# Work, Power, Energy Questions For Class 9

**Question.1 Does work done depend upon the velocity of the body. [SAII-2014]**
**Answer.** No.

**Question.2 State the law of conservation of energy. [SAII-2014]**
**Answer.** It states that energy can neither be created nor destroyed. It can only

**Question.3 In a tug-of-war one team gives way to the other. What work is being done and by whom ? [SAII-2014]**
**Answer.**
The winning team does work. The work is equal to the product of the resultant force and the displacement undergone by the losing team.

**Question.4 What will cause greater change in kinetic energy of a body? Changing its mass or changing its velocity ?**
**Answer.** Changing its velocity.

**Question.5 List two essential conditions for work to be done. [SAII-2010]**
**Answer.** (i) A force must act and (ii) There should be displacement in the body.

**Question.6 When is 1 joule of work said to be done ?**
**Answer.** When a force of 1 newton acting on a body displaces it in its own direction.

**Question.7 What is the SI unit of work done and power ?**
**Answer.** Joule and Watt.

**Question.8 What is power? What is its SI unit ?**
**Answer.** It is defined as the rate of doing work. Its unit is watt.

**Question.9 Find the energy in kWh consumed in 10 hours by a machine of power 500 W. [SAII-2011]**
**Answer.** W = P x t = 500 x 10 = 5000 Wh – 5 kWh.

**Question.10. When is work said to be done against the force of gravity ?**
**Answer.** When a body lifted the work is done against the force of gravity.

**Question.11 Write an expression for the work done in lifting a body of mass 'm' through a vertical height 'h'. [SAII-2012]**
**Answer.** Work done W = mgh, where g is acceleration due to gravity.

**Question.12 When a book is lifted from a table, against which force work is done ?**
**Answer.** Work is done against the force of gravity.

**Question.13 Will work be done by a man who pushes a wall ?**
**Answer.** No.


**Question.14 What is the work done when the force acting on the body and the displacement produced in the body are at right angles to each other ?**
**Answer.** Zero.


**Question.15 Is it possible that some force is acting on a body but still the work done is zero ?**
**Answer.** Yes, when force acts at an angle of 90° with the displacement.


**Question.16 What is the work done on a body moving in a circular path ?**
**Answer.** Zero, because force and displacement are perpendicular to each other.


**Question.17 A force of 7 N acts on an object. The displacement is, say 8 m, in the direction of the force. Let us take it that the force acts on the object through the displacement. What is the work done in this case ?**
**Answer.**
Given, displacement = 8 m,
Force = 7N
Now, Work done = Force x Displacement
= 7 x 8 = 56 J


**Question.18 When do we say that work is done ? ~**
**Answer.**
Work is said to be done when a force causes displacement of an object in the direction of applied force.


**Question.19 Write an expression for the work done when a force is acting on an object in the direction of its displacement.**
**Answer.**
Work done = Force x Displacement


**Question.20 A pair of bullocks exert a force of 140 N on a plough. The field being ploughed is 15 m long. How much work is done in ploughing the length of the field ?**
**Answer.**
Work done = Force x Displacement = 140 x 15 = 2100 J