



PHYSICS

BOOKS - ICSE

ENERGY

Test Yourself True Or False

1. A man going up has potential energy and kinetic energy both.



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2. A gum bottle lying on a table has no energy.

True/False.



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3. In an electric fan, electrical energy changes into mechanical energy. True/False.



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4. Potential energy changes into kinetic energy when it is put to use. True/False.



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5. One form of energy cannot be converted into another form. True/False.



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6. There is always some loss of energy in conversion from one form of energy to another form, so the total energy is not conserved. True/False.



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7. The energy of flowing water can be converted into electric energy (electricity). True/False.



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Test Yourself Fill In The Blanks

1. An electric fan converts electrical energy into..... energy.



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2. Cooking gas converts energy into heat energy



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3. Energy possessed by a compressed spring is..... energy.



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4. The ability to do work is called.....



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5. The energy possessed by a body due to its position is called energy



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6. The energy possessed by a body due to its motion is called energy



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7. Green plants convert energy into chemical energy.



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8. The S.I. unit of energy is



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9. An object falling freely from the roof of a multistorey building has..... and energy when halfway down the building.



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[Test Yourself Match The Column](#)

1. Match the following columns :

Column A

- (a) Running water
- (b) Burning
- (c) Energy
- (d) Sound energy
- (e) Nuclear energy

Column B

- (i) heat energy
- (ii) vibrations
- (iii) atom bomb
- (iv) kinetic energy
- (v) joule



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Test Yourself Select The Correct

1. When we rub our hands Which of the following is True ?

A. kinetic energy changes into potential energy

B. mechanical energy changes into heat energy.

C. potential energy changes into kinetic energy.

D. heat energy changes into mechanical energy.

Answer: B



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2. A ball rolling on the ground possesses

A. kinetic energy

B. potential energy

C. no energy

D. heat energy

Answer: A



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3. The energy stored in an electric cell is

A. chemical energy

B. electrical energy

C. heat energy

D. mechanical energy

Answer: A



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4. When a bulb lights up on passing current, the change of energy is

A. from electrical energy to heat energy

B. from electrical energy to light energy

C. from electrical energy to heat and light energy

D. from electrical energy to mechanical energy.

Answer: C



5. The correct statement is

A. Both work and energy have the same units

B. Potential energy of a body is due to its motion

C. Kinetic energy of a body is due to its position or state

D. Kinetic energy can change into potential energy, but potential energy cannot change into kinetic energy

Answer: A



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6. According to law of conservation of energy, energy changes from one form to another form, but the total energy of that system

A. increases

B. decreases

C. alternates

D. remains the same

Answer: D



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Test Yourself Long Short Answer Questions

1. Define the term energy and state its S.I. unit



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2. Define the term energy and state its S.I. unit



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3. Name five different forms of energy.



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4. What are the two forms of mechanical energy?



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5. What is potential energy ? State its unit.



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6. Give one example of a body that has potential energy, due to its position at a

height



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7. Give one example of a body that has potential energy, due to its elongated stretched state.



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8. State two factors on which the potential energy of a body at a certain height above the

ground depends.



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9. Two bodies A and B of masses 10 kg and 20 kg respectively are at the same height above the ground. Which of the two has greater potential energy?



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10. A bucket full of water is on the first floor of your house and another identical bucket with same quantity of water is kept on the second floor. Which of the two has greater potential energy ?



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11. Define the term kinetic energy. Give one example of a body which possesses kinetic energy.





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12. State two factors on which the kinetic energy of a moving body depends.



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13. Two toy-cars A and B of masses 500 g and 200 g respectively are moving with the same speed. Which of the two has greater kinetic energy?



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14. A cyclist doubles his speed. How will his kinetic energy change : increases, decreases or remains the same ?



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15. Name the form of energy which a wound up watch spring possesses.



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16. Can a body possess energy even when it is not in motion ? Explain your answer with an example.



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17. Name the type of energy (kinetic or potential) possessed by a moving cricket ball.



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18. Name the type of energy (kinetic or potential) possessed by a stone at rest on the top of a building.



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19. Name the type of energy (kinetic or potential) possessed by a compressed spring.



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20. Name the type of energy (kinetic or potential) possessed by the A moving bus.



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21. Name the type of energy (kinetic or potential) possessed by a bullet fired from a gun.



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22. Name the type of energy (kinetic or potential) possessed by the water flowing in a river.



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23. Name the type of energy (kinetic or potential) possessed by a stretched rubber band.



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24. Give one example to show the conversion of potential energy to kinetic energy when put in use.



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25. State the energy changes that occur in the unwinding of a watch spring.



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26. State the energy changes that occur in the Burning coal while operating a steam engine.



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27. State the energy changes that occur in the lighting of a torch bulb.



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28. State the energy changes that occur in an electric generator (or dynamo).



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29. Energy can exist in several forms and may change from one form to another. Give two examples to show the conversion of energy from one form to another.



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30. Give one relevant example for the following transformations of energy:

Electrical energy to heat energy.



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31. Give one relevant example for the following transformations of energy:

Electrical energy to mechanical energy.



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32. Give one relevant example for the following transformations of energy:

Electrical energy to light energy.



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33. Give one relevant example for the following transformations of energy:

Chemical energy to heat energy.



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34. Give one relevant example for the following transformations of energy:

Chemical energy to light energy.



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35. What do you mean by conservation of mechanical energy ? State the condition when it holds.



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36. Give one example to show that the sum of potential energy and kinetic energy remains constant if friction is ignored.



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37. A ball is made to fall freely from a height. State the kind / kinds of energy possessed by the ball when it is at the highest point



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38. A ball is made to fall freely from a height. State the kind / kinds of energy possessed by the ball when it is just in the middle



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39. A ball is made to fall freely from a height. State the kind / kinds of energy possessed by the ball when it is at the ground.



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40. State the changes in form of energy while producing hydro electricity.



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**Questions Write T For True And F For False
Correct The False Statements**

1. 1 calorie is equal to 48 J. TRUE or false ?



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2. Most of the energy on Earth is provided by the sun.



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3. Fuels like coal and wood contain mechanical energy.



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4. A stretched rubber band has kinetic energy.



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5. Plants use light energy to make their food.



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Questions Choose The Correct Option To Fill In The Blank

1. Electromagnets convert.....
(electrical/magnetic) into
(electrical/magnetic) energy.



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2. If the speed of a moving body is more, kinetic energy is (more/less)



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3. When the roller coaster is on the ground its (kinetic energy/potential energy) is zero.



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4. When batteries are charged electrical energy is converted into
(mechanical/chemical) energy.



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5. Energy can neither be created nor be
(produced/destroyed).



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1. Fill in the blank spaces by choosing the correct words from the list given below:

direction, joule, work, energy, force

Q. Ability to do work is called _____.



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2. Name the following

Kinetic and potential energy together



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3. Name the following

The energy that is released during a chemical reaction



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4. Name the following

Form of energy related with the vibration of matter



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5. Name the following

Form of energy related to moving charged particles



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6. Name the following

An object which converts chemical energy to electrical energy



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Exercise Section I Choose The Correct Option

1. SI unit of energy

A. newton

B. metre

C. joule

D. force

Answer:



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2. A stretched rubber has

- A. Kinetic energy
- B. Electrical energy
- C. Magnetic energy
- D. Potential energy

Answer:



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3. Energy used by maglev trains:

A. Sound energy

B. Heat energy

C. Light energy

D. Magnetic energy

Answer:



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4. The objects that convert mechanical energy to electrical energy

A. Batteries

B. Bulbs

C. Windmills

D. Toasters

Answer:



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5. At the highest point a roller coaster has

A. only kinetic energy

B. only potential energy

C. both kinetic and potential energy

D. high average velocity

Answer:



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Exercise Section I Write T For True And F For False Correct The False Statements

1. The only form of energy visible to the human eye is light energy



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2. True or False - A steam engine runs on electrical energy



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3. Energy given out by the sun is due to nuclear fusion.



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4. A loud speaker converts electrical energy to sound energy.



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Exercise Section I Match The Following

1. Match the following

- | | |
|--------------------------|---|
| 1. Photosynthesis | i. Chemical energy to heat energy |
| 2. Electric bulb | ii. Electrical energy to chemical energy |
| 3. Geyser | iii. Light energy to chemical energy |
| 4. Burning of wood | iv. Electrical energy to heat energy |
| 5. Charging of batteries | v. Electrical energy to light and heat energy |



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Exercise Section II

1. If a truck and a car are moving with similar speed, truck will have more energy.



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2. Give reasons

A ball resting on the top of a table has more energy than the one lying on the ground.



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3. Give reasons

Water stored in a dam is used to produce electricity .



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4. Distinguish between Kinetic energy and potential energy



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5. Distinguish between Heat energy and light energy



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6. Distinguish between Magnetic energy and electrical energy



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Exercise Section II Short Answer Questions

1. Define kinetic energy. What two physical quantities does it depend on?



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2. Why does a comb rubbed on hair attract small pieces of paper?



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3. What energy transformation takes place when a ball rolls down a hill?



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4. What energy conversions take place in a steam engine?



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5. What is the law of conservation of energy?



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Exercise Section II Long Answer Questions

1. What do you mean by energy? Explain kinetic and potential energy with examples.



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2. Explain chemical energy with the help of two examples.



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3. How is electrical energy generated in a hydroelectric power plant?



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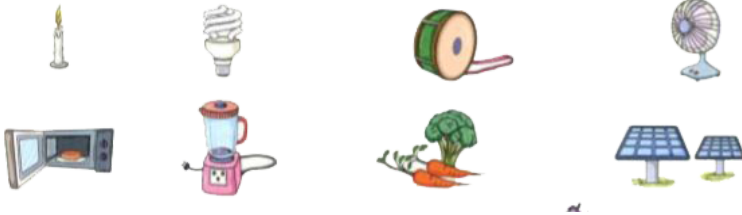
4. Explain any four energy transformations with examples.



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[Exercise Picture Study](#)

1. Look at the following pictures, write the transformations of energy

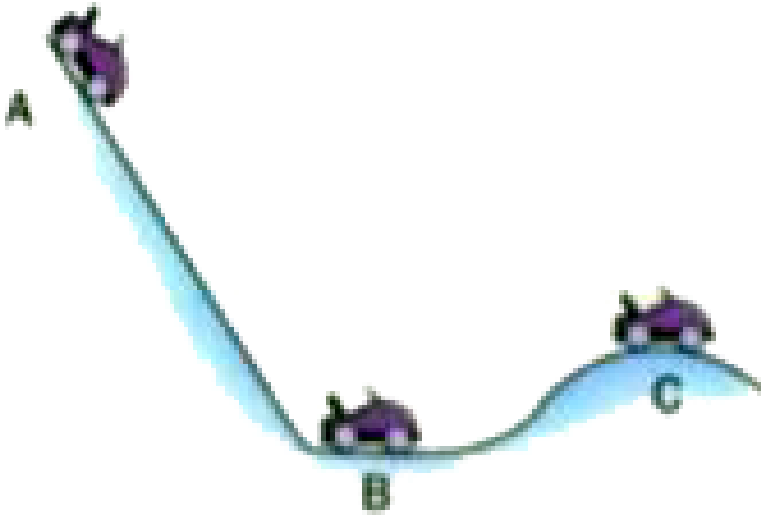


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2. In the following picture write down the position where

i. Potential energy is maximum ii. Kinetic

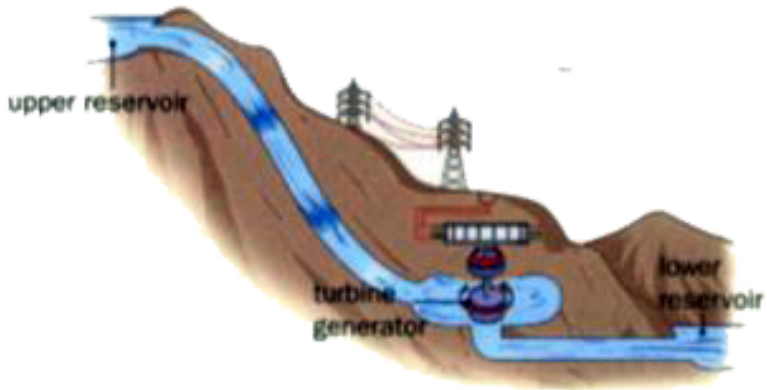
energy is maximum.



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3. Write the transformation of energy as water flows from the upper reservoir to the turbine generator and from there to the lower

reservoir.



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