Q:1 Riding a bicycle is a good example of which of the following Newton's Laws of Motion?

1. Newton's Second Law of Motion

2. Newton's First Law of Motion

3. Newton's Third Law of Motion

4. None of the above

Q:2 ____ is the motion of an object thrown into the air, subject to only the acceleration of gravity.

1. Projectile Motion

2. Oscillatory Motion

3. Rotary Motion

4. Linear Motion

Q:3 Which among the following laws of physics propose that an object at rest stays at rest and an object in motion stays in motion unless acted upon by an unbalanced force?

1. Newton’s First Law of Motion

2. Newton’s Second Law of Motion

3. Newton’s Third Law of Motion

4. Pascal’s Law

Q:4 Identify the type of wave in which the movement of the particles is parallel to the motion of the energy.

1. Longitudinal waves

2. Transverse waves

3. Surface waves

4. None of these

Q:5 The angular displacement of an object in rotational motion is described using___.

1. Radian

2. Second

3. Meter

4. cm

Q:6 The component of force acting on an object to keep it moving in curvilinear motion along with a circular path, directed toward the axis of rotation is called _____.

1. Applied Force

2. Spring Force

3. Centrifugal Force

4. Centripetal Force

Q:7 In Kepler's Laws of Planetary Motion, which law is also known as ' The law of equal areas'?

1. First Law

2. Second Law

3. Third Law

4. Fourth Law

Q:8 Motion of a piston in an automobile engine is an example of which type of motion?

1. Reciprocating Motions

2. Rotary Motion

3. Linear Motion

4. Simple Harmonic motion

Q:9 The speed of the Brownian motion is inversely proportional to

1. angle of the particles

2. speed of the motion

3. viscosity of the fluid

4. mass of the particles

Q:10 What is used to study objects in rapid periodic motion?

1. Submillimeter telescope

2. Angioscope

3. Galileoscopes

4. Stroboscope

Answer Key

1. (1)	**2.** (1)	**3.** (1)	**4.** (1)	**5.** (1)
6. (4)	**7.** (2)	**8.** (4)	**9.** (3)	**10.** (4)

Answers and Solutions

Q:1 The correct answer is **Option 1** i.e. **Newton's Second Law of Motion**

Riding a bicycle is a good example of Newton's Second Law of Motion.

Newton's first law states that every object will remain at rest or in uniform motion until and unless an exteal force is applied to it.

Newton's second law states that the rate of change of momentum of a body is directly proportional to the force applied to it.

Newton's third law states that for every action there is an equal and opposite reaction.

Q:2 The correct answer is **Option 1** i.e. **Projectile motion**

Projectile Motion is the motion of an object thrown or projected into the air, subject to only the acceleration of gravity.

In **Linear Motion**, the particles move from one point to another in either a straight line or a curved path.

Rotary Motion is the motion that occurs when a body rotates on its own axis.

Oscillatory Motion is the motion of a body about its mean position.

Q:3 The correct answer is **Option 1** i.e. **Newton's First Law of Motion**

First Law of Motion: It states that an object at rest remains at rest and an object in motion remains in motion with the same speed and in the same direction unless acted upon by an unbalanced force.

Second Law of Motion: It states that the acceleration of an object is dependent upon two variables - the net force acting upon the object and the mass of the object.

F=ma

Force= mass x acceleration

Third Law of Motion: It states that for every action, there is an equal and opposite reaction.

Pascal's Law: It states that pressure change at any point in a confined incompressible fluid is transmitted throughout the fluid such that the same change occurs everywhere.

Q:4 The correct answer is **option 1** i.e. **Longitudinal waves**

The orientation of particle motion relative to the direction of energy propagation is one 0f the ways waves are characterized. There are three categories:

Longitudinal waves - **Movement of the particles is parallel to the motion of the energy.** Sound waves moving through the air is an example of this type of wave.

Transverse waves - Movement of the particles is at right angles (perpendicular) to the motion of the energy. Movement of a wave through a solid object like a stretched rope or a trampoline is an example of this type of wave.

Surface waves - particles travel in a circular motion. These waves occur at interfaces. Examples include waves in the ocean and ripples in a cup of water.

Q:5 The correct answer is **option 1** i.e. **Radian.**

Rotational motion refers to anything spinning or moving in a circular path, in a fixed orbit. It is also called angular motion or circular motion.

To describe the angular displacement of an object in rotational motion the natural unit radians () is used since rotational motion involves studying circular paths.

One revolution (360 degrees) equals 2 radiansu200b.

Q:6 The correct answer is **option 4** i.e. **Centripetal Force.**

The component of force acting on an object to keep it moving in curvilinear motion along a circular path, directed toward the axis of rotation is called Centripetal Force.

Centripetal Force defined by Isaac Newton in 1684.

Centripetal Force is a real force that keeps the object from flying out.

Formula of Centripetal Force (F) = mac = mv^2/r.

Q:7 The correct answer is **Option 2** i.e. **Second Law**

Kepler's second law is also known as the 'The law of equal areas'.

According to this law, a planet no matter where it is in its orbit, covers the same area of space in the same amount of time.

Q:8 The correct answer is **Option 4** i.e. **Simple harmonic motion**

Motion of a piston in an automobile engine is an example of Simple harmonic motion.

Simple harmonic motion are oscillatory(motion that moves back and forth) and periodic (motion that repeats itself after an interval of time) types of motion.

In Simple harmonic motion, the restoring force of a moving object is directly proportional to the displacement of the object from its equilibrium position.

Q:9 The correct answer is **Option 3** i.e **viscosity of the fluid**

Brownian motion refers to random movements displayed by microscopic particles suspended in fluids (liquids or gases) resulting from the impact of molecules of the surrounding medium.

The speed of the Brownian motion is inversely proportional to the viscosity of the fluid. The lower the viscosity of the fluid, the faster the Brownian movement.

Q:10 The correct answer is **Option 4** i.e **Stroboscope**

A stroboscope is an instrument that uses an intense, high-speed light source for visual analysis of objects in periodic motion and for high-speed photography.

This device is used for viewing rapidly moving objects by creating an optical illusion that appears to slow down or stop motion.