INDIAN SCHOOL DARSAIT

DEPARTMENT OF PHYSICS

Subject: Physics Topic: Work, Energy& Power WorksheetNo#05

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Name of the student: ---------- Class& Div: XI Roll no: ----------

S.NO	QUESTIONS	MARK
1	Mention the factors on which co-efficient of friction depends.	1
2	In which collision K.E changes but momentum does not change.	1
3	What should be the angle between the force and the displacement for maximum and minimum work?	1
4	What happens when a light sphere collides head on with a more massive sphere initially at rest?	1
5	Can a body have energy without having momentum and have momentum without having energy. Explain.	1
6	A shell explodes while at rest. Discuss the momentum and energy conservation in the explosion.	1
7	Obtain an expression for K.E. of a body moving uniformly.	2
8	Show that for a freely falling body the sum of its kinetic energy and potential energy remains constant at all points during its fall.	2
9	Is friction a conservative force? Give reason.	2
10	Does the work done in rising a box on to a platform depend upon how fast it is raised up? If not why?	2
11	A spring is cut in to two equal halves .How spring constant of each half affected?	2
12	Write the properties of conservative force and Prove that gravitational force is conservative.	2
13	State and explain work energy theorem for a variable force.	2

14	The potential energy of a spring when stretched through a distance x is25j.What is the amount of workdone on the same spring so as to stretch it by an additional distance 5x?	2
15	State and prove law of conservation of Mechanical Energy.	2
16	A body of mass 4 kg initially at rest is subject to a force 16N.What is the kinetic energy acquired by the body at the end of 10 s?	2
17	Discuss elastic collision in one dimension. Obtain expression for velocities of two bodies after collision.	3
18	An elastic spring of spring constant 'k' is compressed by an amount x. Show that its potential energy is ½ kx^2.	3
19	Prove that instantaneous power is given by the dot product of force and velocity.	3
20	A ball of .1 kg makes an elastic head on collision with a ball of unknown mass that is initially at rest. If the 0.1 kg ball rebounds at one third of its original speed, what is the mass of the other ball?	3