		PHYSICS LECTURE WISE QUESTIONS (1st YEAR)		
Unit No. & Name	**Lecture No.**	**Questions**	**Weightage as per University Exam**	**Reference**
MODULE I **RELATIVISTIC MECHANICS**	**L1**	What are Galilean transformations? How they failed?	5	UPTU (2014-15)
		What are inertial and non-inertial frames?	2	UPTU (2013-14)
		Whether earth is an inertial frame of reference on not, Explain.	2	AKTU (2016-17)
	L2	What was the objective of Michelson Morley experiment? What conclusions were drawn from this experiment?	2	UPTU (2010-11)
		Explain the construction and working of Michelson Morley experiment.	7.5	UPTU(2010) (2012-13)
		Give the postulates of special theory of relativity.	2	AKTU (2017-18)
	L3	Derive Lorentz transformations and use them to find the expressions for length contraction and time dilation.	7.5	AKTU (2015-16)
		At what speed should a clock be moved so that it may appear to lose one minute in each hour.	5	UPTU(2009)
		Calculate the length of rod of length 5m in a frame of reference moving with a speed 0.6c in a direction making an angle 30o with the rod.	5	UPTU (2012-13)
	L4	Obtain the expression for addition of relativistic velocities. Show that velocity of light is invariant (OR Show that it is consistent with Einstein's II postulate).	5	UPTU (2012-13)
		Show that no signal can travel faster than the speed of light.	5	UPTU (2010-11)
	L5	Derive an expression for mass variation with velocity in the relativistic range.	7.5	UPTU (2014-15)
		Derive Einstein's mass-energy relation.	5	UPTU (2011-12)
		A person observes two men each of rest mass 60 kg moving towards each other each with a velocity 0.5c. What is mass of one man as observed by the other?	5	UPTU (2014-15)
	L6	Show that rest mass of photon is zero.	2	UPTU (2013-14)
		The mass of a moving electron is eleven times its rest mass. Find its Kinetic Energy and momentum.	5	AKTU (2015-16)
		Find the relation between relativistic energy and momentum.	2	UPTU (2011)(2014)