

**DELHI PUBLIC SCHOOL, JAMMU**  
**SESSION (2019-20)**  
**Assignment Half-yearly Examination (September)**  
**(Science)**

**Subject: Physics**

**Class: 9<sup>th</sup>**

**Chapter Covered:**

- 1. Motion**
- 2. Force and Laws of Motion**
- 3. Work, Energy & Power**

1. Slope in distance time graph gives the measurement of;  
(a) Velocity (b) speed (c) average velocity (d) acceleration
2. Rocket propulsion is based on Newton's;  
(a) 1<sup>st</sup> law (b) 2<sup>nd</sup> law (c) 3<sup>rd</sup> law (d) none of these
3. Define 1 joule of work.
4. What is effect on inertia when mass increases?
5. Why it is difficult to balance our body when we accidentally step on a peel of banana?
6. **Assertion:** A body has positive acceleration.  
**Reason:** It is due increase in velocity.  
(a) A (b) B (c) C (d) D
7. Graphically derive an expression;  $2aS = v^2 - u^2$
8. Derive the relation between Kinetic energy and momentum.  
(b) A body of mass 8kg has a kinetic energy of 200J. Find the momentum possessed by a body.
9. A 150kg car engine develops 500 W for each kg. What force does it exert in moving the car at a speed of 7.5m/s?

Or

A body of mass 5kg is raised to a height of 10m above the ground. If the object falls down, then

- (a) What is the kinetic and potential energy when it has fallen through 4m? (Take  $g=9.8\text{ms}^{-2}$ )
- (b) What is the velocity of the object when it just touches the ground?
10. (a) Define kinetic energy and potential energy.  
(b) Two boys say A and B each weigh 40kg climb upto height of 10m. The boy A takes 10 seconds and boy B takes 20 seconds to climb;  
(I) State whether the work performed by both the boys is equal or different.  
(II) Out of these two boys, who have more power? Compare their powers.

Or

- (a) State law of conservation of mechanical energy.
- (b) Can any object have momentum even if its mechanical energy is zero? Explain.
- (c) A body of mass 2kg has energy of 100J at a height of 10m. What is its kinetic and potential energy at the half of its height?
11. (a) Define law of conservation of linear momentum.  
(b) An object of mass 20kg is accelerated uniformly from a velocity of 18km/h to 54km/h in 20s.  
(I) The initial momentum of the body.  
(II) Final momentum of the body.  
(III) Force acting on the body.



**(Biology)**

**Chapter Covered:**

1. **The fundamental unit of life.**
2. **Tissues**
3. **Improvement in food resources.**

1. Cell wall of plants is made up of:  
a) Cellulose b) Bacteria c) Fungi d) Amoeba
2. Nerve Cell does not contain:  
a) Axon b) nerve endings c) tendons d) dendrites
3. Name the two organelles in a plant cell that contain their own genetic material and ribosomes.
4. What is the role of Ribosomes?
5. What is vermicompost?
6. What do you mean by animal husbandry?
7. In the following question, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:  
a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
c) If assertion is true, but Reason is False.+  
d) If Assertion is false, but Reason is true.

**Assertion:** Lysosomes are often called as Suicidal bags of a cell.

**Reason:** Lysosomes contain hydrolytic enzymes capable of digesting cellular Waste.

8. In the following question, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:  
a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
c) If Assertion is true, but Reason is False.  
d) If Assertion is false, but Reason is true.

**Assertion:** Pesticides are poisonous for living organisms and cause environmental pollution.

**Reason:** Organic farming on the other hand is environmental – friendly and does not rely much on agriculture chemicals.

9. Draw a neat diagram of plant cell and label any three parts which differentiate it from animal cell.
10. Suggest some preventive measures for the diseases of poultry birds.
11. Discuss the role of hybridisation in crop improvement.
12. List the characteristics of cork. How is it formed?

OR

Distinguish between ligament and tendon.

13. What is connective tissue? List its types. Give the characteristics of bone.
14. a) How are fish obtained?  
b) What are the advantages of composite fish culture?

OR

Describe the aims and objectives of plant breeding