## SYSTEMS OF PARTICLES AND ROTATIONAL MOTION

*General Instructions*: Answer all the questions. If you are unable to answer any question, go through the page number that is given against that particular question in the text book. You can find the answer.

Test Paper-II						
MAX MARKS: 30		ME: 90Mts				
1	Give the conditions for the mechanical equilibrium of a rigid body.	P158	2			
2	Explain with examples the effect of forces that produce rotation without	P159	3			
	translation in a body?					
3	Show that moment of a couple does not depend on the point about which you	P160	2			
	take the moments.					
4	What is meant by Mechanical Advantage? What is its importance?	P160	3			
5	What are the differences between the Centre of mass and Centre of gravity of a	P162	2			
	body?					
6	How will you determine the Centre of gravity of an irregular shaped body?	P161	3			
7	A metal bar 70 cm long and 4.00 kg in mass supported on two knife-edges placed	9162 P	3			
	10cm from each end. A 6.00 kg load is suspended at 30 cm from one end. Find th	e				
	reactions at the knife-edges					
8	A 3m long ladder weighing 20 kg leans on a frictionless wall. Its feet rest on the	P163	3			

A 3m long ladder weighing 20 kg leans on a frictionless wall. Its feet rest on the P163 3 floor 1m from the wall as shown in figure. Find the reaction forces of the wall and the floor.



9	What is the analogue of mass in rotational motion? Give the expression for	P163	1
	finding the same.		
10	Define Moment of inertia of a body. Give the factors on which the moment of	P164	3
	inertia of a body depends upon. What is the moment of inertia and kinetic		
	energy of a light rod of length' I' with a pair of masses rotating about an axis		
	through the Centre of mass of the system and perpendicular to the rod. The total		
	mass of the system is M.		
11	What is meant by radius of gyration of a body? Give the dimensions of it. What is	P164	3
	its value for a rod, about the perpendicular axis at its mid-point?		
12	Give the practical use of Moment of Inertia.	P164	2