



Solution of Questions For Short Answer

Chapter 7 : Circular Motion

Ans. 1.

As we know $F=ma$ in case we don't add more petrol to engine then force applied by engine is same (constant).

So to increase acceleration we can reduce mass on the bike to accelerate it more.

Ans. 2.

The observer inside drum would feel centrifugal force and thus it will stick to the wall of drum while the observer will feel it self on rest and the water inside cloths would rinse from it and pass through small holes on the walls of drum due to centrifugal force.

and as seen by observer who is washing the cloths , cloths are rotating at high speed while sticking to the sides of drum.

Ans. 3.

The frictional force between coin and record would not let the coin slip away from the record as the record is at low revolution speed thus frictional force is grater than centrifugal force.

Ans. 4.

The centripetal wings of bird w.r.t to air and thus the bird turns toward left.

Ans. 5.

No we do not need to express all the angles in radian we can take limit over very small angle and calculate it over the radian

Ans. 6.

As you move your hands in circular motion the water due to centrifugal force drags away from your hand as you shake your hands vigorously the frictional force between your hand and water becomes comparably low.

Ans. 7.

Outer wall will exert nonzero normal contact force on the block so to push it towards inside continuously at any instant so as to maintain its circular motion.



Ans. 8.

a) Gravitational attraction is equal to centripetal force. as both forces are different forces so they cannot be same. but these forces can be equal.

in case Gravitational attraction would more than centripetal force earth would move closer to sun.

in case Gravitational attraction is lesser than Centripetal force then earth would move away from sun.

Ans. 9.

Driver can go for both options.

But to avoid from colliding car from wide wall the car needs to take a u-turn.

So we may prefer applying brakes than turning car around.

Ans. 10.

When the mass is at rest the tension on the string is lesser.

but when is oscillates and is at its extreme position the string needs to support the mass and preventing it from going away thus the tension is much greater than rest motion.