

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE & ENGINEERING

DEPARTMENT OF OPTOMETRY

BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY

OPTC306: CONTACT LENS CLINIC II

DURATION: 3 HOURS

NOV 2024

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 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.
2. 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.
3. 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 the above.

4. Which statement describes the best contact lens use of slit lamp bio-microscopy?
- (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.
5. Which statement best describes 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 placed on the cornea for either optical, therapeutic or cosmetic purposes.
 - (d) They are special spectacles mainly used for cosmetic purposes only.
6. Which characteristics are peculiar to polymethylmethacrylate 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.
7. Which best materials would one expect when choosing scleral contact lenses?
- (a) Fluoro-silicone acrylate and high DK value materials.
 - (b) Hydrogel and silicone hydrogel lens materials.
 - (c) Polymethylmethacrylate and silicone hydrogel lens materials.
 - (d) Gas permeable and hydrogel lens material.
8. Which is the best design of choice in pediatric contact lens practice?
- (a) Scleral lenses of high DK value.
 - (b) Silicone hydrogel corneal lenses.
 - (c) Polymethylmethacrylate corneal lenses.
 - (d) Hybrid lenses of low DK value corneal lenses.
9. When fitting scleral lenses which should one consider most?
- (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) Alignment should be optic and haptic section on the cornea and sclera respectively.
10. Which is the best way to fit scleral lenses on an adult?
- (a) Patient facing down and approach from below with a lens filled with an isotonic fluid.
 - (b) Patient facing down and approach from below with a lens filled with a hypotonic fluid.
 - (c) Patient facing down and approach from below with a lens.
 - (d) Patient facing upwards and approach the cornea with a lens full of an isotonic fluid.

11. 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.
12. 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.
13. What were the basic contact lens specifications 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.
14. 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 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.
15. 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.
16. 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.

17. Which statement is true of complications due to prolonged contact lens use?
- (a) Hypoxia is typical in soft contact lens wear causing vascular encroachment.
 - (b) Chemical trauma of the epithelium can be due to antiseptics in cleaning solutions.
 - (c) Epithelial necrosis due to chemical trauma usually causes reduced visual acuity.
 - (d) All of the above.
18. Which statement is true of protein deposits on contact lenses?
- (a) Both hard and soft contact lenses are likely to have protein deposits.
 - (b) The deposits generally cause punctate epithelial staining with fluorescein.
 - (c) Alcohol can only be used on hard contact lenses to remove some protein.
 - (d) All of the above.
19. Which statement describes the best use of corneal topography in contact lenses?
- (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.
20. 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 indicating gross changes only.
 - (d) All of the above.

SECTION (2): ANSWER ANY THREE QUESTIONS

1. (a) Define keratometry and (b) Relate the different two different types of keratometers highlighting the major difference and their use in contact lens practice. **[20 MARKS]**
2. An 18- year lady patient visits you wearing an old set of spectacles with a prescription as follows: -
Right eye -6.00 DS
Left eye -5.5DS
She is a keen squash player of which she plays 3 times a week for 1 hour after work as a hobby. Work out the suitable contact lens material for her sport the trial lens parameters you would start with. **[20 MARKS]**
3. A slit lamp is a very valuable diagnostic instrument used by an optometrist. Discuss its use in a contact lens practice. **[20 MARKS]**
4. 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]**

END OF PAPER