

BINDURA UNIVERSITY OF SCIENCE EDUCATION  
FACULTY OF SCIENCE & ENGINEERING  
DEPARTMENT OF OPTOMETRY  
BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY

NOV 2024

OPT401: CONTACT LENS CLINIC III  
DURATION: 3 HOURS

TOTAL MARKS: 100

CANDIDATE NUMBER:

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**INSTRUCTIONS:**

- This paper contains 2 (two) sections.
- Answer all 20 Multiple choice questions in section (1) on this paper (more than one answer is possible)
- And any three questions in Section two (2) (each on a separate page) in the Examination Booklet.

**SECTION (1) ANSWER ALL QUESTIONS (2 MARKS)**

1. Which statement best describes scleral or corneal contact lenses?
  - (a) These are optical devices which are used for refractive error correction only.
  - (b) They are optical devices that sit on the cornea for vision only.
  - (c) They are lens put on cornea for either optical, therapeutic or cosmetic purposes.
  - (d) They are special spectacles mainly used for cosmetic purposes only.
2. Which are the most common characteristics of polymethyl methacrylate contact lenses?
  - (a) That they have a very low DK value.
  - (b) That they have stable optical properties.
  - (c) That they have poor wettability and negligible oxygen transmissibility.
  - (d) All the above.
3. What were the fitting concepts of the original Touhy contact lenses?
  - (a) ~~They were fitted to cover the whole corneal surface.~~
  - (b) They were single curve lenses mostly fitted flatter than the corneal shape.
  - (c) Differences in corneal shape were irrelevant when doing the fitting.
  - (d) All of the above.

4. What are the typical clinical signs of Sattler's veil as seen on the slit lamp?
- (a) Punctate epithelial keratitis.
  - (b) Band keratopathy.
  - (c) Corneal oedema showing a grey epithelial haze in the center.
  - (d) None of the above.
5. When fitting scleral lenses which should be the most ideal fit?
- (a) The optic section should align on the sclera.
  - ~~(b) The haptic section should align on the sclera.~~
  - (c) The optic section should align on the cornea and disregarding the haptic section.
  - (d) The deal alignment for the optic and haptic sections should be cornea and sclera respectively.
6. Which statement best describes the use of therapeutic contact lenses?
- ~~(a) They are used correction of refractive error such as aphakia, myopia and hypermetropia.~~
  - (b) They are best used for correction of irregular astigmatism and anisometropia.
  - (c) They are best used for correction of keratoconus, nystagmus, amblyopia and aniridia.
  - (d) They are best used for correction of aphakia and pseudophakia only.
7. Which are the most essential requirements for contact lens fitting routine?
- (a) Contact lens trial fitting sets.
  - (b) The slit lamp and the keratometer.
  - (c) The Burton lamp, Placido disc and fluorescein dye.
  - (d) All of the above.
8. Which statement is true of Sattler's veil?
- (a) It is the reaction of the cornea to hypoxia.
  - (b) It is characterized by central epithelial oedema.
  - (c) The typical symptoms are increased glare and haloes.
  - (d) All of the above.
9. What were the basic contact lens specification when ordering the original corneal lens?
- (a) Only the lens power and the overall diameter were necessary.
  - (b) Only the lens power and the center thickness were necessary.
  - (c) Only the lens power and the DK value were necessary.
  - (d) Only the DK value and the overall diameter were necessary.

10. Which statement is not true of the Fluorescein dye used in contact lens practice?
- (a) It is also referred to as Sodium Fluorescein and used to assess lens fit.
  - (b) It is mainly to observe the cornea for adverse effects related to contact lens use.
  - (c) It is used with a combination of cobalt blue and high intensity light on the slit lamp.
  - (d) It mainly used to observe the reaction of the conjunctiva to contact lens wear.
11. Which statement is true of the Rose Bengal dye used in contact lens practice??
- (a) It is normally found as a red liquid used to assess the cornea.
  - ~~(b) It is mainly used to observe the effects of contact lens use on the conjunctiva.~~
  - (c) It is best used with white light of low intensity illumination on the slit lamp.
  - (d) All of the above.
12. Which statement least describes Lissamine Green dye used in contact lens practice?
- (a) It is normally found as a green liquid and usually packaged in minims.
  - ~~(b) It is best used to investigate the effects of contact lens wear on the conjunctiva.~~
  - (c) It is best used with a cobalt blue light of low intensity on the slit lamp.
  - (d) A 1 % solution is used in both eyes and viewed under white light of low intensity.
13. Which statement describes the best use of corneal topography in contact lens practice?
- (a) It is very significant in pre-evaluation of the cornea.
  - ~~(b) It is significant in identifying irregular astigmatism after corneal transplant.~~
  - (c) It is significant in monitoring corneal disease progression.
  - (d) All of the above.
14. Which statement describes the best characteristic of the Placido disc?
- (a) It is based on the principle of corneal reflections from bright light (Purkinje images).
  - (b) It covers a wider angle such that the peripheral mires appear defocused.
  - (c) It is a qualitative assessment of the cornea indicating gross changes only.
  - (d) All of the above.
15. Which statement best describes contact lens use of the Bausch and Lomb keratometer?
- (a) It is a one position instrument that gives the exact shape of the cornea.
  - (b) It is a two-position instrument that gives the exact shape of the cornea.
  - (c) It is a one position instrument that gives the exact shape of the cornea and lens.
  - (d) It is a two-position instrument that gives the exact shape of the cornea and lens.

16. Which corneal shape is indicated by red and orange topographical colours?
- (a) The red and orange are described as 'hot' which signifies corneal steepness.
  - (b) The red and orange are described as 'hot' signifying normal corneal shape.
  - (c) The red and orange are described as 'hot' signifying a flatter than normal cornea.
  - (d) The red and orange are described as 'hot' signifying an astigmatic cornea.
17. Which statement best describes the best use of the slit lamp in contact lens practice?
- (a) It is used to assess the eyelids, the cornea and the sclera before contact lens fitting.
  - ~~(b) It is for assessing the fitting profile of a contact lens together with fluorescein dye.~~
  - (c) It is useful in monitoring corneal contraindications due to contact lens use.
  - (d) All of the above.
18. Which statement describes best use of slit lamp bio-microscopy in contact lens?
- (a) Diffuse illumination is principally used for external eye examination.
  - ~~(b) A cobalt blue filter is mainly used with fluorescein to assess the fit of a contact lens.~~
  - (c) Specular reflection is used to assess the tear film evaluating corneal thickness only.
  - (d) All of the above.
19. What are the typical signs and symptoms due to prolonged contact lens use?
- (a) Hypoxia in soft contact wear leading to vascular encroachment.
  - ~~(b) Epithelial trauma caused by antiseptics remaining after an inadequate cleaning cycle.~~
  - (c) Epithelial necrosis due to chemical trauma leading to reduced visual acuity.
  - (d) All of the above.
20. Which statement is true of protein deposits on contact lenses?
- (a) It is possible to have protein deposits both hard and soft contact lenses.
  - (b) They cause punctate epithelial staining as shown with Rose Bengal dye.
  - (c) Alcohol can be used on hard or soft contact lenses to remove some protein.
  - (d) Once protein is found on the lens the best is to discard the lenses.

**SECTION (2): ANSWER ANY THREE QUESTIONS**

1. A slit lamp is a very valuable diagnostic instrument used by an optometrist. Discuss its use in a contact lens practice. **[20 MARKS]**
2. Corneal topography is significant in contact lens practice. Discuss the various types of equipment used to perform this procedure and the results that are obtained. **[20 MARKS]**
3. (a) Discuss the two main types of Keratometers indicating the main advantages and disadvantage of each and (b) Discuss keratometry in relation to its uses in contact lens routine. **[20 MARKS]**
4. A badly fitted contact lens or prolonged contact lens wear can cause complications. Discuss some of the commonest complications related to these two situations. **[20 MARKS]**

**END OF PAPER**