

[LJ 1016]

OCTOBER 2016

Sub. Code: 1604

**M. OPTOM DEGREE EXAMS
FIRST YEAR
PAPER IV – CONTACT LENS - I**

Q.P. Code: 281604

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. A 20 year old male has a refractive error of Od; -5.00/-0.5*180, os: -5.00/-2.75*140. Give an example of K reading for this refraction if it is a corneal astigmatism. Explain different lens options for this patient with their advantages and disadvantages. Justify and give your final lens fitting and prescription for this same case.
2. Explain each preliminary examination required in a contact lens fitting and their significance.

II. Write notes on:

(10 x 6 = 60)

1. What is the relation between sagittal depth and base curve explain with diagram?
2. Explain different manufacturing techniques their advantage and disadvantage.
3. Explain role of tear lens in RGP fitting with examples of spherical and astigmatic cornea and fluorescein patterns.
4. Explain different stages of corneal edema due to hypoxia.
5. A simple myopic presbyope can post pone the reading rx for some years than a hyperope! Is it true? Justify.
6. What are the steps involved in toric soft lens fitting? List different types of toric lens designs.
7. Explain the parameters of materials that are directly involved with the oxygen permeability.
8. What are the four paths of oxygen delivery to the cornea during open and closed eye condition? What is EOP? Explain DK and DK/L.
9. Define the term residual astigmatism with regards to spherical contact lens in place. Give four possible causes of induced residual astigmatism.
10. What factors determine the movement of a soft contact lens?

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I. Elaborate on:

(2 x 20 = 40)

1. Explain the steps involved before, during and after fitting a rigid contact lens to a patient.
2. For the following case examples, tabulate a) Your lens of choice b) Why you chose this lens, c) Calculate 1st trial lens base curve/diameter/power/ optic zone diameter, considering a vertex distance of 12mm, dilated pupil size 6mm, corneal diameter 11mm.
Case 1: Ms. A, spectacle Rx OD: +4.50DS, K readings 46.00 @ 90 & 46.50 @ 180.
Case 2: Mr. X, spectacle Rx OS: -3.00DS/-1.00DC x 180, K readings 45.00 @ 90 & 44.00 @ 180.
Case 3: Mr. L, spectacle Rx OD: -4.00DS /-2.50DC x 90, K readings 47.00 @ 180 & 44.00 @ 90.
Case 4: Ms. Y, spectacle Rx OS: -3.00DS/-1.50DC x 180, K readings 45.00 @ 90 & 45.00 @ 180.

II. Write notes on:

(10 x 6 = 60)

1. Define “tear lens”. Write about the role of tear film and tear lens in soft and rigid contact lens fitting.
2. Explain why thickness is an important design feature in the selection of
a) soft CL & b) RGP CL.
3. What is a contact lens care system? Write about the various ingredients and their actions.
4. Write about RGP contact lens manufacturing techniques.
5. Explain about the effect of contact lens on corneal nutrition, metabolism and hydration dynamics.
6. What are the characteristics of an ideal fitting RGP contact lens on a) spherical cornea, and b) toric cornea? Explain with diagrams.
7. Name few RGP materials. Write about the advantages and disadvantages of RGP CLs.
8. Explain the rigid contact lens insertion and removal techniques.
9. Silicone hydrogel contact lenses – properties, advantages and disadvantages.
10. Define the parameters sagittal depth, total diameter and base curve. Explain the relationship between them with diagrams.

[LL 1017]

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Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain steps in pre fitting and assessment of fitting in a soft contact lens in a patient with refraction of od;-8.00/-2.00* 180 os:- 5.00ds.
2. Explain in detail indication and contraindication of different contact lenses.

II. Write notes on:

(10 x 6 = 60)

1. Explain the relationship between sag, base curve and diameter and their rule of thumb with examples.
2. List the indications/partial indications and precautions, and contraindications of contact lens in detail.
3. Explain required detailed history taking in new contact lens patient.
4. Explain different manufacturing of soft lenses and their advantage and disadvantage.
5. Diagrammatically explain fluorescein pattern and fit assessment in spherical rgp lens.
6. List the characteristics of steep and flat soft lens.
7. Explain with diagram fitting in spherical cornea and 4 Diopter toric cornea with a spherical RGP lens.
8. Explain special instructions required while dispensing soft contact lens.
9. Explain different stages of corneal edema during hypoxia. Explain sources of oxygen for cornea during closed and open eye conditions.
10. Explain advantage and disadvantage of different manufacturing techniques used in contact lens.

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I. Elaborate on:

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1. Explain characteristics of flat and steep rgp lens with example and their modification with rule of thumb with simple myopic, simple myopic astigmatism and hyperopic prescriptions and assumed K reading, HVID of 11.5 mm.
2. What is the recommended lens for a patient who is 23 years female, who performs works for 12 hours and having power of -5.00ds/2.00X90 in both eyes? Patient gives a history of trying different soft and toric lenses which led to allergy and papillae. Explain the fitting procedure of the chosen lens type and give final prescription.

II. Write notes on:

(10 x 6 = 60)

1. State the differences between rigid material and soft hydrogel material from the early materials to those available now a days.
2. Explain the relationship between sag, base curve and diameter and their rule of thumb with examples.
3. Explain methods of contact lens fit assessment in soft, spherical rgp and toric soft lens.
4. List special instructions for dispensing a RGP lens for a patient. List the points required in teaching.
5. Explain corneal anatomy and in relation to contact lens.
6. Explain functions of tear film and their properties. Explain different layers of tear film and their secretion.
7. List the investigations required before contact lens fitting.
8. Explain characteristics of flat and steep rgp lens with example and their modification with rule of thumb.
9. What is wettability of lens what are the advantage of low and high water content lens? Give examples of cases in which you will prescribe them.
10. Explain slit lamp examination methods for contact lens practice.
