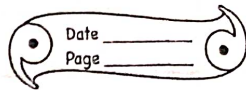


17/08/24
HW

HOME ASSIGNMENT



① Define work.

Ans → ^{The} Work done by a force on a body is equal to the product of the force applied and the distance moved by the body in the direction of force.

② When does a force perform work?

Ans → When a force ~~per~~ brings displacement in the body in the direction of force, then, the force performs work.

③ In which of the following cases is work being done.

(a) A boy pushes pushing a heavy rock. No work is being done.

(b) A boy climbing up the stairs. A work is being done.

(c) A coolie standing with a load on his head. No work is being done.

(d) A girl moving on the road. Work is being done.

(5) A coolie is moving on a road with a luggage on his head. Does he perform work against the force of gravity? Give reason for your answer.

Ans → He performs no work against the force of gravity as distance moved by the coolie is normal to his weight. So the work done by him against the force of gravity is zero.

(6) The moon is revolving around the earth in a circular path. How much work is done by the moon?

Ans → No work is done by the moon. The force of attraction on moon by the earth is always normal

to the direction of motion of moon, so no work is done by the gravitational force of earth on the moon.

⑦ Write the expression for work done by a force.

Ans → The expression for work done by a force = Force × Displacement
 $\Rightarrow F \times s$
 $\Rightarrow Fs$

⑧ State the S.I. unit of work and define it.

Ans → S.I. unit of work is -
 * newton metre (Nm) or
 * Joule (J).

⇒ One joule of work is said to be done if one newton force when acting on a body moves it by 1 metre in the direction of force.

(9) State two factors on which the work done on a body depends.

Ans Two factors on which the work done on a body depends are -

(1) A force must act on the body.

(2) The force must produce change in position i.e., motion of the body or change in size or shape of the body.

(10) Define the term energy.

Ans Energy is the capacity of doing work.

(11) State the S.I. unit of energy.

Ans S.I. unit of energy is joule (J)

(12) Define 1 joule of energy, a body is said to

possess an energy of one joule if it can do one joule work is done on it, or if one joule work is done on it.