AIS Learning

O/L Sciences
Practice Tutorial

Lesson 01: Fundamentals of Physics

1. Kinematics:
    a. Define displacement and velocity.
    b. If an object moves with a constant speed of 20 m/s for 4 seconds, what is its displacement?

2. Newton's Laws of Motion:
    a. State Newton's First Law of Motion.
    b. If a force of 50 N is applied to an object with a mass of 10 kg, what is the acceleration?

3. Work and Energy:
    a. Define work in the context of physics.
    b. If a force of 30 N is applied to move an object a distance of 5 meters, how much work is done?

4. Conservation of Energy:
    a. State the law of conservation of energy.
    b. If a ball is dropped from a height, what forms of energy does it possess at the top and bottom?

5. Momentum and Impulse:
    a. Define momentum.
    b. If a 500 kg car accelerates from 10 m/s to 30 m/s in 5 seconds, what is its change in momentum?

6. Gravity:

a. Explain how weight differs from mass.
b. Calculate the gravitational force between two objects with masses of 40 kg and 60 kg separated by a distance of 2 metres.

7. Wave Properties:
   a. Define frequency and wavelength.
   b. If the frequency of a wave is 50 Hz and the wavelength is 10 meters, calculate the speed of the wave.

8. Optics:
   a. Define refraction.
   b. Explain why a pencil appears bent when partially submerged in water.

9. Electricity:
   a. Define electric current and voltage.
   b. If a circuit has a resistance of 20 ohms and a current of 2 amperes, what is the voltage?

10. Nuclear Physics:
    a. Define nuclear fission.
    b. Explain the difference between nuclear fission and nuclear fusion.

Try those questions by yourself and submit your answers to us.
We can evaluate it for you!!!!
Happy Learning!!!!

-Evaluation Team AIS Learning