

HW

1 Only when there is motion in a body due to a force acting on it, work is said to be done.

2 A force performs work when it is not perpendicular with the path of motion of the object.

3 No work is done by a force when

It is perpendicular to the direction of motion of the object

Force is applied but the object does not move.

4 Only when 'A boy is climbing up the stairs' work is being done

5 No the coolie does not perform work ^{against the force of gravity} because the weight of the ~~boy~~ luggage ~~and~~ + his own weight applies a force which is perpendicular to the road on which he is moving.

6 The work done by the moon while revolving the Earth will be 0 as the gravitational force of the Earth is perpendicular to the direction of motion of the Earth.

7

$$W = F \times D$$

$W =$ Work
 $F =$ Force applied
 $D =$ Displacement

8 SI unit of work is $1 \text{ Nm} \rightarrow$ If ∇ 1 N of force displaces an object to 1 m, work is 1 Nm or 1 Joule

9 The work done on a body depends on-

- The ~~force~~ magnitude of the force applied
- The distance displaced

10 Energy is the capability of a body to do work.

11 The SI unit of energy is Joule

12 1 Joule of energy means the object can move only one metre