



3. Match the following

Column A	Column B
(a) Circular motion	(i) a running fan
(b) Periodic motion	(ii) a car moving in a market
(c) Vibratory motion	(iii) revolution of earth around the sun
(d) Rotatory motion	(iv) motion of wire of a guitar
(e) Non uniform motion	(v) motion of pendulum of a clock

Ans.

Column A	Column B
(a) Circular motion	(iii) revolution of earth around the sun
(b) Periodic motion	(v) motion of pendulum of a clock
(c) Vibratory motion	(iv) motion of wire of a guitar
(d) Rotatory motion	(i) a running fan
(e) Non uniform motion	(ii) a car moving in a market

4. Select the correct alternative

(a) A book lying on a table is an example of

1. **a body at rest**
2. a body in motion
3. a body neither at rest nor in motion
4. none of these

(b) The motion of a pendulum is

1. rotatory
2. **oscillatory**
3. curvilinear
4. rectilinear

(c) A car moving on a straight road is an example of

1. rotatory motion
2. **rectilinear motion**
3. oscillatory motion
4. periodic motion

(d) A ball falls down vertically. Its motion is

1. periodic
2. **linear**
3. circular
4. vibratory

(e) If a body covers equal distance in equal interval of time, the motion is said to be

1. **uniform**
2. non-uniform
3. oscillatory
4. rotatory

(f) A boy goes from his house to school by bus at a speed of 20 km h⁻¹ and returns back through the same route at a speed of 30 km h⁻¹. The average speed of his journey is

1. **24kmh⁻¹**
2. 25 km h⁻¹
3. 30 km h⁻¹
4. 20 km h⁻¹

(g) The earth attracts a body of mass 1 kg with a force of 10 N. The mass of a boy is 50 kg. His weight will be

1. 50 kg
2. **500 N**
3. 50 N
4. 5 N

Question 15.

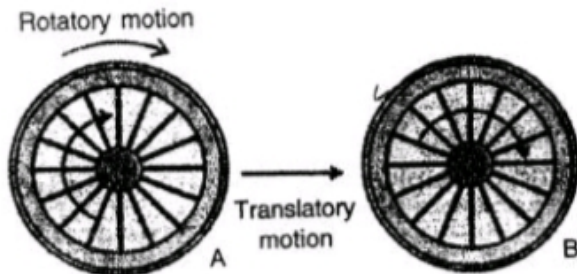
Give two examples to illustrate that a body can have two or more types of motion simultaneously.

Answer:

Sometime a body can have more than one type of motion. Such a motion is called the mixed motion.

Example :

(i) The wheels of a moving train have both the translatory as well as the rotatory motions as it moves from position A to position B while rotating.



(ii) The earth rotates about its axis (rotatory motion) and at the same time it revolves around the sun in a curved path (curvilinear or circular motion) in a fixed time interval (periodic motion).

Question 16.

State the types of motion of the following :

- (a) The needle of a sewing machine
- (b) The wheel of a bicycle
- (c) The drill machine
- (d) The carpenter's saw

Answer:

- (a) Periodic motion
- (b) Rotatory motion
- (c) Mixed = Translatory and Rotatory motion
- (d) Mixed = Translatory and Oscillatory motion

Question 17.

Distinguish between uniform and non-uniform motions, giving an example of each.

Answer:

Uniform motion	Variable motion or Non-uniform motion
<p>1. When a body covers equal distances in a straight line, in equal intervals of time, however small these time intervals may be.</p> <p>2. In this case direction of motion remains the same.</p> <p>3. Example : A body moving with a constant speed in a straight line has uniform motion.</p>	<p>1. When a body covers unequal distances in equal intervals of time in a straight line.</p> <p>2. In this case direction of motion changes.</p> <p>3. Example : Circular motion is example of non-uniform motion.</p>

Question 18.

How do you determine the average speed of a body in non-uniform motion ?

Answer:

In a non-uniform motion, the average speed of a body is calculated by dividing the total distance travelled by the body, with the total time of its journey. Thus,

Average speed = Total distance travelled by the body / Total time of journey

Question 19.

Define the term weight and state its S.I. unit.

Answer:

The weight of a body is the force with which earth attracts the body i.e. the weight of a body is the force of gravity on it. The weight of a body is not constant, but it changes from place to place. It is represented by the symbol W. The S.I. unit of weight is newton (N).

Question 20.

How are the units of weight, kgf and newton related ?

Answer:

1 kg F = 10 N

Question 21.

State three differences between mass and weight.

Answer:**Mass**

It is the quantity of matter contained in a body.

Its S.I. unit is kilogram (kg)

It is constant for a body and it does not change by changing the place of the body.

It is measured by a beam balance.

Weight

It is the force with which the earth attracts the body.

Its S.I. unit is newton (N) and other unit is kilogram-force (kgf) where 1 kgf = 10N (nearly).

It is not constant for a body, but it changes from place to place.

It is measured by a spring balance.

Question 22.

Which quantity : mass or weight, does not change by change of place ?

Answer:

The mass of a body is constant and it does not change by changing the position of the body.

Question 23.

State which of the quantities, mass or weight is always directed vertically downwards.

Answer:

Mass is the quantity of matter contained in a body. Weight is the force with which the earth attracts the body. Weight is always directed vertically downwards.