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MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

SECOND TRIMESTER
MAIN EXAM

FOR THE DEGREE
OF
BACHELOR OF OPTOMETRY AND VISION SCIENCE

COURSE CODE: BOV 223

COURSE TITLE: APPLIED OPTICS II

DATE: Wednesday 19/4/2023   **TIME:** 8am to 10am

INSTRUCTIONS TO CANDIDATES
Answer all questions

TIME: 2hrs 30min

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1. You have been provided with the lens and the frame, use it to answer the following questions.
   a. Which type of the lens is it? (1mark)
   b. Measure both the front and back surface and record (2marks)
   c. Measure both centre and edge thickness and record (2marks)
   d. Assume that the lens is a perfect meniscus and has refractive index of 1.532 with your pd being 66mm, find the difference between calculated and measured centre thickness (4marks)
   e. Which conic section was the above lens derived from? (1marks).

2. (b). what's a former? (2marks)

   (c). Describe the steps used in making the former (8marks).

3. Describe the steps you will follow to produce complete fit of a bifocal lens of -2.00 DS add 2.50 DS both eye given that the frame pd is 70mm and the patient pd is 65 with eye wire of 30mm with segment height of patient to frame is 14mm (10marks)

4. You have been provided with set of optometric assorted tools,

   a. list and state the function of each items (10marks)
   b. During frame manipulation, you realize that the frame is not responding to all of the techniques employed, outline some of the reasons that could justify the state (5marks)
   c. Outline the procedure you will use in soldering a broken metallic frame. (5marks)

5. (i) Describe the procedure used in determining the power of lens with prescription of -3.00/-2.00 x 90 using hand neutralization technique (7marks).

   (ii) Discuss the principle used in focimeter construction (3 marks)

   (iii) Using the focimeter describe how you will determine the power of +2.00 with prism of 9^Δ Base down (4marks).

   (iv) The human eye is actually a system of lenses and focusing devices discus. (6marks).