



INDIAN SCHOOL DARSAIT
DEPARTMENT OF SCIENCE



| | | |
|----------------------------------|-------------------------|-----------------|
| Subject : PHYSICS | TOPIC:WORK,ENERGY&POWER | Worksheet no#06 |
| Resource Person: Ms Sonia Antony | | Date :22/11/17 |
| Name of the Student : _____ | Class & Division : IX | Roll Number: __ |

| Q.NO | QUESTIONS | MARKS |
|------|---|-------|
| 1 | What kind of energy transformation takes place at a nuclear power station? | 1 |
| 2 | How many watts are equal to one horse power? | 1 |
| 3 | Earth moves in a circular orbit around the sun .How much work is done by the gravitational force of sun for completing one revolution? | 1 |
| 4 | What should be the angle between the displacement and force to get maximum work? | 1 |
| 5 | Define SI unit of work. | 1 |
| 6 | What are the conditions for zero work done? | 1 |
| 7 | 'When an aircraft takes off, the work done by its weight is negative'. Explain it | 2 |
| 8 | A body of mass 1 kg has energy 2J.What is its momentum? | 2 |
| 9 | The weight of a person is 400 N .How much work is done by the person against gravity in climbing up to the second floor of height 8 m , of a building? ($g=10\text{m/s}^2$). | 2 |
| 10 | A child rises a bucket full of water having a total mass of 20 kg. If the work done by the child against gravity is 1960J,compute the height through which he rises the bucket.($g=9.8\text{m/s}^2$) | 2 |
| 11 | Two objects having equal masses are moving with velocities 2m/s and 6m/s respectively .Calculate the ratio of their kinetic energies. | 2 |
| 12 | How kinetic energy changes when 1. Speed of the body is doubled. 2. Speed of the body becomes half. 3. Mass becomes 4 times of its initial value. 4. Mass changes to one third of its initial value | 2 |

| | | |
|----|--|---|
| 13 | An engine supplies a 25000J of energy in one minute. Calculate the power of the engine in kilowatts. | 2 |
| 14 | A 100W electric bulb is lighted for 2 hours every day and five 40W tubes are lighted for 4 hours everyday (i) Calculate the energy consumed for 60 days, and (ii) Cost of electricity consumed at a rate of rupees 3 per kWh. | 2 |
| 15 | Find the expression for the gravitational potential energy of a body of mass m at a height h . | 2 |
| 16 | An object of mass 3 kg is thrown vertically upward with a velocity of 10 m/s .Find the kinetic energy of the body at the time of throwing,(ii)its P.E.at the highest point. | 2 |
| 17 | State the law of conservation of energy. | 2 |
| 18 | Derive the relation between commercial unit and SI unit of energy. | 2 |
| 19 | Prove that the Mechanical energy remains the same at every point while an object is under free fall. | 3 |
| 20 | Write the energy transformation in the following. <ol style="list-style-type: none"> 1. Car engine 2. Electric cell 3. Loud speaker 4. Micro phone 5. Nuclear power plant 6. Steam engine | 3 |