Physics Science Questions for CDS, CGL Tier-1, Railways and SSC 10+2 Exams

Physics Quiz 18

Directions: Study the following question carefully and choose the right answer.

1. What happens to the potential energy of an object when it is raised above the ground?

Decreases Increases Increases upto a certain point and then decreases

Cannot be determined

2. Curie is a unit of?

Heat Pressure Temperature Radio activity

3. Higgs boson is also known as

Man particle God particle Lucy particle None of the above

4. The slope of a velocity-time graph represents?

Distance Acceleration Momentum Mass

5. What happens to your weight when you are in a lift which goes down?

Decreases Increases Decreases and then increases

Increases and then decreases

6. What happens to the electrostatic force between two charges when the distance between them decreases?

Increases Decreases Increases and then decreases Remains same

7. The speed of light is maximum in which of the following media?

Vacuum Water Rock It travels in the same speed in all of them

8. Which of the following is also known as dry ice

Solid CO_2 Solid N_2O Solid CO Solid NO

9. What will be the current flowing in a wire of resistance 40 ohm with a voltage 40 V applied across it?

1 A 10 A 22 A 20 A

10. Which of the following is used to initiate nuclear fission?

Protons Neutrons Electrons Any of the above may be used

Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	D	B	B	A	A	A	A	A	B

***Explanations*:**

1.

The potential energy of an object is = mgh, where m is the mass of the object, g is the acceleration of gravity and h is the height of the object. If the height is raised above the ground, the potential energy increases as energy is directly proportional to the height.

Hence, option B is correct.

2.

Curie is a unit of radioactivity. The curie is a unit of ionizing radiation (radioactivity), symbolized Ci and equal to 3.7 x 10^{10} disintegrations or nuclear transformations **per second.** This is approximately the amount of radioactivity emitted by **one gram** (1 g) of radium-226. The unit is named after Pierre Curie, a French physicist.

Hence, option D is correct.

3.

Higgs boson particle is also known as the god particle.

The **Higgs boson** is an elementary particle in the standard model of particle physics. First suspected to exist in the 1960s, it is the quantum excitation of the **Higgs field**, a fundamental field of crucial importance to particle physics theory. Unlike other known fields such as the electromagnetic field, it is scalar and also has a non-zero constant value in vacuum.

Hence, option B is correct.

4.

We know v= u+ at. If a graph of velocity “v” and time “t” is drawn, we get a straight line with slope “a” and an intercept “u”.

Hence, option B is correct.

5.

The weight decreases when the lift moves down and it increases when the lift moves up.

As the lift moves down, we observe a pseudo force which acts on the opposite direction of the weight of the body. Hence, the net weight decreases.

As the lift moved up, we observe a pseudo force which acts on same direction as that of the weight of the body. Hence, the net weight increases.

Hence, option A is correct.

6.

The force between two charges is given as $F= K\ m\ M/\ d^2$. Hence, if the distance decreases the overall denominator decreases and therefore force increases. We can say that force is inversely proportional to the square of the distance between the two charges.

Hence, option A is correct.

7.

The velocity of light is maximum in free space or vacuum, in other medium due to the interaction of photons the speed of light is less.

Hence, option A is correct.

8.

Solid CO_2 is also known as dry ice. It does not melt into a liquid when heated; instead, it changes directly into a gas (This process is known as sublimation). Dry ice is often used for the following purposes.

Hospitals & Clinics

Food Processing & Distribution

Industrial Cleaning and Technical Processes

Theatrical and Special Effects

Hence, option A is correct.

9.

We know V= I r, where V is the voltage, I is the current and R is the resistance. As resistance is 40 ohm and voltage is 40 v, therefore I = 1 A.

Hence, option A is correct.

10.

Neutrons are used to initiate nuclear fission reactions. Nuclear fission is either a nuclear reaction or a radioactive decay process in which the nucleus of an atom splits into smaller parts. The fission process often produces free neutrons and gamma photons, and releases a very large amount of energy even by the energetic standards of radioactive decay.

Hence, option B is correct.