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Department of Allied Health Sciences
Brainware University
Barasat, Kolkata- 700125

BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Optomety-2022/B.Optomety-2023/B.Optomety-
2024/B.Optomety-2025

Course Name – Ocular Physiology

Course Code - BOPTOC202

(Semester II)

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) Which of the following structures in the eye is responsible for converting light into electrical signals?
 - a) Cornea
 - b) Lens
 - c) Iris
 - d) Retina
- (ii) Which of the following doesn't come under the protective mechanism of the eye?
 - a) Orbit
 - b) Eyelashes
 - c) Eyelid
 - d) Retina
- (iii) How many extra ocular muscles are present in the human eye?
 - a) 4
 - b) 5
 - c) 6
 - d) 7
- (iv) Choose which is the correct secondary action of inferior rectus muscle
 - a) Depression
 - b) Intorsion
 - c) Extorsion
 - d) Elevation
- (v) Pursuit is directed toward.....target.
 - a) Moving
 - b) Stationary
 - c) Both a and b
 - d) None of these
- (vi) Select the correct options from the following where the minimum oxygen tension for normal corneal hydration is
 - a) 10-20mm Hg
 - b) 11-15 mm Hg
 - c) 11-19 mm Hg
 - d) 12-15mm Hg
- (vii) Identify the correct percentage for corneal to transmit visible spectrum
 - a) 1
 - b) 0.8
 - c) 0.9
 - d) 0.7
- (viii) Identify the correct chart name that is used to check color vision.

- a) Ishihara chart
- c) Pelli Robson Chart
- (ix) The structure involved in color vision formation is.
 - a) Parvocellular Pathway
 - c) Superior Colliculi
- (x) Indicate the incorrect statement
 - a) Rhodopsin is the purplish-red protein situated in rods only
 - c) Retinal is the light-absorbing part of visual photopigments
- (xi) Report the main veins draining the choroids is
 - a) Orbital veins
 - c) Posterior ciliary veins
- (xii) The corneal epithelium consists of 3 types of cells, which cells are not part of this layer.
 - a) Superficial cells
 - c) Basal cells
- (xiii) Among the followings which is not a character of lens physical change?
 - a) Increase in lens weight.
 - c) Increase in refractive index.
- (xiv) The volume of aqueous humor in the anterior chamber is
 - a) 0.31 ml
 - c) 0.15 ml
- (xv) The visual cortex lies in the occipital lobe near the
 - a) Posterior pole
 - c) Anterior equator
- b) Snellen chart
- d) Both b and c
- b) Superficial layer 4C of visual cortex
- d) Geniculate layers 1-2
- b) Retinal is a derivative of Vitamin C
- d) The rods in the retina have rhodopsin, a photopigment while cones have three different photopigments
- b) Vortex veins
- d) Central retinal vein
- b) Wing cells
- d) Goblet cells
- b) Decrease of light transmittance
- d) Decrease in light scattering.
- b) 0.26ml
- d) 0.06 ml
- b) Anterior pole
- d) Posterior equator

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. Discuss the biochemical composition of the corneal stroma. (3)
- 3. Write a short note on color vision. (3)
- 4. Draw the relationship between vitamin A and vision. (3)
- 5. Discuss the role of the eyebrow in the protection mechanism of the eye. (3)
- 6. List the layers of the retina from posterior to anterior, along with their physiological significance. (3)

OR

- Compare the biochemical compositions of aqueous humor and tear film. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

- 7. Discuss the structure of the tear film. (5)
- 8. Discuss the factors influencing the dark Adaptation. (5)
- 9. Explain any two types of visual perception. (5)
- 10. Discuss the pre-requisites for Binocular Single Vision. (5)
- 11. Compare Trichromatic theory and Opponent theory of color vision. (5)
- 12. Draw the figure showing the difference in the shape of the lens for distant and near. (5)

OR

- Draw the figure of eye showing the focussing of the rays on the retina. (5)
