



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