Subject: Physics **Assignment No: II**
Allotment Date: 24/8/2018 **Submission Date: 01 /9/2018**

.S.N	QUESTION	MARKS	LEVEL
	OBJECTIVE TYPE		
1.	A block of mass m is kept on a horizontal table. If the coefficient of static friction μ, find the frictional force acting on the block.	1	Knowledge
2.	In a game of tug of wars, two opposing teams are pulling the rope with equal magnitude but in opposite forces of 1000kg wt at each end of the rope. What is the tension in the rope if a condition of equilibrium exists?	1	Understanding
3.	A ceiling fan has a diameter (of the circle through the outer edges of the three blades) of 120cm and rpm 1500 at full speed. Consider a particle of mass 1 g sticking at the outer end of a blade. How much force does it experience when the fan runs at full speed?	1	hot
	SHORT ANSWER TYPE I		
4.	Why are porcelain objects wrapped in paper or straw before packing for transportation?	2	knowledge
5.	A motor car is travelling at 30m/s on a circular road of radius 500m. It is increasing in speed at the rate of $2m/s^{-2}$ .What is its acceleration?	2	understanding
6.	Two blocks of equal mass m are tied to each other through a light string. One of the blocks is pulled along the line joining them with a constant force F. Find the tension in the string joining the blocks.	2	logic
7.	A force acting on a material particle of mass m first grows to a maximum value F_m and then decreases to zero. The force varies with time according to a linear law, and the total time of motion is t_m. What will be the velocity of the particle at the end of this time interval if the initial velocity is zero?	2	Hot
	SHORT ANSWER TYPE II		
8.	With what acceleration should a box descend so that a block of mass M placed in it exerts a force Mg/4 on the floor of the box?	3	understanding
9.	A bomb at rest explodes into three fragments of equal masses. Two fragments fly off at right angles to each other, with velocities of 9 m/s and 12m/s. Calculate the speed of the third fragment.	3	Multi conceptual
10.	Three blocks A, B, C of masses m_1, m_2, m_3 respectively are resting one on top of other . A horizontal pulling force F is applied on middle block B. Assuming all the surfaces are frictionless, calculate (i) acceleration of block A, B and block C (ii) normal reactions between A and B , B and C and between C and ground.	3	Evaluation
11.	A road of radius R is banked at angle θ. A car of mass m moving on the road with certain speed. The coefficient of friction between the tyres of the car and road is μ. Find the maximum speed with which the car can take turn on this road without skidding.	5	Logic
12.	A block of mass m lying on a horizontal surface (coefficient of friction=$μ_s$) is to be brought into motion by a pulling force F. At what angle with the horizontal should the force F be applied so that its magnitude is minimum? Also find the magnitude of this minimum force?	5	Hot