



browntr19@students.ecu.edu  
([sign out](#))

[Home](#)   [My Assignments](#)  
[Grades](#)   [Communication](#)  
[Calendar](#)

[←](#) **PHYS 1260, section 001, Fall 2020**

INSTRUCTOR

**Joel DeWitt**  
East Carolina University

# Final Exam (1260) (Test)

## Current Score

QUESTION

|   |   |   |   |   |   |   |   |   |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|

## Due Date

**TUE, NOV 17, 2020**  
1:30 PM EST



[Request Extension](#)

## Assignment Submission & Scoring

### Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

### Assignment Scoring

Your last submission is used for your score.

1.

DETAILS

COLFUNPHYS1 17.P.018.

MY NOTES

ASK YOUR TEACHER

At what distance from a proton does its electric field have a magnitude of 7 N/C?

2.

DETAILS

COLFUNPHYS1 18.P.001.

MY NOTES

ASK YOUR TEACHER

The potential at point P in an electric field is 453 V. (Let's denote the electric potential energy as  $U_E$ .)

(a) What is the electrical potential energy of a proton placed at P, in eV and in joules?

$$U_E = \text{[ ]}$$

$$U_E = \text{[ ]}$$

(b) What is the electrical potential energy of an electron at P, in eV and in joules?

$$U_E = \text{[ ]}$$

$$U_E = \text{[ ]}$$

3.

DETAILS

COLFUNPHYS1 19.P.005.

MY NOTES

ASK YOUR TEACHER

A certain resistor is made with a 51.8 m length of fine copper wire,  $5.20 \times 10^{-2}$  mm in diameter, wound onto a cylindrical form and having a fiber insulator separating the coils. Calculate the resistance. (The resistivity of copper is  $1.72 \times 10^{-8} \Omega\cdot\text{m}$ .)

4.

DETAILS

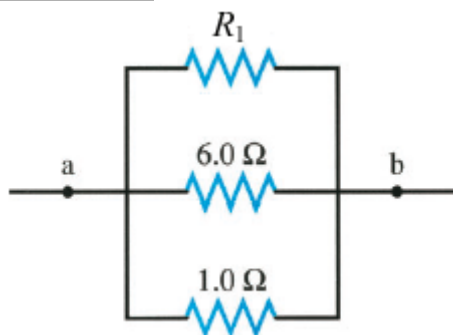
COLFUNPHYS1 20.P.012.

MY NOTES

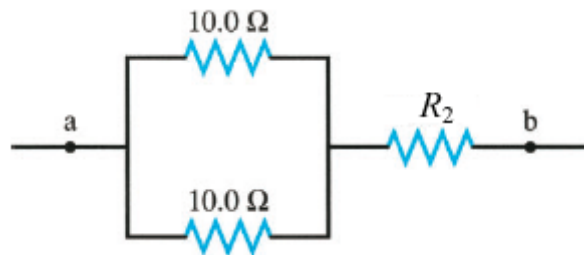
ASK YOUR TEACHER

For each network shown below, find the equivalent resistance between a and b.

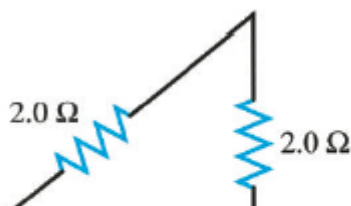
(a) (Take  $R_1 = 3.3 \, \Omega$ .)

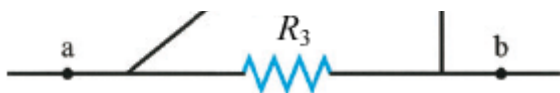


(b) (Take  $R_2 = 21.2 \, \Omega$ .)

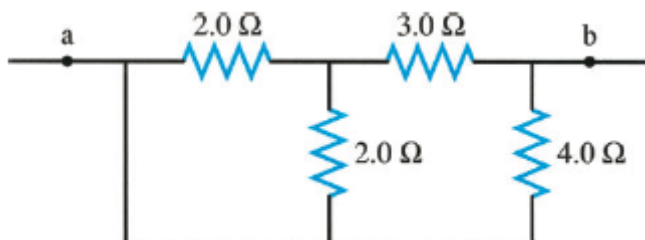


(c) (Take  $R_3 = 1.4 \, \Omega$ .)





(d)



5.

DETAILS

COLFUNPHYS1 21.P.024.

MY NOTES

ASK YOUR TEACHER

A singly charged  ${}^7\text{Li}$  ion has a mass of  $1.16 \times 10^{-26}$  kg. It is accelerated through a potential difference of 496 V and subsequently enters a uniform magnetic field of magnitude 0.360 T perpendicular to the ion's velocity. Find the radius of its path.

6.

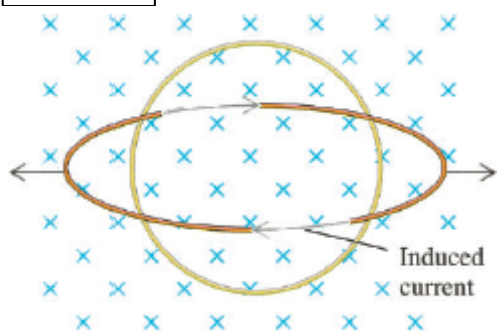
DETAILS

COLFUNPHYS1 22.P.010.

MY NOTES

ASK YOUR TEACHER

The area enclosed by the wire loop in the figure below is reduced from 34 cm<sup>2</sup> to 13 cm<sup>2</sup> in a time interval of 0.13 s. The magnitude of the magnetic field is 0.73 T. Find the emf induced in the wire.



7

DETAILS

COLFUNPHYS1 23.P.013

MY NOTES

ASK YOUR TEACHER

7. [DETAILS](#)

COLFUNPHYS1 23.P.013.

[MY NOTES](#)[ASK YOUR TEACHER](#)

Find the index of refraction in a medium in which the speed of light is  $5.20 \times 10^7$  m/s.

8.

[DETAILS](#)

COLFUNPHYS1 24.P.032.

[MY NOTES](#)[ASK YOUR TEACHER](#)

Find the image distance and linear magnification for a small object on the optical axis, 21.4 cm from a lens of focal length -9.9 cm.

image distance

linear magnification

9.

[DETAILS](#)

COLFUNPHYS1 25.P.035.

[MY NOTES](#)[ASK YOUR TEACHER](#)

An astronomical telescope has an objective with a focal length of 1.1 m and an ocular with a focal length of 5.3 cm. What is its angular magnification?

10.

[DETAILS](#)

COLFUNPHYS1 26.P.003.

[MY NOTES](#)[ASK YOUR TEACHER](#)

A CO<sub>2</sub> laser produces infrared radiation with a wavelength of 10.6  $\mu\text{m}$  and a bandwidth of  $10^{-5}$  nm. What is the coherence length of the radiation?

11.

[DETAILS](#)

COLFUNPHYS1 27.P.016.

[MY NOTES](#)[ASK YOUR TEACHER](#)

A spaceship with a proper length of 108 m passes an observer at a speed of 0.78315c. What is the length of the ship as seen by the observer?

12.

DETAILS

COLFUNPHYS1 29.P.001.

MY NOTES

ASK YOUR TEACHER

Calculate the **third** longest wavelength in the Balmer series.

What color is this light?

- ☐ violet
- ☐ blue
- ☐ green
- ☐ yellow
- ☐ orange
- ☐ red

13.

DETAILS

COLFUNPHYS1 30.P.025.

MY NOTES

ASK YOUR TEACHER

Find the decay constant of  $^{131}_{53}\text{I}$ , which has a half-life of **8.040** days.

Submit Assignment

Save Assignment Progress

[Home](#)[My Assignments](#)[Request Extension](#)

