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BRAINWARE UNIVERSITY

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Term End Examination 2025-2026

Programme – B.Optomtry-2021/B.Optomtry-2022/B.Optomtry-
2023/B.Optomtry-2024

Course Name – Ophthalmic Lens & Dispensing Optics-I

Course Code - BOPTOC303

(Semester III)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Name the 1st inventer of split bifocal lens
 - a) Benjamin Franklin
 - b) Morick.
 - c) John Borsch
 - d) None of the this
- (ii) Tell the advantage of Benjamin Franklin's bifocal:
 - a) Large field of view.
 - b) Dust accumulation at dividing line.
 - c) More time and labour required
 - d) None.
- (iii) Select the properties of plastic lenses:
 - a) Heavy
 - b) Not preferred for children
 - c) High impact resistance
 - d) None
- (iv) Identify the test which we use to check the impact registance
 - a) Taber test
 - b) Steel wool test
 - c) Drop ball test
 - d) None of the this
- (v) Choose the correct answer: Abbe value of polycarbonate lens is
 - a) 30
 - b) 40
 - c) 50
 - d) 60
- (vi) Choose the following disadvantages of high index plastic lens
 - a) Cosmetically good
 - b) Magnification is reduced
 - c) Thinner and lighter than other lenses
 - d) Greater distortion
- (vii) Select the correct answer: Spherical equivalent +3.00/-0.50 @ 90
 - a) 2.75
 - b) 3.25
 - c) -2.75
 - d) -3.25
- (viii) Name the Refractive index of Trivex

- a) 1.523
 - b) 1.76
 - c) 1.423
 - d) 1.56
- (ix) Select the temporary marking of PAL
- a) Fitting cross
 - b) micro-etching
 - c) Logo
 - d) add power
- (x) Write the distance between the nasal horizontal indicator and prism references point
- a) 17 mm
 - b) 34 mm
 - c) 17 nm
 - d) 34 nm
- (xi) Which of the following disadvantage of Benjamin Franklin's bifocal:
- a) Less chromatic aberration
 - b) No vertical image jump.
 - c) Dividing line produce reflection.
 - d) All
- (xii) Write the correct answer; In multi design lenses are one, where:
- a) A single design is used for all additional power
 - b) The design changes according to the additional power
 - c) Right and left design are separately
 - d) None
- (xiii) Advantages of soft design lenses are:
- a) More easy to adapt, less peripheral distortion, with long intermediate portion.
 - b) Narrow intermediate zone, shorter distance down to near viewing zone.
 - c) Wider area of stable optics in both distance and near portion.
 - d) None
- (xiv) Name the function of micro-etching in PAL
- a) re-locate the marking
 - b) identify the distance power
 - c) identify the power power
 - d) None.
- (xv) Which of the following term for a material that is comparable to polycarbonate but has better optics and offers clear vision?
- a) Trivex
 - b) PMMA
 - c) HEMA
 - d) All

Group-B

(Short Answer Type Questions)

$$3 \times 5 = 15$$

2. Explain the multi-design of PAL. (3)
3. Describe the Atoric lenses. (3)
4. Describe the executive bifocal? (3)
5. Discuss flat top bifocal with diagram (3)
6. Transpose the following +3.00 DS/ +1.00 DC X 90, Base Curve (BC) -6.00 (3)

OR

Transpose the following +1.00DS / +2.00 DCX 180, Base Curve +6 (3)

Group-C

(Long Answer Type Questions)

 $5 \times 6 = 30$

7. Explain, how will we remove the ghost image from the spectacles lens surface? (5)
8. Explain the polarization lens functioning. (5)
9. Illustrate the temporary marking of Progressive additional lenses with their functions. (5)
10. Solve this equation: A +6.50 D lens before the right eye is decentered 3 mm nasalward. What amount of prism is induced? (5)
11. Solve this--Toric transposition LE: -8.00/-3.50 @ 5 degree, Base curve +6.00 (5)
12. Solve this--Toric transposition RE: +3.00/-4.50 @ 5 degree, Base curve +6.00 (5)

OR

Solve this--Toric transposition LE: -3.00/+3.50 @ 75 degree, Base curve +6.00 (5)