 μ V, calculate the directivity of the directional mic.
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- 2[a] Explain the working of a condenser microphone. Mention typical values of its parameters and give its applications.
 - [b] Describe noise cancelling microphone.
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- 3[a] Explain the phenomenon of masking of sound.
 - [b] Explain bass, mid range and treble frequencies.

- 4[a] Explain dual loud speaker system. Explain the necessity of cross-over network.
- [b] Explain the working of a moving coil L/S and give its characteristics.
- 5 Define high fidelity. Mention essential requirements of Hi-Fi system and discuss how these can be achieved.

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EIGHTH SEMESTER

B.E. (EC)

MID SEMESTER EXAMINATION **MARCH 2005**

EC-412 COMPUTER COMMUNICATION AND ELECTRONIC SWITCHING

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer *ALL* questions.
Assume suitable missing data, if any.

- 1[a] Compare and contrast the TCP/IP model with ISO OSI reference model. (3)
- [b] Match the following to one or more of the seven OSI layers.
- i. Format and code conversion services
 - ii. Overseas end-to-end transmission of data packets
 - iii. Verification of log-in and log-out
 - iv. Error correction and retransmission
 - v. Reassembly of data packets into a message. (2)
- 2[a] Draw the wave form for 01001110 in each of the following methods.
- (i) NRZ-L (ii) NRZ-I
 - (iii) RZ (iv) Manchester
 - (v) Differential Manchester (vi) AMI (3)
- [b] Compare the bandwidth needed for unipolar encoding and RZ encoding assuming the worst-case scenario for both. (2)
- 3[a] What signal-to-noise ratio is needed to put a T1 carrier on a 50 KHz line? (3)
- [b] Compare the performance of optical fiber and copper cables for transmission of information. (2)

- 4[a] Explain the selective Repeat ARQ protocol. What is the maximum allowed send window size for a given sequence numbering of m-bits? (5)

OR

- [b] In a system using stop and Wait ARQ, the frames are 1250 bytes long including 25 bytes of overhead. The "ACK" frames are 25 bytes long. Calculate the efficiency of stop and Wait ARQ in a system that transmits at $R=1$ Mbps and with reaction time of 1 ms for channels with bit error rate of (i) 10^{-6} (ii) 10^{-5} (iii) 10^{-4} (5)