

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

CANDIDATE NUMBER:

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OPTC210. CONTACT LENS CLINIC I

TIME 3 HOURS

JUN 2025

(100 Marks)

INSTRUCTIONS:

- This paper contains 2 (two) sections.
- Answer all 20 questions in section (1) on this paper and all 4 questions in Section two (2) in the Examination Booklet. Set your answers on separate sheets.

SECTION (1) ANSWER ALL QUESTIONS (1 MARK EACH)

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 devices placed on the 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 of 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) The corneal shape differences 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 optic and haptic sections should align on the cornea and the sclera respectively.

6. Which statement best describes the use of therapeutic contact lenses?
 - (a) They are for correction of aphakia, myopia and hypermetropia.
 - (b) They are for correction of irregular astigmatism and anisometropia.
 - (c) They are 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 used to observe the cornea for adverse effects related to contact lens use.
 - (c) It is used with 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 is the best description 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 is the best description 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 for assessing eyelids, cornea and 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 is the best description of slit lamp bio-microscopy in contact lens practice?
- (a) Diffuse illumination is principally used for external eye examination.
 - (b) A cobalt blue filter is used with fluorescein for assessment of contact lens fit.
 - (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 of prolonged contact lens use?
- (a) Hypoxia due to soft contact wear leading to vascular encroachment.
 - (b) Epithelial trauma due to residual antiseptics 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 ALL FOUR QUESTIONS

1. Discuss slit lamp bio-microscopy in contact lens practice. **[20 MARKS]**
2. Corneal topography is essential 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 common types of Keratometers indicating the main advantages and disadvantage of each and (b) the significance of keratometry in contact lens routine. **[20 MARKS]**
4. Ocular complications can occur in contact lens practice. Discuss such complications due to (i) badly fitted contact lenses and (ii) prolonged use of contact lenses. **[20 MARKS]**

END OF PAPER