



3rd Semester End Term Examination: Dec - 2022.

Subject : Optometric Instruments
Course : B. Optometry
Full Marks : 50

Roll No:
Time : 2 Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Start writing from 2nd page onwards; Don't Write On The 1st Page Backside.
- Question Paper is divided into Three Parts -A, B & C.
- Part-A is containing 10 multiple choice questions.
- Part- B containing SIX questions out of which FOUR questions are to be answered.
- Part C containing FOUR questions out of which TWO questions are to be answered.
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PART - A

Multiple Choice Questions

[10x1=10]

- Which of the following charts do not use pictures?

a) Lea Symbol	b) Allen picture card
c) OKN	d) Cardiff acuity cards
 - Indirect Ophthalmoscopy is done to view _____.

a) Fundus	b) Iris
c) Tear film	d) Ocular adnexa
 - BAT stands for _____.

a) Break applanation tonometer	b) Brightness adjustment meter.
c) Bowman's Aberrometer Test	d) Brightness acuity test
 - The normal range of IOP is _____.

a) 25-30mm of Hg	b) 11-21mm of Hg
c) 5-11mm of Hg	d) >28mm
 - A single character or alphabet on the vision chart is referred to as _____.

a) Character	b) Optotype
c) Target	d) Stigma

- vi) Color Vision can be assessed using the following except
- a) 100 hue
 - b) Ishihara
 - c) Log MAR
 - d) D 15
- vii) ERG stands for?
- a) Electroretinogram
 - b) Electrified retrobulbargraphy
 - c) Electrode relexogram
 - d) none of the above
- viii) Which of the following illumination filter is not present in ophthalmoscope?
- a) Blue
 - b) Triagle
 - c) Hemisphere
 - d) Star
- ix) The A in A scan stands for
- a) Arrow
 - b) Atrophy
 - c) Amplitude
 - d) Air
- x) RNFL thickness is best viewed under
- a) Aberrometer
 - b) Slit lamp
 - c) OCT
 - d) Potential Acuity meter

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Differentiate between objective and subjective refraction.
3. Write in very brief a] pupillometer b] PAM c] BAT.
4. Differentiate between A scan and B scan.
5. Write in brief about electrophysiology and the indication of using electrophysiological tests.
6. Explain the various parts of Slit lamp.
7. Write a short note on Ishihara test.

PART - C

Answer any TWO out of FOUR

[2x10=20]

8. What is Tonometry? Explain the various types of Tonometry methods. Write the steps involved in Applanation Tonometry.
9. What is refraction? Explain the types and steps involved in Subjective refraction?
10. Write about any 3 visual acuity testing methods in the preschool age group of children. Elicit the differences between log MAR and Snellen chart structure.
11. Write about the evolution of retinoscope. Mention the indicators of Cycloplegic refraction.



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Jharkhand

3rd Semester End Term Examination: Dec - 2022.

Subject : Clinical Examination of the Visual System
Course : B. Optometry
Full Marks : 50

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Time : 2 Hours.

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PART - A

Multiple Choice Questions

[10x1=10]

1. i) AT stands for
- | | |
|-------------------------------|--------------------------|
| a) Applanation Tonometry | b) Alternative Toposcopy |
| c) Auto-calculative tonometry | d) None of these |
- ii) Ophthalmoscopy is done to view_____.
- | | |
|--------------|-----------|
| a) Cornea | b) Iris |
| c) Tear film | d) Fundus |
- iii) The normal range of TBUT is _____.
- | | |
|------------------|---------------------------|
| a) 05-08 seconds | b) 02-05 seconds. |
| c) 08-12 seconds | d) 15 seconds and upwards |
- iv) Tear meniscus height is also called
- | | |
|----------------------|----------------------|
| a) Tear lake width | b) Tear volume |
| c) Tear prism height | d) None of the above |
- v) The best way to measure IOP in an edematous cornea is
- | | |
|----------------|------------|
| a) Perkin | b) Tonopen |
| c) Applanation | d) Schiötz |

- vi) Color Vision can be assessed using
- | | |
|---------------|------------------|
| a) Lea Symbol | b) Ishihara |
| c) Log MAR | d) Teller acuity |
- vii) Which of the following is recorded during history taking?
- | | |
|--------------------------------|-----------------------|
| a) h/o systemic disease | b) Present complaints |
| c) Previous glass prescription | d) All of the above |
- viii) _____ is also called corneal reflex test.
- | | |
|----------------|---------------|
| a) Tottenberg | b) Hirschberg |
| c) Marcus Gunn | d) Maddox rod |
- ix) PERRLA is used to record finding of
- | | |
|----------------|--------------|
| a) Optic nerve | b) Pupil |
| c) Retina | d) Tear film |
- x) Broad _____ test is performed to assess EOM
- | | |
|------|------|
| a) Z | b) A |
| c) M | d) Z |

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Differentiate between Direct and Indirect Ophthalmoscopy.
3. Write a short note on Amsler Grid.
4. Differentiate between log MAR and Snellen chart.
5. What is contrast sensitivity? Explain the importance of Contrast sensitivity.
6. Explain the various parts of Slit lamp.
7. Write a short note on Color vision.

PART - C

Answer any TWO out of FOUR

[2x10=20]

8. What is Tonometry? Explain the various types of Tonometry methods. Write the steps involved in Applanation Tonometry.
9. What are the different layers of tear film and what are their functions? Explain two methods to assess tear film in detail.
10. Draw the diagram of a healthy fundus. What are the various ways to assess retinal physiology, anatomy and vasculature?
11. Explain torchlight explanation with respect to pupil evaluation. Explain a case of RAPD in left eye with diagrammatic representation.



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3rd Semester End Term Examination: Dec - 2022.

Subject : Ocular disease 1
Course : B. Optometry
Full Marks : 50

Roll No:
Time : 2 Hours.

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PART - A

Multiple Choice Questions

[10x1=10]

1. i) Cloudy cornea in a new born baby is suggestive of.
- | | |
|------------------------|---------------------|
| a) Cataract | b) Refractive error |
| c) Congenital glaucoma | d) Uveitis |
- ii) Mutton fat KPs are seen in _____
- | | |
|-------------------|--------------|
| a) Uveitis | b) Glaucoma |
| c) Conjunctivitis | d) Keratitis |
- iii) Bitot's spot is seen in
- | | |
|-------------------------|-------------------------|
| a) Temporal conjunctiva | b) Nasal conjunctiva |
| c) Inferior conjunctiva | d) Superior conjunctiva |
- iv) _____ keratitis has decreased corneal ulcer
- | | |
|--------------|-----------|
| a) Parasitic | b) Viral |
| c) Bacterial | d) Fungal |

- v) Inflammation of glands of Molls and Zeiss causes
- | | |
|---------------|----------------------|
| a) Styne | b) Chalazion |
| c) Meibomitis | d) none of the above |
- vi) Munson sign is found in_____
- | | |
|------------|------------|
| a) Cornea | b) Retina |
| c) Eyebrow | d) Eyelids |
- vii) Dendritic keratitis is caused by.
- | | |
|---------------------|-------------------|
| a) Varicella Zoster | b) Herpes Simplex |
| c) HIV | d) CMV |
- viii) 30 yrs. old male presents with history of injury to the eye with leaf five days ago and pain, photophobia, hypopyon and redness to the eye for 2 days. On staining the cornea takes stain, what would be the most likely pathology?
- | | |
|--------------------|-----------------|
| a) Viral Keratitis | b) Fungal Ulcer |
| c) Retinitis | d) Uveitis |
- ix) Scleritis is typically associated with.
- | | |
|-------------------------|-----------------|
| a) Rheumatoid arthritis | b) Jaundice |
| c) Cancer | d) Tuberculosis |
- x) Cobblestone appearance is seen in
- | | |
|--------|--------|
| a) VKC | b) SAC |
| c) GPC | d) PAC |

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Describe conjunctival signs.
3. Define - Madarosis. Poliosis. Trichiasis .
4. Draw a well labelled diagram of anterior chamber as seen in a Uveitis patient under slit lamp examination.
5. Write a short note on orbital trauma.
6. Mention and describe any two developmental eyelid anomalies.
7. What is Graves's disease? Mention the ocular implications of Graves's disease.

PART - C

Answer any TWO out of FOUR

[2x10=20]

8. Mention and explain the Keratoconus signs.
9. What is tear film and describe briefly the tear film structure? Elaborate on assessment techniques with diagram.
10. With respect to dry eye, describe the classification of Dry eyes.
11. Explain the classification of Uveitis.



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3rd Semester End Term Examination: Dec - 2022.

Subject : Optometric Optics I
Course : B. Optometry
Full Marks : 50

Roll No:
Time : 2 Hours.

Instructions to the Candidates:

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PART - A

Multiple Choice Questions

[10x1=10]

- i) When a wave strikes an object and bounces
a) Reflection
b) Absorption
c) Transmission
d) Refraction
- ii) The ray that hits the surface is called _____.
a) Emergent ray
b) Refracted ray
c) Incident ray
d) Normal ray
- iii) The angle of incidence is equal to angle of reflection
a) Law of reflection
b) Law of refraction.
c) Law of photosensitivity
d) None
- iv) _____ causes formation of Airy's disc
a) Polarization
b) Diffraction
c) Reflection
d) Total Internal Reflection

- v) deviates the path of light without changing its vergence
a) Convex lenses
b) Concave lenses
c) Prisms
d) Occluder
- vi) Light ray in prisms bends
a) Away from the apex
b) Towards apex
c) Based on incident ray
d) In the same direction
- vii) ERG stands for?
a) Electroretinogram
b) Electrified retrobulbargraphy
c) Electrode relexogram
d) none of the above
- viii) Prism in dioptries = power in dioptries and decentration in centimetres, this is
a) Listing's rule
b) Snellen's rule
c) Prentice's Rule
d) Photon rule
- ix) Prism can be incorporated in
a) CL
b) Spectacle lenses
c) None of the above
d) Both a and b
- x) _____ is a measurement we take that analyses the angle from the bottom of your glasses (at the cheek) to the top of the frame
a) Pantoscopic tilt
b) Retrosopic tilt
c) Face wrap
d) Slant angle

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Write a short note on Prism..
3. Write a short note on contents of the trial box used in optometric practice.
4. Vertex distance and vertex power.
5. Photochromic lenses.
6. Spherometer - its application..
7. Depth of field and depth of focus.

PART - C

Answer any TWO out of FOUR

[2x10=20]

8. Discuss the spectacle lenses, types based on shape and focal lengths with proper diagrams.
9. What is Transposition? Explain the need of transposition in spectacle power.
Transpose $+3.50\text{D Sph} / +2.00\text{D cyl} \times 140^\circ$.
10. Explain Presbyopia. Write in detail about the multifocal lenses? How do multifocal correcting aids help in Presbyopia?
11. What is aberration? Explain the types of aberration.



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3rd Semester End Term Examination: Dec - 2022.

Subject : Visual Optics - I
Course : B. Optometry
Full Marks : 50

Roll No:
Time : 2 Hours.

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PART - A

Multiple Choice Questions

[10 x 1 = 10]

- i) According to the sign convention, same direction means
 - a) Neutral
 - b) Positive
 - c) Negative
 - d) All of the above
- ii) Accommodation in aphakic eye is
 - a) Present
 - b) Absent
 - c) +10D
 - d) None
- iii) How many cardinal points present in schematic eye
 - a) 6
 - b) 4
 - c) 2
 - d) 1
- iv) Optical axis intersecting the principal point on the axis called
 - a) Principal point
 - b) Nodal plane
 - c) Principal plane
 - d) Focal point

- v) Vergence of light point A = -10.00D. What will be the vergence of light at point which is 15cm downstream from point A
- a) -4.00D
 - b) +6.00D
 - c) +10.00D
 - d) -4.50D
- vi) Object space is also known as
- a) Model space
 - b) Image space
 - c) Optical space
 - d) All of the above
- vii) Out of focus aberration creates which type of image in report
- a) Fuzzy image
 - b) Sharp image
 - c) Virtual image
 - d) None of the above
- viii) Spectacle magnification depends upon
- a) Form of lens
 - b) Shape of lens
 - c) Power of lens
 - d) All of the above
- ix) Colour ghost images are seen in
- a) Spherical aberration
 - b) Lateral aberration
 - c) Oblique aberration
 - d) None of the above
- x) Aberrations are corrected by
- a) Single vision lens
 - b) PALs
 - c) Bifocal lens
 - d) Doublet lens

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Write a short note on vergence
3. What is power of the lens?
4. Difference between object space and image space
5. What is catoptrics power?
6. Write a short note on cardinal points
7. What is magnification

PART - C

Answer any TWO out of FOUR

[2x10=20]

8. Describe magnification and its types?
9. Describe aberration and its applications?
10. Elaborate types of refractive error in human eye, explain with diagram
11. Describe the optics of ocular structure



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3rd Semester End Term Examination: Dec - 2022.

Subject : Indian Medicine & Telemedicine
Course : B. Optometry
Full Marks : 70

Roll No:
Time : 3 Hours.

Instructions to the Candidates:

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- Question Paper is divided into Three Parts -A, B & C.
- Part-A is containing 10 multiple choice questions.
- Part- B containing EIGHT questions out of which SIX questions are to be answered.
- Part C containing FOUR questions out of which THREE questions are to be answered.
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PART - A

Multiple Choice Questions

[10x1=10]

- i) What all can be practiced as an optometrist in india
 - a) Contact lens
 - b) Low vision
 - c) Vision Therapy
 - d) All the above
- ii) Highest level of integration in health service is
 - a) PHC
 - b) Sub centre
 - c) CHC
 - d) District hospital
- iii) Which of the following is a new concept in Primary Health Care
 - a) Equitable distribution
 - b) Community participation
 - c) Qualitative inquiry
 - d) Primary Health care
- iv) Function of PHC are
 - a) Referral services
 - b) Family planning
 - c) Basic laboratory services
 - d) All of the above

- v) Elements of primary health care include all of the following except
a) An adequate supply of safe water b) Providing essential drugs
c) Sound referral system d) Health education
- vi) National rural health mission (NRHM) was launched by
a) 2001 b) 2003
c) 2005 d) 2007
- vii) Which of the following is the primary component of Janani Shishu Suraksha Yojna
a) Early registration b) Institutional birth
c) Post-delivery care d) All of the above
- viii) DOTS is a national program to address
a) Malaria b) Filariasis
c) Tuberculosis d) Japanese encephalitis
- ix) Mantra of dharma, artha, Kama and moksha is
a) Hitayu b) Sukhayu
c) Arogya d) None of these
- x) NPCB Stands for
a) National Program for control of blindness b) National Population control blind
c) National protection control blind d) None of the above

PART - B

Answer any SIX out of EIGHT

[6x5=30]

2. Write a short note on introduction to ayurveda
3. Write a short note on homeopathy
4. Write about national health mission
5. Write a short note on health care delivery system in India
6. Explain national health policy
7. Write a short note on unani and siddha
8. Write a short note on yoga
9. Write a short note on naturopathy

PART - C

Answer any THREE out of FOUR

[3x10=30]

10. Discuss census and its impact on health policy
11. Describe principal and methods of epidemiology
12. Discuss importance of demography & vital statistics
13. Describe community participation in health care delivery system



3rd Semester End Term Examination: Dec - 2022.

Subject : Ocular Microbiology
Course : B. Optometry
Full Marks : 50

Roll No:
Time : 2 Hours.

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PART - A

Multiple Choice Questions

[10x1=10]

1. i) Conjunctivitis caused lasting more than 4 weeks is referred to as
- | | |
|---------------|-----------------|
| a) Acute | c) Chronic |
| b) Hyperacute | d) All of these |
- ii) Solidifying agent used in the bacterial culture media is
- | | |
|---------------|-----------------|
| a) Agarose | c) Agar |
| b) Acrylamide | d) All of these |
- iii) Iodophores are mixture of
- | | |
|-------------------------|-------------------------------------|
| a) Iodine and Aldehydes | c) Iodine and surface active agents |
| b) Iodine and alcohols | d) Iodine and phenols |
- iv) Most appropriate % of alcohol used as sterilizing agent is
- | | |
|---------|--------|
| a) 100% | c) 90% |
| b) 70% | d) 50% |
- v) The media which allow growing a specific type of bacteria is called
- | | |
|-----------------------|--------------------|
| a) Differential Media | b) Selective Media |
| c) Enriched Media | d) All of these |

- vi) Which of the following is not a bacterial eye infection?
- | | |
|--------------------|---------------------|
| a) Endophthalmitis | b) Conjunctivitis |
| c) Keratitis | d) Acanthamoebiasis |
- vii) Toxocariasis eye infection caused by
- | | |
|-------------|---------------|
| a) Bacteria | b) Protozoa |
| c) Fungi | d) Helminthes |
- viii) Chronic bacterial eye infection is caused by
- | | |
|---------------------------------|---------------------------------|
| a) <i>Staphylococcus aureus</i> | b) <i>Neisseria gonorrhoeae</i> |
| c) <i>Klebsiella pneumoniae</i> | d) All of these |
- ix) Conjunctivitis caused by
- | | |
|------------------|----------|
| a) Bacteria | b) Virus |
| c) Both of these | d) Fungi |
- x) Which of the following is fungal eye infection?
- | | |
|---------------------|-----------------|
| a) Retinitis | b) Choroiditis |
| c) Optic neuropathy | d) All of these |

PART - B

Answer any FOUR out of SIX

[4x5=20]

2. Write the factors affecting growth of bacteria.
3. Describe the culture media on the basis of consistency.
4. What is selective culture media? Give any two example
5. Describe Structure of bacteria.
6. What is conjunctivitis? Write the symptoms of conjunctivitis.
7. What is pure culture? Write the methods to isolate pure culture.

PART - C

Answer any TWO out of FOUR

[2x10=20]

10. Discuss any three Chemical method of control of microorganisms.
11. Write common bacterial infection of eye?
12. What is culture media? Write the different types of culture media with example used in microbiology.
13. Write common viral infection of eye?