S.Y.M.SC.(Physics) Fourth Semester old MSC241011-Paper-X (Elective) : Electroacoustics

P. Pages: 1

Time : Three Hours

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GUG/W/18/2429

Max. Marks: 80

1.	Either
1.	Either

	a)	Deduce an equation of motion for velocity of sound in fluid and also derive an expression for intensity of plane wave.				
	b)	Obtain an expression for single relaxation time for internal degree of freedom.	8			
		OR				
	e)	Explain how ultrasonic waves are generated by piezoelectric effect method.	8			
	f)	Explain pulse method of propagation of ultrasonic waves.	8			
2.	2. Either					
	a)	Describe the classical ray theory in details.	8			
	b)	Derive an equation for decay of sound in dead room and live room.	8			
		OR				
	e)	Obtain an expression for sound transmission loss in sea water.	8			
	f)	Explain the term "Masking by Noise"	8			
3.	Eith	er				
	a)	Deduce an expression for motion of impedance and input electrical impedance for idealized direct radiator speaker.	8			
	b)	What is Tweeter? Describe the various types of Tweeter.	8			
		OR				
	e)	How Dolby noise reduction works.	8			
	f)	Explain how reproduction and recording of sound done.	8			
4.	Eith	er				
	a)	Explain basic sound measuring System using sound level meter.	8			
	b)	Explain the term "Band Analyser" in details.	8			
		OR				
	e)	Mention various noise criteria for various spaces.	8			
	f)	What is LL and SIL. Explain in brief.	8			
5.		Attempt all the followings:				
	a)	Explain various applications of ultrasound in an industrial and medical field.	4			
	b)	Give the applications of underwater acoustic.	4			
	c)	Explain condenser microphone.	4			
	d)	Explain quantity for acoustic power.	4			
