

ASSIGNMENT 3

Material Covered:
***Units 2.1, 2.2 and 2.3 of Module 2
of the IACLE Contact Lens Course***

ASSIGNMENT 3

Read the questions carefully and record your answers on the answer sheet provided.

1. **According to Holden and Mertz (1984), what should the transmissibility of an extended wear contact lens be to limit or prevent corneal oedema?**
 - a. $Dk/t = 24 \times 10^{-9}$
 - b. $Dk/t = 24 \times 10^{-11}$
 - c. $Dk/t = 87 \times 10^{-9}$
 - d. $Dk/t = 87 \times 10^{-11}$

2. **A patient has a spectacle refraction of -9.00 D at a vertex distance of 14 mm. If we wanted to fit this patient with contact lenses, what back vertex power (BVP) would be required for the contact lens?**
 - a. -8.00 D
 - b. -8.75 D
 - c. -9.50 D
 - d. -10.00 D

3. **Who is said to be the first person to describe the concept of a “contact” lens?**
 - a. René Descartes
 - b. Leonardo da Vinci
 - c. Otto Wichterle
 - d. Carl Zeiss

4. **Which method of manufacture is normally used for low volume production and custom-made soft contact lenses?**
 - a. Cast molding
 - b. Spin casting
 - c. Wet molding
 - d. Lathe cutting

5. **A patient is wearing a rigid gas permeable trial contact lens with the following parameters:**
BOZR = 7.75 mm
Total diameter = 9.30 mm
BVP = -6.50 DS
Evaluation of the lens on the eye with fluorescein shows slight central pooling, so you decide to order a new lens of the same diameter, that is 0.05 mm flatter. What should the BVP of this new lens be?
 - a. -6.00 D
 - b. -6.25 D
 - c. -6.75 D
 - d. -7.00 D

6. **Which of the ocular complications below does NOT occur as a result of contact lens-induced hypoxia?**
 - a. Endothelial blebs
 - b. Epithelial microcysts
 - c. Superior epithelial arcuate lesions
 - d. Endothelial polymegethism

- 7. Which statement regarding the assessment of the wettability of contact lens materials is NOT true?**
- In the sessile drop method, a large contact angle indicates poor wettability
 - In the Wilhelmy plate method, the receding angle is greater than the advancing angle
 - In the sessile drop method, the advancing angle is determined by adding more water
 - In the captive bubble method, air is introduced under a lens in a wet cell
- 8. Who is credited with having conceived the idea of a “throw away lens”?**
- Orlando A Battista
 - Normal O Stahl
 - John de Carle
 - Thomas Young
- 9. Which of the following statements regarding rigid bifocal contact lenses is NOT true?**
- An implanted segment bifocal is an example of a translating lens
 - In a progressive addition lens, the near addition increases with increasing displacement from the centre of the lens
 - Due to the alternation of powers in a diffractive lens, it is very much dependent on pupil size
 - Concentric bifocals are made using conventional lathing or molding techniques
- 10. A myope transferring from spectacles to contact lenses will use:**
- More accommodation and less convergence
 - More accommodation and more convergence
 - Less accommodation and more convergence
 - Less accommodation and less convergence
- 11. Which statement regarding soft hydrogel lenses is NOT true?**
- Higher water content materials have a lower refractive index than their low water content counterparts
 - A lens stored in a hypertonic solution will show a reduction in water content
 - The lens water content decreases as the pH of the surrounding medium becomes more alkaline
 - Thin low water content lenses are less likely to cause pervaporation staining than thin high water content lenses
- 12. A patient is wearing an RGP trial lens has a BOZR of 8.00 mm and a BVP of +8.00 DS, which accurately compensates for his refractive error. The lens shows an apical touch fluorescein pattern on the patient’s eye, so you decide to order a final lens of the same overall diameter, but with a BOZR of 7.90 mm. What should the BVP of this final lens be?**
- +7.50 D
 - +7.75 D
 - +8.25 D
 - +8.50 D
- 13. Theoretically, contact lenses may be contra-indicated in cases of:**
- Irregular astigmatism
 - Axial anisometropia
 - Oblique astigmatism
 - Refractive anisometropia

14. Which of the following statements is NOT true?

- a. Hyperopes experience a smaller image size with contact lenses than they do with spectacles of equivalent power
- b. Spectacle magnification is the ratio of the retinal image sizes in an ametropic eye in the corrected and uncorrected state
- c. Image size in an optical system is directly proportional to the focal length of the system
- d. In myopia, the contact lens focal length is shorter than the equivalent spectacle focal length

15. The Dk value of a 40–55% water content hydrogel lens, measured through the coulometric technique at a temperature of 34°C, would be approximately:

- a. 5 – 8
- b. 7 – 19
- c. 18 – 28
- d. > 50

16. A patient has a spectacle refraction of –11.00 DS at a vertex distance of 14 mm. He is fitted with a trial contact lens with a back vertex power (BVP) of –5.00 D, and the over-refraction is –6.00 D. What BVP should be ordered for the final contact lens?

- a. –9.50 D
- b. –10.00 D
- c. –10.50 D
- d. –11.50 D

17. Which statement regarding Siloxane Acrylate (SA) materials for RGP lens manufacture is NOT true?

- a. Relatively 'hard' surfaces that do not scratch easily
- b. Low rigidity may cause flexure problems
- c. Susceptible to surface 'burning' during manufacture
- d. Surface charge and surface chemistry make them more deposit prone

18. A patient has a spectacle refraction of +8.00 D at a vertex distance of 14 mm. If we wanted to fit this patient with contact lenses, what back vertex power (BVP) should be ordered?

- a. +7.25 D
- b. +7.75 D
- c. +8.50 D
- d. +9.00 D

19. According to Holden and Mertz (1984), how much oxygen is needed through daily wear contact lenses to limit or prevent corneal oedema?

- a. 5.7%
- b. 9.9%
- c. 13.4%
- d. 17.9%



20. Which of the following statements is NOT true?

- a. Spectacle wearing hyperopes accommodate more than spectacle wearing myopes
- b. With contact lens wear, the accommodation required in ametropia is approximately the same as for an emmetrope
- c. If a myope is switched from spectacles to contact lenses the need for a near vision correction may be postponed
- d. The accommodative demand of a hyperope is greater with spectacles than with contact lenses