Kanna Makhan Public School

Class – 9th (20019-20)

Subject – Chemistry

Unit -2

FORCE AND LAWS OF MOTION

Multiple Choice Questions:

1. The rate of change in momentum is

a) Energy b) force c) acceleration d) Impulse

2. When an object gets an acceleration

a) It always fall towards earth

b) Its velocity is always increased

c) Its speed is always increased

d) A force acts on it

3. A scooter generally slips on an oily road because

a) Friction between tyres and road increase

b) friction between tyres and road decrease

c) Inertia between tyres and road increase

d) All of the above

4. Rocket acts on the principle of conservation of

a) energy b) Mass c) velocity d) Momentum

5. The unit of momentum is

a) kgm/s b) kgm/s c) kgm/s^2 d) kg/m^2s

Very Short Question:

1. Define 1 Newton Force
2. Which law of motion gives the measure of force?
3. Body A is heavier than body B .Which has more Inertia?
4. State Galileo's law of Inertia.
5. Define momentum of a body.

Short Question:

1. A passenger is sitting loosely in a bus falls backward when the bus suddenly start moving, why ?
2. Explain how Newton's first law of motion is a special case of second law.
3. Why are seat belts provided in automobile and aeroplanes.

Long Question:

1. Derive the mathematical relation of Newton's second law of motion.
2. Derive the mathematical formula of conservation of momentum.

3. A hockey ball of mass 200g travelling at 10 m/s is struck by a hockey stick so as to return it along its original path with a velocity at 5m/s . Calculate the change of momentum occurred in the motion of the hockey ball by the force applied by the hockey stick.

Unit -3
Gravitation

Multiple Choice Questions:

1. The value of acceleration due to gravity is
   a) Same at all places of earth
   b) Same at all planets and satellites
   c) different at different places
   d) none of the above
2. S.I unit of gravitational constant is
   a) Nm^2/kg b) Nm^2/kg^2 c) Nm/kg d) $/kg^2$
3. If the mass of one man is 60 kg on earth his mass on moon will be
   a) 60 kg b) 10 kg c) 360 kg d) None of the above
4. The force acting on a object perpendicular to the surface is called
   a) Thrust b) pressure c) weight d) density
5. The thrust per unit area is called
   a) Thrust b) pressure c) weight d) density

Very short Question:

1. Define acceleration due to gravity.
2. What is the difference between gravitation and gravity.
3. Define weight of a body.
4. What do you understand by buoyancy?
5. What is S.I unit of relative density?

Short question:

1. State the universal law of gravitation.
2. Define the terms thrust, pressure and relative density. State their S.I units
3. What is the difference between G and g ?

Long Question:

1. A ball thrown up vertically return to the thrown after 6s. Find a) the velocity with which it was thrown up.
   b) The maximum height it reaches
   c) Its position after 4 sec
2. State Archimedes' principle . Write two application of this principle.

3. A stone is released from top of a tower of height 19.6 m. calculate its final velocity just before touching the ground.

Unit -4

Work and Energy

Multiple Choice Questions:

1. The another name of NM is
   a) Hertz b) erg c) coulomb d) joule
2. 1 Kwh is equal to

a) 6.3×10^6 J b) 3.6×10^6 J c) 3.6×10^3 J d) 6.3×10^3 J

3. If velocity of an object is doubled , its kinetic energy will be increased by
   a) three times b) four times c) eight times d) kinetic energy does not depend on velocity

4. When an object falls freely towards earth , then its total energy

a) first increase then decrease b) remains constant c) increase d) decrease

5. An object is falling from a height h, when it has fallen a height h/2 it will possess

a) Only kinetic energy

b) Only potential energy

c) Half kinetic energy and half potential energy

d) More potential energy and less kinetic energy

Very short Question:

1. Define joule
2. State the energy transformation in an electric fan.
3. Name the instrument which transforms electrical energy into mechanical energy.
4. Name the commercial unit of energy.
5. Does an object in motion have ability to do work ?

Short Questions:

1. State the law of conservation of energy.
2. Distinguish between work, energy and power. State the S.I units for each of these quantities.
3. A lamp consumes 1000 J of electrical energy in 10 sec what is it power.
4. Find the energy in Kwh consumed in 10 hrs by four devices of power 500 weach.

Long Questions:

1. What is Kinetic energy of an object and write an expression for the kinetic energy of an object .

2. Power supplied to change the velocity of a car from 10 m/s to 5 m/s in 4 s is 100 w . Find work.
3. Derive an expression when an object of mass 'm' is lifted to a height 'h' from ground.

Unit-5

SOUND

Multiple choice question:

1. Propagation of Waves transfers
   a) Matter b) Matter and Energy c) Energy d) None of the above
2. The number of oscillations completed in one second is called
   a) wavelength b) frequency c) time-Period d) velocity
3. The distance travelled by wave in one second is called
   a) wavelength b) frequency c) time- period d) velocity
4. The distance between two crests and troughs is called
   a) Frequency b) amplitude c) wavelength d) none of the above
5. Man can hear the sound of frequencies
   a) Less than 20 hz b) more than 2000 hz c) between 20 hz to 20,000 hz d) all of the above

Very Short Questions:

1. State two uses of ultrasound for medical purpose.
2. What is transverse wave ?
3. Define the terms crests and troughs of a wave?
4. Why a sound cannot be heard on the moon ?

Short Questions:

1. What are ultrasonic? Give two applications of ultrasonic waves
2. Write the characteristics of sound?
3. State the laws of reflection of sound .
4. Define (i) Echo (ii) Reverberation

Long Question:

1. Write the full form of SONAR. How will you determine the depth of a sea using echo-ranging.
2. Explain the structure and working of human ear with the help of diagram .

Describe some practical applications from daily life based on multiple reflection of sound .

UNIT-1
MOTION

Muliple Choice Question:

1. Which is not a vector quantity?

a) acceleration b) velocity c) density d) displacement

2. The rate of change in displacement is called

a) acceleration b) velocity c) speed d) none of the above

3.An object is moving on circular path with constant speed it has

a) Uniform motion

b) Accelerated motion

c) Motion with uniform retardation

d) None of the above

4. A car moving at a speed of 72 km/h .its speed is

a) 72m/s b) 10 m/s c) 15m/s d) 20 m/s

5. The slope of velocity –time graph shows

a) Speed b) acceleration c) displacement d) speed

Very Short Questions:

1. Define velocity.
2. If the displacement of a body is zero it necessary that the distance covered by it also zero?
3. Can uniform linear motion be accelerated?
4. What is uniform acceleration?
5. What does the reading of the odometer of a vehicle indicate?

Short Questions:

1. Differentiate between distance and displacement?
2. What do you understand by uniform circular motion?
3. A racing car has a uniform acceleration on 4 m/s^{-2}. What distance will it cover in 10s after start?
4. An artificial satellite is moving in a circular orbit of radius 42250 km. calculate its speed takes 24 hours to revolve around the earth?

Long Questions:

1. With the help of graph derive the relation v = u + at.
2. An 0bject starting from rest travels 20 m in first 2 sec and 160m in next 4 sec . What will be the velocity after 7sec from start?
3. A train starts from rest and attains a speed of 54 km/h in 10 sec . Calculate (i) the acceleration and (ii) distance covered by the train?