

SUCCESS KEY TEST SERIES

Work Sheet

Std: 11th Science

Subject: Physics

Time: 1Hrs

Date :

4. Laws of Motions

Max Marks: 35

Q.1 Select and write the most appropriate answers from given alternatives:

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- 1) Identify the correct statement.
 - (a) There is only one branch of mechanics.
 - (b) There are two branches of mechanics.
 - (c) There are three branches of mechanics.
 - (d) There are four branches of mechanics.
- 2) For a conservative forces, work done is _____ of the actual path.
 - (a) Directly proportional
 - (b) Independent
 - (c) Dependent
 - (d) None of these
- 3) Which of the following is correct for pseudo forces?
 - (a) Pseudo forces are measurable.
 - (b) Pseudo forces are not accountable in inertial frame.
 - (c) Pseudo forces are not among the four fundamental forces.
 - (d) All of these
- 4) The work done by or against conservative forces is equal to the change in
 - (a) Chemical energy
 - (b) Potential energy
 - (c) Kinetic energy
 - (d) All of these.
- 5) Rate of change of liner momentum of a rigid body is directly proportional to the
 - (a) Mass of the body
 - (b) Volume of the body
 - (c) Applied force on the body
 - (d) Area of the body

Q.2 Answer the following very short questions:

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- 1) What are weak nuclear forces?
- 2) What are strong nuclear forces?
- 3) What are gravitational forces?
- 4) What is the coefficient of restitution in elastic collisions?
- 5) What is the value of coefficient of restitution for perfectly inelastic collisions?

Q.3 Answer the following:

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- 1) Distinguish between Conservative and non-conservative forces.
- 2) Why do cricketers wear helmet and pads while playing?
- 3) Variation of a force in a certain region is given by $F = 6x^2 - 4x - 8$. It displaces an object from $x = 1$ m to $x = 2$ m in this region. Calculate the amount of work done.
- 4) Distinguish between elastic and inelastic collision.
- 5) Why do we need to know the centre of mass of an object? For which objects, its position may differ from that of the centre of gravity?

Q.4 Answer the following:

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- 1) Show that work done on a body by a conservative force is equal to the change in its kinetic energy.
- 2) Are there any situations in which we cannot apply Newton's laws of motion? Is there any alternative for it?
- 3) Explain the statement 'Rest and motion are relative concepts.'
- 4) From the terrace of a building of height H , you dropped a ball of mass m . It reached the ground with speed v . Is the relation $mgH = \frac{1}{2} mv^2$ applicable exactly? If not, how can you account for the difference? Will the ball bounce to the same height from where it was dropped?
- 5) Mention Newton's second law of motion and its importance.

----- All the Best -----