CLASS : XI **PHYSICS ASSIGNMENT NO. III** **UNIT : III, CHAP : LAWS OF MOTION**

1 Mark Question

Q1. Passengers in a bus fall back as it accelerates. Why?

Q2. Why do we use ball – bearings?

Q3. When will a moving body be in equilibrium?

Q4. Why wheels are made circular in automobiles?

Q5. If friction can provides necessary centripetal force, why should the road be banked?

Q6. Explain why: - A cricketer moves his hand backward while holding a catch.

Q7. Why do we say friction is independent of area of contact?

Q8. If a string of a rotating stone breaks, in which direction will the stone move?

Q9. What happens to coefficient of friction, when weight of body is doubled /

Q10. It is easier to catch a table tennis ball than a cricket ball even when both are moving with same velocity. Why?

Q11. It is easier to maintain the motion of a body than to start it. Why?

Q12. Why does a gun recoil ?

2 mark Questions :-

Q13. State Impulse – Momentum Theorem.

Q14. State the basic laws of friction.

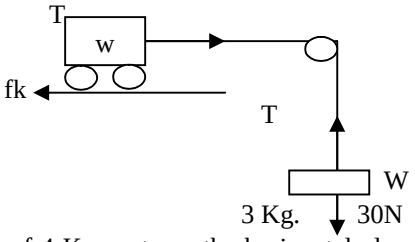
Q15. How do lubricants help in reducing friction?

Q16.What is the meaning of banking of curves? Why do we need it?

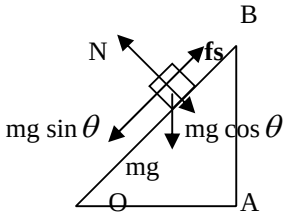
Q17. A soda water battle falling freely will the bubbles of gas rise in the water of he bottle.

Q18. Prove that total momentum of an isolated system of interacting particles is conserved.

Q19. What is the acceleration of the block and trolley system as shown, if the coefficient of kinetic friction between the trolley and the surface is .04? What is the tension in the string? (Take g = 10 ms^{-2}). Neglect the mass of the string)



Q20. A mass of 4 Kg. rests on the horizontal plane. The plane is gradually inclined until at an angle O = 15^0 with the horizontal, the mass just begin to slide. What is the coefficient of static friction between the block and the surface?



3 mark questions :-

Q21. Define impulse. A cricket ball of mass 150 gm moving with speed of 12 m/s is hit by a bat so that the ball is turned back with a velocity of 20 m/s. Calculate the impulse received by the ball.

Q22. Three blocks are connected as shown ona horizontal frictionless table and pulled to the right with a force of T_3 = 60 N.

If m_1 = 10 Kg; m_2 = 20 Kg and m3 = 30 Kg Prove that $\frac{T_1}{T_2} = \frac{1}{3}$