

**The City School**

North Nazimabad Boys Branch

Grade: 9

**Subject : Physics**

**Topic: Work Energy and Power**

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**1. When a book of mass 2kg was pushed along the horizontal surface of the table, the friction force measured was 5N. When the book was pushed along the same table with a force of 9N, it moved with a constant**

a. acceleration of 2.0 m/s2

b. acceleration of 25 m/s2

c. speed of 2.0 m/s d. speed of 2.5 m/s2

**2. A balloon filled with gas has a total weight of 1800N. The balloon descends with a constant speed of 3 m/s. What is the resultant force acting on the balloon during descent?**

a. 0N

b. 600N c. 1800N d. 5400N

**3. A crane lifts a load of 8000N through a vertical distance of 20m in 4s. What is the average power during this operation?**

a. 100W

b. 1600W

c. 40000W

d. 640000W

**4. A toy car A moving with a speed of 30 m/s has a kinetic energy of 900J. Another toy car B has twice the mass of toy car A. If toy car B moves with a speed of 15 m/s, what is the kinetic energy of toy car B?**

**a**. 450J

b. 900J c. 1800J d. 3600J

**5. A 60W fluorescent lamp converts half the electrical energy supplied into light energy. How much light energy does it emit in 1 minute?**

a. 30W

b. 60W

c. 1800W

d. 3600W

**6. A electric motor is used to lift a 200N load through 3m in 5s. If the motor has an efficiency of**

**40%, what is the total electrical energy used by the motor in one second?**

a. 48W

b. 300W c. 1200W d. 3000W

**7. A trolley of mass 1.5kg is placed on a smooth table. If a constant force of 6N acts on the trolley, the acceleration produced by the force will be**

a. 0.25 ms-2 b. 4 ms-2

c. 4.5 ms-2 d. 7.5 ms-2

**8. An object of mass 2kg moves with uniform velocity when a constant force of 10N acts on it. When the force is increased to 20N, the acceleration will be**

a. 4 ms-2

b. 5 ms-2 c. 6 ms-2 d. 10 ms-2

**9. The weight of a rocket in outer space is zero because**

a. its mass becomes zero

b. there is no frictional force

c. there is no gravitational force d. the rocket is stationary

**10. A ball of mass 0.2kg is thrown to a height of 15m. What is the change in its gravitational potential energy? (g=10N/kg)**

a. 0.3 J b. 3.0 J c. 7.5 J d. 30 J e. 75 J