HW 15/8/2021

Home Assignment

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1) Define work.

Ans- Work: When a force is applied on a body and there is displacement of the body, work is said to be done.

2) When does a force perform work?

Ans- Work is said to be done only when the force applied on a body and there is displacement of the body which makes the body move.

3) State two conditions when no work is done by a force.

Ans- Two conditions are:

* There should be no displacement that is $S=0$.
* The displacement is normal to the direction of Force that is $=0=90^\circ$

4) In which of the following cases is work being done:

a) A boy pushing a heavy rock
b) A boy climbing up the stairs.
c) A coolie standing with a box on his

head

d) A girl moving on the road.

Ans- The option 'b' and 'd' are the conditions where work is 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- A coolie carrying a luggage on his head moving on ground does not work against the force of gravity as displacement is normal to the direction of force of gravity.

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, since displacement is normal to the direction of force on the body. The force is Centripetal.

7) Write the expression for work done by a force.

Ans- Work done by applying force (F) is the product of force applied on the body and distance moved by the body in the direction of force.

Work done = Force x distance moved in the direction of force.

$W = F \times D$

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

Ans- S.I unit of work is Joule

Joule :-

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- The two factors are the following:

* Magnitude of force applied. (F)
* Distance moved by the body in the

direction of force (d) or (s)

10) Define the term energy.
Ans- The capacity of doing work is called Energy.

11) State the S.I unit of energy.
Ans- The S.I unit of energy is Joule (J)

12) Define 1 joule of energy.
Ans- A body is said to possess an energy of one joule if it can do one joule work or if one joule work is done on it.

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