Question: What is the dimensional formula of force?

Options:

 a) $MLT^{-2}$

 b) $ML^2T^{-2}$

 c) $MLT^{-1}$

 d) $ML^{-1}T^{-2}$

Answer: a


Question: A body is dropped from a height h. What will be its velocity just before hitting the ground?

Options:

 a) $\sqrt{2gh}$

 b) gh

 c) 2gh

 d) h/2g

Answer: a


Question: A ball is thrown vertically upwards with velocity u. The time to reach the highest point is:

Options:

 a) u/g

 b) u/2g

 c) 2u/g

 d) g/u

Answer: a


Question: Which of the following is an example of a non-conservative force?

Options:

 a) Gravitational force

 b) Electrostatic force

 c) Magnetic force

 d) Frictional force

Answer: d

Question: What is the SI unit of power?

Options:

 a) Joule

 b) Watt

 c) Newton

 d) Pascal

Answer: b


Question: Which Newton's law explains the concept of inertia?

Options:

 a) First Law

 b) Second Law

 c) Third Law

 d) Law of Universal Gravitation

Answer: a


Question: The escape velocity from Earth's surface is approximately:

Options:

 a) 11.2 km/s

 b) 9.8 km/s

 c) 7.5 km/s

 d) 15 km/s

Answer: a


Question: The force required to keep an object moving in a circular path is called:

Options:

 a) Gravitational force

 b) Centripetal force

 c) Frictional force

 d) Magnetic force

Answer: b

Question: The moment of inertia of a thin rod of length L about an axis passing through its center and perpendicular to its length is:

Options:

a) $(1/3)ML^2$

b) $(1/2)ML^2$

c) $(1/12)ML^2$

d) $(2/5)ML^2$

Answer: c

Question: The work done by a force is zero when:

Options:

a) The force is perpendicular to displacement

b) The force is parallel to displacement

c) The force is anti-parallel to displacement

d) The force is at 45° to displacement

Answer: a

Question: Which of the following waves requires a medium to propagate?

Options:

a) Sound waves

b) X-rays

c) Gamma rays

d) Light waves

Answer: a

Question: According to Bohr's model, the angular momentum of an electron in the nth orbit is given by:

Options:

a) $nh/2\pi$

b) $n^2h/2\pi$

c) nh/π

d) h/n

Answer: a


Question: The potential energy of a spring is given by:

Options:

a) $(1/2)kx^2$

b) $kx^2$

c) $2kx^2$

d) $(1/4)kx^2$

Answer: a


Question: The first law of thermodynamics is a statement of:

Options:

a) Conservation of energy

b) Conservation of mass

c) Conservation of momentum

d) Conservation of charge

Answer: a


Question: Which of the following materials has the highest resistivity?

Options:

a) Silver

b) Copper

c) Glass

d) Aluminum

Answer: c