



भारतीय नाभिकीय विद्युत निगम लिमिटेड
BHARATIYA NABHIKIYA VIDYUT NIGAM LIMITED
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काँचीपुरम जिला (तमिलनाडु)/ Kancheepuram Dt.(TN)

**Sample Question for the Written Examination for the post of
Scientific Assistant/B (HEALTH PHYSICS)**

1	If you push for an hour against a stationary wall, you do no work (A) On the wall (B) at all (C) both of these (D) none of these
2	When an object is lifted 10 meters, it gains a certain amount of potential energy. If the same object is lifted 20 meters, its potential energy gain is (A) Less. (B) the same. (C) twice as much. (D) Four times as much
3	A 1000-kg car and a 2000-kg car are hoisted the same distance in a gas station. Raising the more massive car requires (A) less work. (B) as much work. (C) twice as much work. (D) four times as much work.
4	It takes 40 J to push a large box 4 m across a floor. Assuming the push is in the same direction as the move, what is the magnitude of the force on the box? (A) 4 N (B) 10 N (C) 40 N (D) 160 N
5	A heavy pile driver starting from rest falls on a pile with a force that depends on (A) the original height of the driver. (B) the original potential energy of the driver. (C) the distance the pile is moved. (D) all of these.
6	Using 1000 J of work, a toy elevator is raised from the ground floor to the second floor in 20 seconds. How much power does the elevator use? (A) 20 W (B) 50 W (C) 100 W (D) 1000 W
7	A ball is projected into the air with 100 J of kinetic energy which is transformed to gravitational potential energy at the top of its trajectory. When it returns to its original level after encountering air resistance, its kinetic energy is (A) less than 100 J. (B) more than 100 J. (C) 100 J. (D) not enough information given
8	A machine puts out 100 Watts of power for every 1000 Watts put into it. The efficiency Of the machine is (A) 10% (B) 50% (C) 90% (D) 110%

9	A diver who weighs 500 N steps off a diving board that is 10 m above the water. The diver hits the water with kinetic energy of (A) 10J. (B) 500 J. (C) 510 J. (D) 5000 J.
10	Consider a hydraulic press. When the input piston is depressed 20 cm, the output piston is observed to move 1 cm. On the same press, an input force of 1 N can raise no more than (A) 1 N. (B) 10 N. (C) 20 N. (D) 21 N.
11	A pulley system raises a 1000-N load with 100 N of input force. The efficiency of the System is (A) 10% (B) 90% (C) 1000% (D) not enough information given.
12	A person on the edge of a roof throws a ball downward. It strikes the ground with 100 J of kinetic energy. The person throws another identical ball upward with the same initial speed, and this too falls to the ground. Neglecting air resistance, the second ball hits the ground with a kinetic energy of (A) 100 J. (B) 200 J. (C) less than 100 J. (D) More than 200 J.
13	If a power plant is 30% efficient, and the transmission system that delivers power to consumers is 60% efficient, then the overall efficiency is (A) 90% (B) 60% (C) 30% (D) 18%
14	On a sunny day about 500 watts of solar power strikes each square meter of the earth's surface. If a solar automobile has 4 square meters of collectors area and 100% efficient collectors and motor, its power output is about (A) 0.27hp. (B) 2.7 hp. (C) 27 hp. (D) 270 hp.
15	A flower pot of mass m falls from rest to the ground below, a distance h . Which statement is correct? (A) The speed of the pot when it hits the ground is proportional to h . (B) The KE of the pot when it hits the ground is proportional to h . (C) The KE of the pot when it hits the ground does not depend on m . (D) The speed of the pot when it hits the ground depends on m .