M.Sc. S.Y. (Physics) Sem-IV
MSC241011 - Electroacoustics (Elective) Paper-X

P. Pages : 2

Time : Three Hours ||| *1783* ||| Max. Marks : 80

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1.   Either.

a)   Explain absorption due to heat conduction and viscosity?   **8**

b)   Explain attenuation due to phonon-phonon interaction.   **8**

OR

e)   Discuss sing-around and pulse method.   **8**

f)   What is piezoelectric effect? Write down advantage & disadvantage of quartz crystal.   **8**

2.   Either.

a)   Derive the equation for decay of sound in dead rooms.   **8**

b)   Explain the passive detection hydrophone systems.   **8**

OR

e)   Derive an equation of sound absorption coefficient and how the sound absorbing materials used for noise reduction.   **8**

f)   Explain the effect of noise and reverberation on masking.   **8**

3.   Either.

a)   Explain in details an idealized direct radiator speakers.   **8**

b)   Explain carbon microphone and unidirectional cardioid microphone.   **8**

OR

e)   Explain electroacoustic reciprocity theorem and reciprocity calibration of microphone.   **8**

f)   Explain in details of recording and reproduction of sound.   **8**

4.   Either.

a)   Explain computation of loudness level and speech interface level.   **8**

b)   Write a short note on.   **8**
       a) Acoustic pressure.   b) Acoustic intensity.

OR

e)	Explain in details various noise criteria for various spaces.		**8**
f)	Explain octave band analyzer.		**8**

5. Attempt all the followings.

a)	Explain application of ultrasound in medical and industrial field.		**4**
b)	Give the fundamentals of musical scale.		**4**
c)	Give brief account on Tweeter.		**4**
d)	Explain the term SIL.		**4**

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