REV-01
BOP/15/20

2025/11

SET A

BACHELOR OF OPTOMETRY
THIRD SEMESTER
DISPENSING OPTICS-I
BOP-302

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

(Objective)

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. A cylinder power of -1.00 DCYL x 180 corrects:
   a. Presbyopia b. Hyperopia
   c. Myopia d. Astigmatism

2. During lens neutralization, a plus lens shows:
   a. Against movement b. Scissoring movement
   c. No movement d. With movement

3. A lens with a refractive index of 1.74 will be:
   a. Identical to 1.50 index lenses b. Thinner and lighter
   c. Only used for bifocals d. Thicker and heavier

4. Coma aberration is characterized by:
   a. Circular blur b. Lens cracking
   c. Central blind spots d. Comet-shaped distortion

5. What is the standard vertex distance used during refraction?
   a. 5–7 mm b. 12–14 mm
   c. 18–20 mm d. 22–25 mm

6. How does near PD typically compare to distance PD in bifocals?
   a. Same as distance PD b. 2-3mm less than distance PD
   c. 5-6mm more than distance PD d. 10mm less than distance PD

7. What is the fitting height range for most progressive lenses?
   a. 9-20mm b. 15-25mm
   c. 20-30mm d. 25-35mm

8. Who is credited with inventing the first bifocal lenses?
   a. Isaac Schnaitmann b. August Morick
   c. Benjamin Franklin d. John L. Borsch

9. Crown glass has which of the following properties?
   a. Refractive index of 1.893 b. Abbe value of 59
   c. Contains lead oxide d. Highest chromatic dispersion

10. Photochromatic lenses:
    a. Darken completely inside vehicles b. Provide 100% UV protection
    c. Are only available in glass material d. Don't work in cold weather

11. In progressive lens markings, what does the fitting cross represent?
    a. Near vision center
    b. Distance prescription verification point
    c. Position above the DOC for proper fitting
    d. Hidden manufacturer logo

12. Why might executive bifocals be preferred by accountants?
    a. Large field of view for near work
    b. Lightweight design
    c. Cosmetic appearance
    d. Easy adaptation

13. What is an advantage of hard design progressive lenses?
    a. Wider intermediate area
    b. Better distance vision clarity
    c. More natural peripheral vision
    d. Easier adaptation for first-time wearers

14. What is a key advantage of progressive lenses over trifocals?
    a. Lower cost
    b. Gradual power change without visible lines
    c. Better for night driving
    d. Thinner lens profile

15. What is the primary purpose of anti-reflection coating on lenses?
    a. To change the lens color
    b. To reduce reflection and increase light transmission
    c. To make lenses thicker
    d. To increase the refractive index

16. What is a disadvantage of surface-coated tints?
    a. They can't be applied to glass lenses
    b. They are permanent and unchangeable
    c. The tint fades with time
    d. They make lenses heavier

17. In a bifocal lens, the jump is caused by:
    a. The difference in refractive index between distance and near portions
    b. The change in optical center position between distance and near segments
    c. The curvature of the bifocal segment edge
    d. The thickness variation across the lens

18. Which tint color would be most suitable for a tennis player on a cloudy day?
    a. Gray
    b. Brown/amber
    c. Yellow
    d. Blue

19. How should an optician address glare-related headaches?
    a. Adjust frame size
    b. Prescribe anti-glare coating
    c. Replace lenses with glass material
    d. Tighten nose pads

20. Why should glasses never be placed lens-down?
    a. To prevent hinge damage
    b. To avoid lens scratches
    c. To reduce frame bending
    d. To maintain anti-glare coating

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(Descriptive)

Time : 2 hr. 30 mins. Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain Pantoscopic Tilt with diagram and describe Back Vertex Distance with example and diagram. 5+5=10

2. Explain the different parts of a spectacle frame with a clear and neatly labeled diagram. 10

3. What is the full form of CR-39 and what is the meaning of CR-39. Write about identification of convex lens. Write the difference between Bifocal and Progressive lens. 2+3+5=10

4. Write short notes about: 5+5=10
   a) Polycarbonate Lens
   b) Photochromatic Lens

5. Discuss with diagram marking of Progressive addition Lens and write the difference between glass and Plastic lens. 5+5=10

6. Explain in Detail with diagrams types of bifocal Lens. 10

7. Depending upon the sports and activities, explain classification of tint. 10

8. How to handle patients after using spectacles if patient feeling headache. Write about the advantages of Anti Reflection Coating. 5+5=10

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