

PHYSICS 6C PRACTICE QUIZ 4

THE FOLLOWING MULTIPLE CHOICE QUESTIONS ARE NOT TO BE TURNED IN FOR GRADING. THEY ARE INTENDED AS A SELF EVALUATION QUIZ AND PRACTICE FOR THE SECOND MIDTERM EXAM

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) What power contact lens should be used to correct the vision of a farsighted person whose near point is 80 cm to see something clearly at a distance of 25 cm?
 - A) 2.8 diopters
 - B) -2.8 diopters
 - C) -4.0 diopters
 - D) -4.2 diopters
 - E) 4.2 diopters

- 2) John is nearsighted and cannot see things beyond 110 cm from his eyes. What is the focal length of the contact lenses that will enable him to see distant objects clearly?
 - A) +50 cm
 - B) -50 cm
 - C) -110 cm
 - D) +110 cm
 - E) -30 cm

- 3) As a treatment for cataracts (a cloudiness of the lens of the eye), the natural lens is removed and a plastic lens is implanted. After this is done a person can see distant objects clearly, but he cannot accommodate to focus on nearby objects. If for example such a person wanted to read a book at a distance of 25 cm, he would have to wear eyeglasses whose diopter power was approximately
 - A) +2.78 diopters
 - B) +3.33 diopters
 - C) -1.78 diopters
 - D) +4.00 diopters
 - E) -4.00 diopters

- 4) The focal lengths of the objective and eyepiece in a compound microscope are 0.8 cm and 2.5 cm, respectively. The image formed by the objective is 16 cm from it and the final image is 25 cm from the eye. What is the total magnification?
 - A) -19.0
 - B) -11.0
 - C) -2.0
 - D) -100
 - E) -200

- 5) In a compound microscope
- A) both the objective and the eyepiece form real images.
 - B) magnification is provided by the objective lens and not by the eyepiece. The eyepiece merely increases the resolution of the image viewed.
 - C) magnification is provided by the objective and not by the eyepiece. The eyepiece merely increases the brightness of the image viewed.
 - D) The magnification is $m_1 + M_2$, where m_1 is the lateral magnification of the objective and M_2 is the angular magnification of the eyepiece.
 - E) the image of the objective serves as the object for the eyepiece.
- 6) The focal lengths of the objective and the eyepiece in a microscope are 0.29 cm and 2.5 cm, respectively. An object is placed 0.3 cm from the objective. The image of this object is viewed with the eyepiece adjusted for minimum eyestrain. What is the distance between the objective and the eyepiece?
- A) 9.85 cm
 - B) 10.1 cm
 - C) 10.4 cm
 - D) 11.2 cm
 - E) 11.5 cm