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**SUBJECT:- PHYSICS**

**CLASS:- IXTH**

**DATE:-25/02/XXI**

**SUBJECT TEACHER:- MR. NEEL NIRANJAN**

**CHAPTER 4. (WORK, ENERGY AND POWER REVISION)(BASED ON NCERT PATTERN)**

**Q1. Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the term 'work'.**

- (a) Suma is swimming in a pond.**
- (b) A donkey is carrying a load on its back.**
- (c) A wind mill is lifting water from a well.**
- (d) A green plant is carrying out photosynthesis.**
- (e) An engine is pulling a train.**
- (f) Food grains are getting dried in the sun.**

**Ans:-** Work is done whenever the given conditions are satisfied:

- (i) A force acts on a body.
  - (ii) There is a displacement of the body.
- (a) While swimming, Suma applies a force to push the water backwards. Therefore, Suma swims in the forward direction caused by the forward reaction of water. Here, the force causes a displacement. Hence, work is done by Seema while swimming.
- (b) While carrying a load, the donkey has to apply a force in the upward direction. But, displacement of the load is in the forward direction. Since, displacement is perpendicular to force, the work done is zero.
- (c) A wind mill works against the gravitational force to lift water. Hence, work is done by the wind mill in lifting water from the well.
- (d) In this case, there is no displacement of the leaves of the plant. Therefore, the work done is zero.
- (e) An engine applies force to pull the train. This allows the train to move in the direction of force. Therefore, there is a displacement in the train in the same direction. Hence, work is done by the engine on the train.
- (f) Food grains do not move in the presence of solar energy. Hence, the work done is zero during the process of food grains getting dried in the Sun.