



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

Roll No:

Time : 3 Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Candidates are required to give their answers in their own words as far as practicable.
- 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.
- Do not write anything except your Roll No. on the question paper.
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.

PART A

MULTIPLE CHOICE QUESTIONS

(10x1=10)

1. The power of lens is the of the lens
 - a. Reciprocal of the center of curvature
 - b. Reciprocal of the focal length
 - c. Reciprocal of the linear magnification
 - d. The difference in the focal lengths
2. The distance from the pole to focus is called.....
 - a. Pole
 - b. Aperture
 - c. Principal Axis
 - d. focal length
3. Which of the following is true for all lenses:
 - a. All magnified images are inverted.
 - b. All virtual images are inverted.
 - c. All real images are inverted.
 - d. All diminished images are inverted.
4. A patient requires cylinder lens at 30° in one eye & 150° in another eye. What can be the type of astigmatism?
 - a. WTR
 - b. ATR
 - c. OBLIQUE
 - d. BI-OBLIQUE
5. Refractive index of cornea is
 - a. 1.376
 - b. 1.406
 - c. 1.363
 - d. 1.386
6. If the crystalline lens moves forward the resulting refractive error will be
 - a. Myopia
 - b. Hyperopia
 - c. Astigmatism
 - d. Aphasia.
7. The horizontal meridian is more curved than vertical in
 - a. With the rule astigmatism
 - b. Against the rule astigmatism
 - c. Oblique astigmatism
 - d. bi-oblique astigmatism.
8. In case of keratometry, we use Purkinje image.
 - a. 1st
 - b. 2nd
 - c. 3rd
 - d. 4th

9. Foster fuch spot is found in
- Degenerative myopia
 - Astigmatism
 - Aphasia
 - None of these
10. Spherical mirror with reflecting surface curved inwards is called
- Convex Mirror.
 - Concave Mirror
 - Curved Mirror
 - None of the above

PART B

ANSWER ANY FOUR OUT OF SIX

(4x5=20)

(Write short notes of the following)

- Application of Polarized light
- Fraunhofer Diffraction
- Wave theory of light
- Fluorescence and its uses
- Cardinal points of a lens
- Irregular astigmatism

PART C

ANSWER ANY TWO OUT OF FOUR

(10x2=20)

- Define astigmatism. Write down different refractive types of regular Astigmatism and Treatments of astigmatism.
- Describe the aetiology of hypermetropia. A patient with visual acuity of 6/36 is improved by addition of + 4.00 D and attained 6/6. Further addition of + 1.00 D does not alter the visual acuity, but further addition causes deterioration of visual acuity. After cycloplegia he again accepts another + 1.00. Calculate the absolute, facultative, manifest, latent total Hyperopia of that patient
- With the help of diagram state the position of cardinal points on schematic eye of Gullstrand. What is the reduced eye of Donder?
- Describe degenerative myopia. Its clinical features and complications associated with it.



ARKAJAIN
University
Jharkhand

3rd Semester Examination –2021-22

Subject : Optometric Optics-1
Course : B. Optometry
Full Marks : 50

Roll No:

Time : 3Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Candidates are required to give their answers in their own words as far as practicable.
- 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.
- Do not write anything except your Roll No. on the question paper.
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.

PART - A

MULTIPLE CHOICE QUESTIONS:

(10x1=10)

1. When a wave strikes an object and bounces off
a) Reflection
b) Refraction
c) Diffraction
d) None
2. The ray that hits the surface
a) Incident
b) Emergent
c) Normal
d) None
3. The angle of incidence is equal to angle of reflection
a) Law of refraction
b) Law of reflection
c) Law of photosensitivity
d) None
4. The bending of waves around a barrier is called
a) Polarization
b) Destructive interference
c) Diffraction
d) Rectilinear propagation
5. deviates the path of light without changing its vergence
a) Prism
b) Convex lenses
c) Mirror
d) Concave lenses
6. In prism, the ray of light deviates towards
a) Apex
b) Base
c) Anywhere
d) Normal

7. _____ 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) Slanting angle
 - c) Face wrap
 - d) Sag
8. A spherometer is an instrument used
- a) For the precise measurement of the radius of curvature of a sphere
 - b) To measures the spherical power
 - c) To cut spherical lenses
 - d) All the above
9. The vergence of converging light rays are
- a) Negative
 - b) Zero
 - c) Positive
 - d) All the above
10. Prism can be incorporated in
- a) Contact lenses
 - b) Glasses
 - c) None
 - d) Both A and B

PART B

ANSWER ANY FOUR OUT OF SIX:

(4x5=20)

(Write short notes of the following)

- 1) Prism and its properties
- 2) Fresnel prisms
- 3) Vertex power
- 4) Lenses
- 5) Vertex distance
- 6) Pantoscopic tilt

PART C

ANSWER ANY TWO OUT OF FOUR:

(2x10=20)

- 1) Discuss the lenses, shapes and sizes.
- 2) Describe transposition and type with example.
- 3) Discuss aberration of lenses.
- 4) Describe magnification in high minus and plus lenses



3rd Semester Examination – 2021-22

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

Roll No:

Time : 3 Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Candidates are required to give their answers in their own words as far as practicable.
- 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.
- Do not write anything except your Roll No. on the question paper.
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.

PART A

MULTIPLE CHOICE QUESTIONS

(10x1=10)

1. Keratometer measures corneal
 - a. Dioptric value
 - b. Radius of curvature
 - c. Thickness
 - d. Diameter
2. LogMAR chart measures visual acuity in:
 - a. Log units
 - b. Meter
 - c. Feet
 - d. None
3. Aqueous flare is best seen with
 - a. Conical beam
 - b. Specular reflection
 - c. Sclerotic scatter
 - d. None of these
4. Pin hole measures
 - a. Potential Visual acuity
 - b. Functional Visual acuity
 - c. Both A and B
 - d. None
5. The blue filter in slit lamp is used for examining
 - a. Aqueous flare
 - b. Hypopyon
 - c. Fluorescein staining
 - d. An implanted IOL
6. What is the principle of retinoscope ?
 - a. Scheiner principle
 - b. Focault Principle
 - c. Eschering's principle
 - d. Hartmann principle

7. Which method of illumination is used for observing the corneal endothelium?
- | | |
|------------------------|-----------------------|
| a. Sclerotic scatter | c. Conical beam |
| b. Specular reflection | d. Retro illumination |
8. In Snellen fraction, denominator indicates:
- Distance at which chart is made
 - Distance at which person is reading
 - Distance at which smallest optotype identified
 - None of the above
9. In indirect Ophthalmoscopy the image is
- | | |
|-------------|---------------------|
| a. Real | c. Magnified |
| b. Inverted | d. All of the above |
10. Cycloplegics are used in retinoscopy in patients with
- | | |
|-----------------------|---------------------|
| a. High hypermetropia | c. High astigmatism |
| b. High myopia | d. Aphakic patients |

PART B

ANSWER ANY FOUR OUT OF SIX

(4x5=20)

(Write short notes of the following)

- Log MAR Vs Snellen visual acuity Chart
- Brightness Acuity Test
- Applanation tonometer
- Use of Cobalt Blue filter
- Neutrality in Retinoscopy
- Trichromatic theory of color vision

PART C

ANSWER ANY TWO OUT OF FOUR

(10x2=20)

- Explain different types of A Scan Techniques
- Give the names of the charts used for testing distance and near visual Acuity. Write the procedure of testing distance visual acuity.
- What is keratometry? Draw the optical diagram of keratometer. What is hot and cool colors. Its significance in topography.
- Explain in detail any five Slit lamp illumination techniques with the help of diagrams.



3rd Semester Examination –2021-22

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

Roll No:

Time : 3 Hours.

Instructions to the Candidates:

- Read the question paper very carefully.
- Candidates are required to give their answers in their own words as far as practicable.
- 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.
- Do not write anything except your Roll No. on the question paper.
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.

PART A

MULTIPLE CHOICE QUESTIONS

(10x1=10)

1. Lipopolysaccharides in cell walls are characteristic of?
a) Gram-positive bacteria b) Gram-negative bacteria
c) Fungi d) Algae
2. Which of the following is used as a solidifying agent for media?
a) Silica Gel b) Peptone
c) Agar d) Yeast extract
3. Iodophores are mixture of
a) Iodine and Aldehydes c) Iodine and surface active agents
b) Iodine and alcohols d) Iodine and phenols
4. Which of the following is best to sterilize heat labile solutions?
a) Autoclave b) Membrane filtration
c) Dry heat d) Pasteurization
5. 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
6. In autoclave, the principle involved is
a) Dry heat b) Moist heat
c) Steam under pressure d. Both b and c
7. A culture medium the exact composition of which is not known was called as
a) Simple b) Complex
c) Defined d) Natural
8. In which stage of the growth in bacteria, cells are dividing regularly by binary fission and are growing by geometric progression
a) Log phase b) Lag phase
c) Stationary phase d) None of these

9. Presence of flagella all over the surface of bacteria is called
- | | |
|------------------|------------------|
| a) Lophotrichous | b) Peritrichous |
| c) Monotrichous | d) Amphitrichous |
10. Chronic bacterial eye infection is caused by
- | | |
|--------------------------|--------------------------|
| a) Staphylococcus aureus | b) Neisseria gonorrhoeae |
| c) Klebsiella pneumoniae | d) All of these |

PART B

ANSWER ANY FOUR OUT OF SIX

(4x5=20)

1. What is an antibiotic? Write the mode of action of different class of antibiotics.
2. Write the factors affecting growth of bacteria.
3. Write common parasitic infection of eye?
4. Write the different methods of preservation of bacteria?
5. Classify the bacteria on the basis of arrangement of flagella with example.
6. Write common viral infection of eye?

PART C

ANSWER ANY TWO OUT OF FOUR

(2x10=20)

1. Discuss the Chemical method of control of microorganisms.
2. What is culture media? Write the different types of culture media with example used in microbiology.
3. What is cultivation of microorganism? Describe any two method of cultivation of microorganism.
4. Write common fungal infection of eye?