

**Second Year B. Optometry Examination
Basic Optics**

Date : 21-01-2019, Monday]

[Max. Marks : 80

[Time : 3 Hours

- Instructions :** (1) Answer to the point.
 (2) Figure to the right indicates marks.
 (3) Draw diagrams wherever necessary.
 (4) Write legibly.
 (5) Use separate answer books for each section.

Section A

Q.1 Do as Directed

10 marks

A Fill in the blanks

5 marks.

1. 4 PD base out can be divided into 2PD base out in right eye and _____ in left eye.
2. _____ and _____ example of Anti-reflection coating (trade name)
3. Specific gravity of CR 39 lens material is _____
4. Image jump of Executive Bifocal is _____
5. Oblate Aspheric Lens means _____

B. True or False (Please correct statement if false)

5 marks

1. The limbal edge may be used as a reference point in taking monocular PD.
2. HMS is used to measure the pupillary distance
3. Yellow tint is due Kalichrome H metallice oxide in solid integral tint.
4. Distometer instrument is used to check the vertex distance.
5. Segment Inset means difference between IPD and NPD

Q.2 Answer in detail (Any Five)

Marks 30

1. Write a note on Interpupillary distance? Uses and its significance
2. Explain construction of Anti-reflection coating with diagram
3. Methods to inspect the quality of ophthalmic lenses and its significance
4. Steps of Lenometer neutralization of sphero/cylinder lens and its axis marking, $R_x = -1.00/+1.25 \times 100$
5. Difference between a) Dying plastic lens and solid glass tinted lens
 b) Polarised And Photochromatic lens
6. Perform Toric Transposition
 a) $+5.00 / -5.00 \times 70$ Base Curve $+8.00$
 b) $+2.00 \times 180, +1.00 \times 90$ Base Curve $+6.00$

P.T.O.

0119E564 (2)

Section B

Q.3. Do as Directed

10 marks

A. Fill in the blanks

5 Marks

1. For crown glass, Brewster's angle is _____.
2. Rowing ring scotomas experienced in aphakic spectacle is also known as _____.
3. Lenses used in trial boxes are known as _____ form lenses.
4. Modified form of franklin bifocal was _____ and it was invented by august mork in 1888.
5. Refractive index of Fresnel prism is) _____

B. Explain the following

5 Marks

1. Frontal Angle
2. Make up spectacles
3. Prentice Rule
4. List different types of Aberration in Ophthalmic lenses
5. Back vertex Power

Q.4. Answer in detail (Any five)

30 Marks.

1. Explain difference between Standard Single vision and Aspheric Single vision lenses
 2. Draw a labeled diagram explaining retinal image in corrected and uncorrected ametropia.
 3. If Patient having Distance Prescription = $-4.00/-2.00 \times 180$, Near Add = $+2.50$, Find Intermediate add, Near Power and Intermediate Power.
 4. Spectacle Rx = -5.00 Dsph, at a vertex distance of 12 mm from corneal plane. Find contact lens power and also find the ocular refraction and ocular accommodation at near object 40 cm.
 5. Steps of Troubleshooting in Progressive addition lenses?
 6. Explain how you do marking and measurement in Bifocal lenses
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Second Year B. Optometry Examination
Pharmacology & Nutrition

Date : 23-01-2019, Wednesday]

[Max. Marks : 80

[Time : 3 Hours

- Instructions :
- (1) Answer to the point.
 - (2) Figure to the right indicates marks.
 - (3) Draw diagrams wherever necessary.
 - (4) Write legibly.
 - (5) Use separate answer books for each section.

Section A

Q1. Choose the correct answer:

10 marks

- 1) All of the following are examples of phase I biotransformation except:
 - a) Hydrolysis
 - b) Acetylation
 - c) Oxidation
 - d) Reduction
- (2) All of the following routes of administration avoid "first-pass" hepatic effects EXCEPT:
 - a) sublingual
 - b) oral
 - c) transdermal
 - d) Intravenous
- (3) All of the following are Prodrugs, EXCEPT:
 - a) Levodopa
 - b) Sulindac
 - c) Becampicillin
 - d) Diclofenac
- (4) Receptors are usually:
 - a) Lipids
 - b) proteins
 - c) DNA
 - d) Carbohydrate

P.T.O.]

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- (5) Oral route :
- Economical
 - ease of administration
 - safe
 - suitable for emergency
- (6) .All the factors affect bioavailability of drugs given by the ocular route EXCEPT:
- Melanin binding of drugs
 - Residence time
 - Lipid solubility
 - Nasolacrimal drainage
- (7) The major route of drug absorption across the eye is:
- Transcorneal
 - Transconjunctival
 - Nasolacrimal
 - Transscleral
- (8) Prostaglandin analogs are useful in glaucoma because they:
- Increase drainage through canal of sclemmn
 - Dilate the pupil
 - Enhance uveoscleral outflow
 - Enhance the minor pathway of aqueous humor drainage
- (9) The drug which is given topically to decrease intraocular pressure :
- Tropicamide
 - pilocarpine
 - brinzolamide
 - atropine
- (10) The drug which can cause crystalluria
- Penicillin
 - sulphonamide
 - insulin
 - Pilocarpine

Q2.SHORT NOTES

(ANY FIVE)

(5X 6=30 MARKS)

- Uses of atropine in the eye
- Antiallergic agents
- Factors affecting ocular bioavailability
- Tetracyclins -uses and adverse effects.
- Protein energy malnutrition
- Vitamins and cardiovascular diseases

SECTION -B

40 MARKS

Q.3. Choose the correct answer:

10 marks

1. All of the following drugs can be used in narrow angle glaucoma EXCEPT:
 - a) Physostigmine
 - b) Mannitol
 - c) Cyclopentolate
 - d) Dorzolamide

2. The drug useful in allergic conjunctivitis is:
 - a) Glyceryltrinitrate
 - b) Diclofenac
 - c) Olopatidine
 - d) Tetracycline

3. The most dangerous complication of contact lens use is:
 - a) Corneal abrasion.
 - b) Infective conjunctivitis
 - c) Giant papillary conjunctivitis
 - d) Iritis

4. The antimicrobial linked to irreversible hearing loss is:
 - a) Aminoglycosides
 - b) cephalosporins
 - c) chloroamphenicol
 - d) amoxicillin

5. Drug of choice for typhoid
 - a) Penicillin-G
 - b) Tetracycline
 - c) Ciprofloxacin
 - d) Gentamicin

6. The drug producing constriction of pupil and spasm of accommodation:
 - a) Phenylephrine
 - b) Physostigmine
 - c) Latanoprost
 - d) timolol

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7. The tetracycline with the longest duration of action is

- e) oxytetracycline
- f) chlortetracycline
- g) minocycline
- h) demeclocycline

8. A drug which is not given orally as it is not absorbed by GIT

- a) Gentamicin
- b) Levofloxacin
- c) Cefixime
- d) Amoxicillin

9. An antimicrobial which is safe in pregnancy

- a) Sulphonamide
- b) Ceftriaxone
- c) Tetracyclines
- d) Gentamicin

10. Protein synthesis inhibitor which is bacteriostatic

- a) Erythromycin
- b) Doxycycline
- c) Chloramphenicol
- d) All of the above

Q.4. SHORT NOTES (ANY FIVE)

(5X 6=30 MARKS)

- I. Uses and adverse effects of fluoroquinolones
 - II. Cycloplegic Mydriatics
 - III. Local anaesthetics
 - IV. Drug therapy of acute congestive glaucoma
 - V. Management of dry eye
 - VI. Therapy for bacterial conjunctivitis
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Second Year B. Optometry Examination
Pathology & Microbiology

Date : 25-01-2019, Friday]

[Time : 3 Hours

Instructions : (1) Answer to the point.

(2) Figure to the right indicates marks.

(3) Draw diagrams wherever necessary.

(4) Write legibly.

(5) Use separate answer books for each section.

SECTION I

1 Short Questions :

- (a) Define Anemia
- (b) What are the causes of Nutritional Anemia?
- (c) Mention causes of raised ESR
- (d) What is the normal range of WBC count in normal adult?
- (e) What are the causes of increase in eosinophils?
- (f) What is leukemia?
- (g) What are the causes of decrease in platelet count?
- (h) What is hemophilia A?
- (i) Enumerate causes of proteinuria
- (j) Which are the causes of glycosuria?

2 Write short notes (any 5 out of 6) :

- (a) Thrombosis
- (b) Vitamin-A deficiency-Ocular changes
- (c) Retinoblastoma
- (d) Pathophysiology and diagnosis of glaucoma
- (e) Eye in hypertension
- (f) Microscopic examination of urine.

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SECTION II

Q3. Choose the correct answer.

1. Inhibition of phagocytosis is a function of
 - a. Flagella
 - b. Capsule
 - c. Cell wall
 - d. Fimbriae
2. Principle of autoclave is -
 - a. Boiling
 - b. Steam at atmospheric pressure
 - c. Steam under pressure
 - d. Drying
3. Antibody which is able to cross placenta and provide nature passive immunity is
 - a. Ig G
 - b. Ig M
 - c. Ig A
 - d. Ig D
4. Part of innate immune response are all EXCEPT
 - a. Complement system
 - b. Macrophage
 - c. N-K cell
 - d. Helper T cell
5. Cytokine produced by Macrophage is
 - a. IL-1
 - b. IL-2
 - c. IL-3
 - d. IL-4
6. Extracellular infectious particle of Chlamydia is called as
 - a. Elementary body
 - b. Reticulate body
 - c. Inclusion body
 - d. Medlar body
7. Part of normal flora of conjunctiva is
 - a. Pseudomonas aeruginosa
 - b. Hemophilus aegypticus
 - c. Candida albicans
 - d. Corynebacterium xerosis
8. Predisposing condition for development of fungal keratitis are all EXCEPT
 - a. Corticosteroid therapy
 - b. Anemia
 - c. Injury
 - d. Bacterial infection
9. DNA virus which undergoes latency and causes reinfection is -
 - a. Adenovirus
 - b. Herpes simplex virus
 - c. Poxvirus
 - d. HIV

10. Morphological form of Acanthamoeba which causes infection is

- a. Cyst
- b. Amoeboid trophozoite
- c. Flagellated trophozoite
- d. Larvae

Q.4. Write notes on (Any five)

30

- a. Protozoal infections of eye & their laboratory diagnosis
 - b. Classification and multiplication of viruses
 - c. Bacterial keratitis – causative organism and their diagnosis
 - d. Chemical disinfection
 - e. Ig M antibody
 - f. Candia albicans
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Second Year B. Optometry Examination
Ocular Diseases I & II

Date : 28-01-2019, Monday]

[Time : 3 Hours

Instructions : (1) Answer to the point.

(2) Figure to the right indicates marks.

(3) Draw diagrams wherever necessary.

(4) Write legibly.

(5) Use separate answer books for each section.

Section A

Q1 objective questions

(10)

1. Distichiasis means

a. Misdirected eyelashes

b. Accessory row of eyelashes

c. Downward drooping of upper lid

d. Outward protrusion of lower eyelid

2. Dense Corneal scar with iris adherent to it is called...

a. Staphyloma

b. Adherent leucoma

c. Leucomorhea

d. Iris cyst

3. Irrespective of the etiology of a corneal ulcer, the drug always indicated is:

a. Corticosteroids

b. Cycloplegics

c. Antibiotics

d. Antifungals

4. Coloured haloes are seen in all except

a. Acute angle closure Glaucoma

b. Immature cataract

c. Pathological myopia

d. Mucopurulent conjunctivitis

5. Corneal sensations are reduced in

a. Herpes simplex

b. Conjunctivitis

c. Fungal infections

d. Bacterial infection

6. Multiton fat keratic precipitates are seen in

a. Bacterial corneal ulcer

b. Cataract

c. Granulomatous uveitis

d. Keratoconus

7. Trantas dots may be seen in patients of

a. Active trachoma

b. Bulbar spring catarrh

c. Corneal phlycten

d. Vitamin A deficiency

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8. A large recurring chalazion may cause

- a. Mechanical ptosis
- b. Astigmatism
- c. Masquerade syndrome
- d. All the above

9. Symbiopharcon should be ruled out in which ophthalmic emergency

- a. Stevens Johnson syndrome
- b. Acute angle closure glaucoma
- c. acute anterior uveitis
- d. Acute bacterial conjunctivitis

10. common cause of photophobia

- a. corneal abrasion
- b. epithelial edema
- c. anterior uveitis
- d. All the above

Q.2 write short notes (any 5 out of six)

(30)

- 1. ptosis
- 2. acute angle closure Glaucoma
- 3. retinal detachment
- 4. acute dacrocystitis
- 5. bacterial corneal ulcer
- 6. diabetic retinopathy

Part B

Q.3. objective questions

(10)

- 1). what is true about schirmer II test...
 - a. it is done after nasal stimulation
 - b. it is done in mild dry eyes
 - c. Done both with and without anaesthesia
 - d. Measures only basal secretion

- 2) positive history in fungal keratitis does not include
 - a. Increase use of steroids
 - b. use of immunosuppressive drugs
 - c. Vegetative injury in farms
 - d. acute onset with severe inflammation

- 3) A female patient 18 years old, who is contact lens wearer since two years, is complaining of redness, lacrimation and foreign body sensation of both eyes. On examination, visual acuity was 6/6 with negative fluorescein test. The expected diagnosis can be:
 - a. Acute anterior uveitis.
 - b. Giant papillary conjunctivitis.
 - c. Bacterial corneal ulcer.
 - d. Acute congestive glaucoma

- 4) The effective treatment of dendritic ulcer of the cornea is:
 - a. Surface anesthesia
 - b. Local corticosteroids
 - c. Systemic corticosteroids
 - d. Acyclovir ointment

- 5.) cyclopegic is not contraindicated in
 - a. Acute attack of angle closure Glaucoma
 - b. Prior to performing laser iridotomy
 - c. Uveitic Glaucoma
 - d. Non of the above

- 6) symptoms in case of viral keratitis do not include
 - a. Pain
 - b. Watery discharge
 - c. Coloured haloes
 - d. Red eye

- 7) following test is least important in diagnosis of primary open angle Glaucoma...
 - a. Perimetry
 - b. Gonioscopy
 - c. Provocative test
 - d. Tonometry

0119E603(4)

8) congenital ptosis does not have which feature...?

- a. It is always bilateral
- b. Faint lid crease
- c. Poor levator function
- d. Chin elevation

9) iris shadow is seen in which stage of cortical cataract?

- a. cuneiform cataract
- b. hypermature cataract
- c. Mature senile cataract
- d. Immature senile

10) what is not true about intraocular lens

- a. It may be foldable
- b. It is placed in capsular bag
- c. It can never be placed in anterior chamber
- d. It may be unifocal or multifocal

Q.4. short notes. (any 5 out of six)

(30)

1. Keratoconus
 2. Scleritis
 3. Anti Glaucoma medications
 4. Trachoma
 5. Pupil abnormalities
 6. Complications of cataract surgery
-

Second Year B. Optometry Examination
Visual Optics Part I & II

Date : 30-01-2019, Wednesday]

[Max. Marks : 80

[Time : 3 Hours

- Instructions :** (1) Answer to the point.
 (2) Figure to the right indicates marks.
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 (4) Write legibly.
 (5) Use separate answer books for each section.

Section : A

A. Fill in the blanks:

1. If dioptric difference of accommodative stimulus is more than accommodative response then the condition is known as _____
2. The posterior focal length of emmetropic eye is at _____
3. Antimetropia is the condition where _____
4. AC/A ratio is _____
5. MAR for visual acuity of 6/24 is _____
6. The refractive index of cornea is _____ in schematic eye.
7. If the eye is _____, projected rays leave the eye diverging and the far point will be situated behind the patients eye.
8. Atropine is the _____ cycloplegic.
9. In astigmatic fan, the axis of the minus cylinder to be given is perpendicular to the _____ line seen.
10. The retinoscopic red reflex originates at _____ of retina.

(10)

B. Answer any five from the following:

1. Write about construction of Log MAR chart and its difference from Snellen chart. (3+3)
2. Write about D15 colour vision test and its interpretation (6)
3. What is contrast sensitivity? Write note on pelli-Robson contrast sensitivity chart. (6)
4. Write note on magnification (6)
5. Write note on optics of Keratometer. (6)
6. Write note on Schematic and reduced eye (3+3)

P.T.O.]

0119E615-II

Section: B

(10)

A. State true or false.

1. Uncorrected hyperopic patient is more likely to develop esophoria
2. Chief complain of a 10DS uncorrected myope is asthenopia
3. -5.00DS/-4.00Dcyl X 90 is an example of mixed astigmatism.
4. Near point of convergence is independent of accommodation.
5. Fogging should not be performed in astigmatic patients.
6. Myopic crescent is commonly seen in developmental/ simple myopia.
7. Bi-oblique astigmatism is a type of irregular astigmatism.
8. If the width of pinhole is very less, it can reduce the vision.
9. Introduction of JCC always reduce the visual acuity of the patient.
10. The amount of astigmatism can be estimated using a stenopic slit.

B. Answer any five from the following:

1. Define amplitude of accommodation. Describe one method of measuring amplitude of accommodation. What will be the amplitude of accommodation for an uncorrected hyperopic eye of 5DS where the near point of accommodation is 12cm? (6)
 2. Elaborate use of stenopic slit and JCC for Astigmatic correction procedure in subjective refraction (6)
 3. Write note on errors of retinoscopy and there managements (6)
 4. Define hypermetropia. Describe functional classification with appropriate examples (6)
 5. Write a short note on cycloplegic retinoscopy for paediatric population (answer including indication, contraindication, preference of drug and procedure) (6)
 6. Find out the ocular accommodation, spectacle accommodation and compare them for a near object at 25cm when a myope is fully corrected with -6.00DS lens at a vertex distance of 12mm (6)
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