Chapter 4: Energy

Worksheet 1

1. Write T for true and F for false statement.

(i) Work is said to be done when a force acting on an object changes the position of the object.

(ii) The SI unit of work is joule.

(iii) Heavier the object, lesser the kinetic energy possessed by it.

(iv) The energy stored in an object at rest due to its position is called its potential energy.

(v) A stone piece on a stretched catapult is an example of gravitational potential energy.

2. Fill in the blanks.

(i) The rate of doing work is called _____.

(ii) _____ the capability of doing work.

(iii) 1 horsepower = _____watts.

(iv) A wound-up watch spring has _____ energy due to its special configuration.

(v) Water stored in a dam has _____ potential energy.

3. Name the following.

(i) This is the product of force and displacement.

(ii) This is the SI unit of energy.

(iii) This is the shortest distance along the straight line between the final and initial points.

(iv) Oceans tides possess a huge amount of this energy.

(v) This kind of mechanical energy is always positive.

4. Answer these questions.

(i) When is power said to be 1 watt?

(ii) Convert 1 gigawatt into megawatt.

(iii) What is conservation law of mechanical energy?

(iv) How is kinetic energy produced?

(v) Mention two examples of kinetic energy.

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Worksheet 2

1. Tick the correct answer.

(i) 1 kilojoule is equal to

(a) 10^3 J (b) 10^4 J (c) 10^5 J (d) 10^6 J

(ii) The kinetic energy of an object depends on its

(a) mass (b) speed (c) both (a) and (b) (d) none

(iii) Heat energy is also called

(a) nuclear energy (b) thermal energy (c) chemical energy (d) electrical energy

(iv) Which one of the following is an example of elastic potential energy?

(a) a fruit on a tree

(b) a child sitting on the top of a slide

(c) a rock resting at the top of a hill

(d) a stretched spring and an arrow on a stretched bow

(v) Which is the ratio of work and time?

(a) power (b) energy (c) force (d) pressure

2. Write T for true and F for false statement.

(i) A coolie standing at a place with a heavy load on his head does no work.

(ii) A mountaineer climbing up a mountain does work.

(iii) Kinetic energy does not depend on volume.

(iv) The energy possessed by an object in motion is called kinetic energy.

(v) Gravitational potential energy can either be positive or negative.

3. Match the columns.

Column A	**Column B**
(i) Kinetic energy	(a) Depends on time
(ii) Potential energy	(b) 10^9 J
(iii) Power	(c) $\frac{1}{2}mv^2$
(iv) Work done	(d) mgh
(v) I MJ	(e) Does not depend on time
(vi) 1 GJ	(f) 10^6 J

4. Answer the following questions.

(i) When is work said to be done?

(ii) When a girl is swinging on a swing, then does she work?

(iii) A force of 50 N displaces an object through a distance of 10 m in its own direction. Calculate the work done on the object.

(iv) Define kinetic energy with one example.

(v) What is the SI unit of power?