

# INTERNATIONAL INDIAN SCHOOL- RIYADH

WORKSHEET 2017-2018

## STD:IX PHYSICS Chapter 11 - WORK AND ENERGY

1. Derive an equation for kinetic energy. What will cause greater change in kinetic energy of a body? Changing its mass or changing its velocity.
2. Define 1kwh. What is the relationship between commercial unit and SI unit of energy?
3. In an oscillations pendulum at what position the potential and kinetic energy are maximum?
4. What is the energy conversion in (i) solar cell (ii) loudspeaker?
5. A woman pulls a bucket of water of total mass 5kg from a well which is 10m deep in 10sec. Calculate the power used by her ( $g=10\text{m/s}^2$ )
6. Give an example in each case where work done by a force is (a) zero (b) positive (c) negative.
7. State law of conservation of energy. Explain with the help of an example (freely falling body or simple pendulum). Illustrate it.
8. (a) Certain force acting on a 1600 kg mass changes its velocity from 60km/h to 20km/h. Calculate the work done by the force. (b) What is the work done by a satellite revolving around earth, justify your answer.
9. The kinetic energy of an object of mass,  $m$  moving with a velocity of 5m/s is 30J. What will be its kinetic energy when its velocity is doubled?
10. (a) Define power. Give its SI unit.  
  
(b) Two electric bulbs of 60w each work for one hour a day. Calculate the units of energy consumed by these bulbs.  
(c) If the rate per unit is Rs.2.50, what will be the bill of the household using these bulbs for 10 days?

# **INTERNATIONAL INDIAN SCHOOL, RIYADH**

## **PHYSICS WORKSHEET 2017-18**

### **CLASS IX PHYSICS WORKSHEET - SOUND**

- 1. Give one natural phenomenon caused by reflection of sound.**
- 2. What is meant by compression' and rarefaction in sound?**
- 3. Define the following terms**
  - a) Wave length b) frequency c) Time period d) Amplitude**
- 4. Compare longitudinal and transverse waves.**
- 5. A human heart beats 75 times a minute. Calculate the frequency.**
- 6. A boat at anchor is rocked by waves whose crests are 100 cm apart and whose velocity is 25 m/s. How often do the crests reach the boat?**
- 7. Name two animals which can sense beyond 20,000 Hz.**
- 8. Why do we not hear the sound of an explosion on the surface of the Moon?**
- 9. Explain the working of SONAR**
- 10. Write any two uses of ultrasound. Explain.**
- 11. A source of wave produces 40 compressions and 40 rarefactions in 0.4 s. Find its frequency.**
- 12. The distance between a crest and trough is 20 cm in ripples on the surface of water. When 20 ripples are produced in one second, calculate**
  - a) the time period b) the velocity**
- 13. How bats catch prey?**
- 14. Explain the structure and working of human ear.**
- 15. What is an infrasound? Name two animals that can sense infrasound.**
- 16. A child hears an echo from a cliff 4 seconds after the sound from a powerful cracker is produced. How far away is the cliff from the child (Velocity of sound in air is 330 m/s.)**
- 17. What is the minimum size of a room to get an echo if the velocity of sound is 320 m/s?**
- 18. What is meant by reverberation of sound?**
- 19. What is the acronym 'SONAR' stands for?**
- 20. Write an experiment to prove that sound requires a medium for its propagation?**

