Assignment 3

Due on 2023-10-10, 25th HST.

Based on the following discussion, answer questions 1-4:

For the optical system shown in the figure, the focal length of the lenses L1 and L2 are 1 cm and 2 cm respectively. All the distances are in cm. The height of image 2 is 2 cm and that of L1 and L2 is 2 cm.

1. The element that acts as a power driver in the system is ________
   2 points

2. The power of the element ________
   2 points

3. The power of the element ________
   2 points

4. The power of the element ________
   2 points

Based on the following discussion and using the software OSLD, answer questions 9-16:

5. A camera lens has a focal length of 5 cm. It is 20 cm from a subject. The image is 2 cm tall. How far is the subject from the camera?
   2 points

6. What is the value of ‘f’ in this situation? (in cm)
   2 points

7. What is the image distance? (in cm)
   2 points

8. What is the object distance? (in cm)
   2 points

9. What is the image height? (in cm)
   2 points

10. What is the magnification of the system? (in cm)
    2 points

11. What is the field angle of the system? (in degrees)
    2 points

12. What is the depth of field of the system? (in cm)
    2 points

13. What is the aberration of the system? (in cm)
    2 points

14. What is the resolution of the system? (in pixels)
    2 points

15. What is the noise level of the system? (in dB)
    2 points

16. What is the value of ‘f’ in this situation? (in cm)
    2 points