

BRAIN INTERNATIONAL SCHOOL

Physics Revision Assignment

Class IX

Session:2018-19

Ch:8-Motion

1. Name the two quantities ,the graph between which gives : (i) distance travelled by an object
(ii) speed of an object
2. Differentiate between the following : (a) Speed and Velocity (b) Distance and Displacement
3. Derive the first and second equation of motion graphically.
4. Out of the two quantities ,speed and velocity which is constant in a uniform circular motion ?
5. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 3.0ms^{-2} for 8.0 s. How far does the boat travel during this time ?
6. A car has an uniform acceleration of 4m/s^2 .What will be the distance travelled by it in 10s after its start ?
7. After applying brakes to a car the driver decreases the speed of the car from 80km/h to 60km/h in 5s.Find the acceleration of the car .

Ch:9-Force and laws of Motion

1. On which factors does the inertia of a body depend ? How is force related to inertia ?
2. State the law of conservation of momentum . Give two examples depicting the conservation of momentum .
3. Action and reaction ,though equal and opposite, do not balance each other. Why ?
4. A window is shattered when a flying pebble hits it .Why ?
5. Derive an expression relating force, mass and acceleration. How is acceleration affected by mass and force ?
6. How long should a force of 30N exerted on a body of mass 5kg to change its velocity from 10m/s to 22m/s ?
7. A 5kg rifle fires a 10g bullet at a velocity of 250m/s .What would be the recoil velocity of the rifle ?
8. Why is it advised to tie any luggage kept on the roof of a bus with a rope ?
9. Explain ,how Newton's first law is derived from Newton's second law.
10. Derive the law of conservation of momentum.

Ch:10-Gravitation

1. Give reason for the following: (i) Caterpillar tracks are provided to battle tanks.
(ii) Cutting and piercing tools are sharp.
2. Derive an expression for acceleration due to gravity (g).
3. How are the equations of motion represented for objects under the influence of gravitational force of earth ?
4. State Newton's Universal law of gravitation . Derive it mathematically .
5. State Archimede's principle . How will you verify it experimentally ?
6. Why will a sheet of paper fall slower than one that is crumpled into a ball ?
7. What is the acceleration of free fall ?
8. Why does a block of plastic released under water come up to the surface of water ?
9. What is relative density ? The relative density of a substance is greater than one, what does it Signify ?
10. Which will exert more pressure 100kg mass on 10m^2 or 50kg mass on 4m^2 ? Give reason.

Ch:11-Work and Energy

1. What are the two conditions required for the work to be done ?
2. A mass of 10kg is dropped from a height of 50cm .Find its : (i) Kinetic energy (ii) Velocity.
3. Energy remains constant in the case of freely falling bodies . Prove this statement .
4. A boy pulls a bucket of water of mass 5kg from a well which is 10m deep in 10s.Calculate the power used by him.
5. How do you differentiate between energy and power ?
6. Prove that the energy remains constant in case of a freely falling body.
7. A freely falling object eventually stops on reaching the ground .What happens to its kinetic energy ?
8. A truck weighing 5000kg f and a cart weighing 500kgf are moving with the same speed . Compare their kinetic energies .
9. A body of mass 40kg runs up a flight of 50steps , each of 10cm high, in 5s. Find the power developed by the boy.
10. Calculate the units of energy consumed by 100W electric bulb in 5h.

Ch:12-Sound

1. Which wave property determines (a) loudness (b) pitch.
2. What are wavelength, frequency, time period and amplitude of a sound wave ?
3. Why are sound waves called mechanical waves ?
4. Explain how sound is produced by your school bell ?
5. Explain the working and application of sonar .
6. A sound wave travels at a speed of 399m/s. If its wavelength is 1.5cm ,what is the frequency of the wave ? Will it be audible ?
7. If the frequency of a tuning fork is 400Hz and the speed of the sound in air is 340m/s. Find how far sound travels when tuning fork makes 16 vibrations .
8. State any two characteristics of a wave motion .
9. An echo is returned in 6 seconds .What is the distance of reflecting surface from source ?
10. A source of sound is producing 1500sound waves in 3sec.If the distance covered by a compression and an adjacent rarefaction be 68cm,find (a) frequency (b) wavelength (c) velocity of sound wave .