PHY140 Physics

Overview (11/11)

UEXCEL®
Turn knowledge into credit.

General Information:

Exam Title:	Physics	Policies and Procedures:	www.uexceltest.com/regguide
Admin Code:	PHY140	Exam Prerequisites:	None
Exam Format:	Multiple-Choice		
Exam Length:	2 Hours, 70 Questions	Additional Exam	
Exam Credit Hrs:	6 Semester Hrs - Lower Level	Requirements/	
Exam Texts:	www.uexceltest.com/bookstore	Recommendations:	None
Additional Materials:	Content Guide, Practice Exam		

Exam Description: The UExcel examination in Physics measures knowledge and understanding of material typically taught in a two-semester (lecture-only) algebra/trigonometry-based undergraduate course sequence in Physics. The content of the examination corresponds with course offerings commonly called Physics I & II. The examination assumes a familiarity with units and conversion; scientific notation and orders of magnitude; algebra, trigonometry, and graphing techniques. The examination tests for a comprehensive knowledge of facts and terminology, an understanding of physical concepts and theories, and the student's ability to apply this knowledge and understanding to analyze and solve a variety of problems.

Exam Outcomes:

After you have successfully worked your way through the recommended study materials, you should be able to:

- demonstrate knowledge and comprehension of the fundamental principles of physics (for example, conservation of energy, mass, energy, charge, momentum)
- select appropriate physical principles that apply to a given situation, represent a situation as a mathematical problem, and solve the problem
- model physical situations with diagrams, graphs, and equations
- use mathematical tools of algebra and trigonometry to solve physical problems

Exam Content Areas:

1. Mechanics (30%)
2. Thermal Physics (20%)
3. Electromagnetism (25%)
4. Light and Optics (15%)
5. Modern Physics (10%)

Recommended Resources:

Young, H.D. (2012). *College physics with mastering physics* (9th ed.). San Francisco: Pearson Addison-Wesley. ISBN: 3-217-4980-4

UExcel Practice Exam for Physics
(visit www.uexceltest.com/resources)

Sample Questions

1. Two identical point charges are 0.1 m apart. The force between them is 1 N. Which charge is closest to the magnitude of one of these charges?

   a. 1.11×10^{11} C
   b. 0.95×10^{5} C
   c. 1.05×10^{-5} C
   d. 3.3×10^{-11} C

2. A rigid, sealed container is filled with 0.3 moles of helium gas at 20^0 C and atmospheric pressure ($P_{atm} = 1.013 \times 10^5$ Pa). The container is placed in a storage shed where the gas is warmed to 40^0 C. Which is the final pressure (P_f) inside the container assuming ideal gas behavior?

   a. 1.013×10^5 Pa
   b. 1.082×10^5 Pa
   c. 2.026×10^5 Pa
   d. 6.078×10^5 Pa

3. A sample is found to be emitting radiation at a rate of 48 counts per minute at noon. Six hours later, the rate has decreased to 24 counts per minute. Which is the counts per minute emission rate of the sample at noon the previous day?

   a. 144
   b. 288
   c. 384
   d. 768

4. A truck moving along a straight, flat road with speed 20 m/s slows down at a constant rate for 3 s until it reaches a speed of 5 m/s. What is the distance the truck traveled during this 3 s time period?

   a. 15.0 m
   b. 22.5 m
   c. 37.5 m
   d. 82.5 m

5. What physical process is employed in the design of corrective lenses?

   a. diffraction
   b. polarization
   c. reflection
   d. refraction

Answer Key: 1. c, 2. b, 3. d, 4. c, 5. d