

# Phys 132 - Fund Phys 2 - Quiz 2 Sample Problems

These problems represent what I anticipate asking on Quiz 2 (or on the Final Exam) from Chapter 20. They all come from the problem set at the end of Chapter 20, and they're all even problems, so you don't (yet) have the answers. Many of the odd problems are "good" too.

Of course, there will not be this many problems on the quiz!

1. Chapter 20, Problem 4 (Current and Charge)

- A)  $2.1 \times 10^6$  J
- B)  $1.3 \times 10^6$  J
- C)  $1.1 \times 10^5$  J
- D)  $4.3 \times 10^2$  J
- E)  $3.6 \times 10^2$  J

2. Chapter 20, Problem 24 (Power, Energy, and Cost)

- A)  $\$5.0 \times 10^6$
- B)  $\$1.4 \times 10^5$
- C)  $\$7.1 \times 10^6$
- D)  $\$8.5 \times 10^5$
- E)  $\$8.7 \times 10^6$

3. Chapter 20, Problem 28 (Resistivities are in Table 20.1 on page 582.)

- A) 50 m
- B) 25 m
- C) 90 m
- D) 45 m
- E) 70 m

4. Chapter 20, Problem 42 (Series Resistances)

- A)  $6.0 \times 10^1 \Omega$
- B)  $5.0 \times 10^1 \Omega$
- C)  $4.0 \times 10^1 \Omega$
- D)  $3.3 \times 10^1 \Omega$
- E)  $1.9 \times 10^1 \Omega$

5. Chapter 20, Problem 46 (Power for Series Resistors)

- A) 580 W
- B) 140 W
- C) 240 W
- D) 340 W
- E) 290 W

6. Chapter 20, Problem 54 (Parallel Resistors, with algebra)

- A) 2.00  $\Omega$ , 4.00  $\Omega$
- B) 1.50  $\Omega$ , 4.50  $\Omega$
- C) 3.00  $\Omega$ , 3.00  $\Omega$
- D) 2.00  $\Omega$ , 6.00  $\Omega$
- E) 2.25  $\Omega$ , 5.75  $\Omega$

7. Chapter 20, Problem 62a (Series-Parallel Combination)

- A)  $6.04 \times 10^{-2}$  A
- B)  $8.33 \times 10^{-2}$  A
- C)  $1.18 \times 10^{-1}$  A
- D)  $3.12 \times 10^{-1}$  A
- E)  $3.65 \times 10^{-1}$  A

8. Chapter 20, Problem 62b

- A) 0.833 W
- B) 0.972 W
- C) 1.88 W
- D) 2.81 W
- E) 5.63 W

9. Chapter 20, Problem 70 (Internal Resistance)

- A) 1.80 V
- B) 7.27 V
- C) 10.2 V
- D) 10.9 V
- E) 11.4 V

10. Chapter 20, Problem 76 (Kirchoff's Laws, Interactive LearningWare 20.1)

- A) 0.73 A, from right to left
- B) 0.73 A, from left to right
- C) 1.73 A, from left to right
- D) 1.73 A, from right to left
- E) 2.06 A, from left to right

11. Chapter 20, Problem 78 (Kirchoff's Laws, Concept Simulation 20.3)

- A) 4.50 A, from the bottom to the top
- B) 4.50 A, from the top to the bottom
- C) 1.82 A, from the top to the bottom
- D) 2.68 A, from the top to the bottom
- E) 2.68 A, from the bottom to the top

12. Chapter 20, Problem 94 (Capacitors in Parallel.) (Hint:  $q_1 + q_2$  cannot change, and  $V_1 = V_2$  after the switch is closed.)

- A) 1.25 V
- B) 1.44 V
- C) 1.80 V
- D) 1.90 V
- E) 2.12 V

13. Chapter 20, Problem 96 (RC Circuit)

- A)  $1.4 \times 10^3 \Omega$
- B)  $2.3 \times 10^3 \Omega$
- C)  $6.0 \times 10^3 \Omega$
- D)  $5.2 \times 10^3 \Omega$
- E)  $4.0 \times 10^3 \Omega$

14. Chapter 20, Problem 98 (RC, % charge)

- A) 1.22
- B) 1.61
- C) 2.23
- D) 3.16
- E) 6.99

15. Chapter 20, Problem 104 (Kirchoff's Laws)

- A) 2.50 V
- B) 6.78 V
- C) 14.2 V
- D) 20.3 V
- E) 46.0 V

16. Chapter 20, Problem 106 (Capacitor in a DC circuit with series resistors)

- A)  $5.7 \times 10^{-5} \text{ C}$
- B)  $3.2 \times 10^{-4} \text{ C}$
- C)  $7.2 \times 10^{-5} \text{ C}$
- D)  $1.6 \times 10^{-4} \text{ C}$
- E)  $3.6 \times 10^{-5} \text{ C}$