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BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Optomety-2021/B.Optomety-2022

Course Name – Myopia Control

Course Code - BOPTOE608A

(Semester VI)

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) Peripheral hyperopic defocus will be created by which of the following lens powers?
 - a) -2.00 Dsph at the center, -3.00 Dsph at the periphery
 - b) -2.00 Dsp at the center, -1.00 Dsph at the periphery
 - c) -1.00 Dsph at the center, +3.00 Dsph at the periphery
 - d) -3.00 Dsph with aspheric lens design
- (ii) Which of the following statements is not true for astigmatism?
 - a) for any mixed astigmatism, CLC will be on the retina; the spherical equivalent is zero.
 - b) for the spherical equivalent to be zero, the cylinder power needs to be double of the spherical power and of the opposite sign.
 - c) spherical equivalent cannot break the astigmatism and creates a single focus.
 - d) to get the visual benefits from the spherical equivalent power we need to turn any type of astigmatism into mixed astigmatism.
- (iii) MEM finding of +1.00 Dsph means
 - a) the person is exerting more accommodation than is required for that particular distance.
 - b) maybe the rays from the distant object are creating a hyperopic focus.
 - c) the person is over-corrected with minus power.
 - d) the person is unable to exert the required accommodation for a particular distance.
- (iv) A lead of 0.50 dsph in the MEM retinoscopy does not mean
 - a) the person is over-corrected with plus-power.
 - b) the person is exerting more accommodation than is required for that particular distance.
 - c) maybe the rays from the distant object are creating a hyperopic focus.
 - d) the far point of the patient's eye is situated beyond the infinity.
- (v) Which of the following is not true for negative spherical aberration?

- a) paraxial rays create a closer focus from the lens.
b) it may create peripheral hyperopic defocus at the retina.
c) it may create peripheral myopic defocus at the retina.
d) peripheral rays create a distant focus from the lens.
- (vi) The full form of the ATOM Study is
a) Efficacy Results from the Atropine in the Treatment of Myopia.
b) Atropine in the Treatment of Myopia.
c) Efficacy Results from the Atropine in the Treating the Myopia.
d) Atropine in the Treatment of Childhood Myopia.
- (vii) What is the purpose of a pilot study in research?
a) to determine the sample size for the main study.
b) to test the feasibility of research methods and procedures.
c) to establish the statistical significance of the study findings.
d) to recruit participants for the main study.
- (viii) Multifocal contact lenses for myopia control work by:
a) Reshaping the cornea
b) Decreasing the axial length of the eye
c) Inducing peripheral hyperopic defocus
d) Inducing peripheral myopic defocus
- (ix) Which of the following statements is true about Munnerlyn Formula?
a) It applies only to hyperopic corrections in Ortho-K
b) It helps determine the shape of the reverse curve in Ortho-K lenses
c) It predicts the amount of tissue displaced in orthokeratology for myopic correction
d) It is unrelated to Ortho-K and used only in LASIK surgery
- (x) Which type of aberration is associated with off-axis light rays?
a) Spherical aberration
b) Coma aberration
c) Chromatic aberration
d) Curvature of the field
- (xi) A "red" area on a corneal topography map typically indicates:
a) Steep curvature
b) Flat curvature
c) Regular curvature
d) Irregular curvature
- (xii) How often should ortho-K lenses be replaced?
a) Monthly
b) Quarterly
c) Semi-annually
d) Annually
- (xiii) How do atropine eye drops help control myopia progression?
a) By increasing corneal curvature
b) By reducing accommodation
c) By improving tear production
d) By inducing corneal thinning
- (xiv) Which of the following is a potential limitation of multifocal contact lenses for myopia control?
a) They are uncomfortable to wear
b) They are expensive
c) They may cause visual disturbances
d) They are ineffective in slowing myopia progression
- (xv) What is the mechanism of action of atropine eye drops in myopia control?
a) They increase axial length of the eye
b) They reduce scleral rigidity
c) They inhibit eye growth
d) They stimulate accommodation

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Compare Zeiss Myocare and Myocare S lenses. (3)
3. Write a short note on MiSight® contact lenses for myopia control. (3)
4. What are the clinical implications of the Munnerlyn formula in orthokeratology lens design? (3)
5. Emphasize the importance of lifestyle modification and environmental modification for myopia control. (3)
6. Discuss the significance of the negative and positive feedback loops of accommodation. (3)

OR

Write a short note on the importance of the MEM retinoscopy in the myopia work-up procedure. (3)

Group-C
(Long Answer Type Questions)

5 x 6=30

7. Examine the potential side effects and complications associated with cycloplegic agents used in refraction, and how these can be managed in clinical practice. (5)
8. Discuss the effectiveness of Orthokeratology in slowing down the progression of myopia in children and adolescents? (5)
9. Discuss the importance of patient education and communication during the cycloplegic refraction process, including informing patients about potential side effects and the temporary nature of cycloplegia. (5)
10. Write the summary of the Atropine for the Treatment of Childhood Myopia (ATOM) study. (5)
11. Evaluate the role of each curve in a reverse geometry lens and state its significance in achieving effective corneal reshaping. (5)
12. What are the underlying principles behind Orthokeratology in managing myopia progression? (5)

OR

How do lifestyle and environmental factors, such as screen time and outdoor activities, influence the effectiveness of Orthokeratology in managing myopia progression? (5)

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