

Technical Science
Study Guide for Test 3 Introduction to Physics

1. Define, Know appropriate units, Match formulas and Calculate the following physical phenomena

Speed

Acceleration

Force

Work

Power

2. A car covers 176 feet in 4 seconds. What is its speed in miles per hour

3. If the car in Question 2 reaches that speed from a complete stop in 3 seconds what is the acceleration?

4. A 50 kg barbell is lifted 2 meters in 1.5 seconds. Calculate the following

The force required to lift the barbell

The weight of the barbell

The work done

The potential energy

The energy expended if you are 40% efficient

The power generated

5. How does friction effect Force, Work, and Energy?

6. What is the ultimate source of virtually all our energy? What equation explains this reaction?

7. How are wavelength, frequency, and energy related?
8. How is energy from the sun trapped and then how is it released
9. Know some benchmark temperatures on the three temperature scales
10. Define specific heat and explain what it means for a substance to have a high or low one.
11. What are the 4 factors that effect the rate at which heat flows?
12. Define Entropy and give an example. How is this related to energy transformations?
13. What are the three functions of a machine. How are they related to Work, Energy, and Power
14. What is the difference between mass and weight?
15. What are Newton's three laws of motion?
16. How do you calculate efficiency? Explain why you can't go over 100%
17. What are the three types of Nuclear Reactions?
18. What are the three ways heat moves?