C–7831

Sub. Code
91413

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Optometry

GENERAL ANATOMY & PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is the structural and functional unit of the human nervous system

   (a) Brain (b) Axon

   (c) Dendron (d) Neuron

2. Which of the following hormone helps in the secretion of HCL from stomach

   (a) Gastrin (b) Secretin

   (c) Pepsin (d) Renin

3. How many pairs of spinal nerves are found in human

   (a) 33 (b) 31

   (c) 12 (d) 13

4. Which of the following part of the human brain has a center for controlling breathing

(a) Diencephalon (b) Cerebrum

(c) Cerebellum (d) Medulla oblangata

5. Which of the following human cells produce insulin?

(a) Beta cells (b) Alpha cells

(c) F cells (d) Delta cells

6. The term used to denote the end of a long bone is

(a) Epimysium (b) Epiphysis

(c) Both (a) and (b) (d) Diaphysis

7. Where does gas exchange takes place in the lungs?

(a) Alveoli (b) Bronchioles

(c) Trachea (d) Pleura

8. Which chamber of the heart pumps blood to the lungs

(a) Left ventricle (b) Left atrium

(c) Right ventricle (d) aorta

9. The eardrum is also called as

(a) auditory ossicles

(b) vestibules

(c) tympanic membrane

(d) acoustic meatus

10. Bone forming cells are called

(a) Osteones (b) Osteocytes

(c) Osteoclast (d) Osteoblast

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the mechanism of respiration with labelled diagram.

Or

(b) Write about the anatomy of digestive system.

12. (a) Tabulate the difference between arteries, veins and capillaries with neat diagram.

Or

(b) Write short notes on salivary glands.

13. (a) Write in detail on the mechanism of blood flow through the heart.

Or

(b) Write about the systemic and pulmonary circulation in detail.

14. (a) Explain the structure of neuron with a neat labelled diagram.

Or

(b) List out the functions of skin.

15. (a) Explain olfactory pathway with neat diagram.

Or

(b) Define cartilage, connective tissue, neuroglia.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on the major parts of the brain with neat diagram.

Or

(b) Write in detail on the anatomy of skeletal system and explain each structure in detail with neat labelled diagram.

17. (a) Write in detail on the anatomy of human heart with a neat labelled diagram.

Or

(b) Write in detail on the anatomy of male reproductive system.

18. (a) Write in detail on the structure and functions of digestives system with a neat labelled diagram.

Or

(b) Write about neuromuscular junction and also explain the types of joints in human body with neat labelled diagram.

19. (a) Write about the cardiac conducting system, cardiac output and the uses of ECG.

Or

(b) Write in detail on structure and functions of urinary system.

20. (a) Write in detail on cranial nerves and spinal nerves.

Or

(b) Write in detail on menstrual cycle.

———————

C–7832	Sub. Code 91414

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Optometry

GEOMETRICAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Polarization of light waves proves
   (a) corpuscular nature of light
   (b) quantum nature
   (c) transverse wave nature
   (d) longitudinal nature

2. The properties of coherent sources are
   (a) equal phase difference
   (b) equal or nearly equal amplitude
   (c) the same wavelength
   (d) all of these

3. Which phenomenon establish the particle nature of light
   (a) interference (b) diffraction
   (c) polarisation (d) none of these

4. The image formed by prism is

(a) Virtual

(b) Erect

(c) Displaced towards apex

(d) All of the above

5. Diopter is a unit of

(a) Power of lens (b) Magnification

(c) Refraction (d) Reflection

6. When light enters from one medium to another which one does not change

(a) velocity (b) wavelength

(c) frequency (d) intensity

7. If the object is placed on the focus of convex lens the image is formed at

(a) 2f (b) between f and 2f

(c) infinity (d) beyond 2f

8. The two convex lens of same focal length f are combined together the resultant focal length is

(a) f (b) f/2

(c) 2f (d) f + 2

9. The formula for calculating the focal of a lens when provided with its focal length is

(a) F =1/f (b) F = 1 × f

(c) F = 2f (d) F = f/2

10. Principle of operation of optical fibers is

(a) refraction

(b) total internal reflection

(c) dispersion

(d) rectilinear propagation

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Define geometrical and optical path length.

Or

(b) Write about prism dioptre, dispersive power and angular dispersion.

12. (a) Write short notes on sinusoidal oscillations.

Or

(b) Write about the image properties of convex lens at various distances.

13. (a) Write about the dual nature of light.

Or

(b) Write about lateral and axial magnification.

14. (a) Write about snell's law and define absolute and relative refractive indices.

Or

(b) Explain deviation produced by prism.

15. (a) Write in detail on law of refraction.

Or

(b) Write about curvature of filed and ways of minimizing them.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write about the theory and uses of optical fibre.

Or

(b) Write about young's double slit experiment with a neat labelled diagram.

17. (a) Explain in detail on the equivalent focal length and focal power of two thin lenses separated by a distance.

Or

(b) Write the statement of fermat's principle and explain the law of reflection using fermat's principle.

18. (a) Explain vergence equation in detail.

Or

(b) Write about refraction and translation matrices.

19. (a) Explain total internal reflection and critical angle.

Or

(b) Write about spherical aberration, coma and astigmatism.

20. (a) Explain refraction by convex and concave spherical surfaces.

Or

(b) Write about cardinal points and planes on matric methods in paraxial optics.

———————

C–7833

Sub. Code
91415

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Optometry

GENERAL & OCULAR BIOCHEMISTRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The most abundant protein present in body is

   (a) Globulin (b) Albumin

   (c) Collagen (d) Haemoglobin

2. Glucose is

   (a) Aldose hexose sugar

   (b) Ketose hexose sugar

   (c) Pyranose pentose sugar

   (d) Furanose pentose sugar

3. Gluconeogenesis occurs in the liver and _____.

   (a) Kidney (b) Muscle

   (c) Heart (d) None of these

4. Ketone bodies are normally synthesized from

(a) acetyl Co-A (b) Glucose

(c) Glycerol (d) Acetone

5. Enzymes are ————————.

(a) Biological catalyst (b) Hormones

(c) Reaction product (d) None of the above

6. Lipids are stored in the body mainly in the form of

(a) Triglycerides (b) Glycolipids

(c) both (a) and (b) (d) None of these

7. Beri beri is caused due to the lack of

(a) Thiamine (b) Vitamin A

(c) Vitamin C (d) All of these

8. Expand TORCH

(a) Toxoplasmosis, Rubella, cytomegalo virus and Histoplasmosis

(b) Toxocariosis, Rubella, cytomegalovirus and Herpes simplex

(c) Treponoma, Rubella, Cytomegalo virus, Herpes zoster

(d) Toxoplasmosis, Rubella, chicken pox, Herpes simplex

9. The mucoid layer of the tear film is produced by

(a) Meibomian glands

(b) Main lacrimal gland

(c) Zeiss gland

(d) Goblet cells

10. What is the innermost and thinnest layer of the tear film?

(a) Mucin layer (b) Aqueous layer

(c) Lipid layer (d) None of these

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about classification and importance of saturated and unsaturated fatty acids.

Or

(b) Write about the functions of monosaccharide, disaccharides and polysaccharide.

12. (a) Write about ketone bodies.

Or

(b) Write about tear secretion.

13. (a) Write about aqueous humour production.

Or

(b) Write about the mode of actions of enzymes.

14. (a) Write about the classification of amino acids.

Or

(b) Write about factors affecting enzyme activity.

15. (a) Write about the biological functions of vitamins.

Or

(b) Define cataract and list out the cataractogenic agents.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write about the types and management of diabetes mellitus.

Or

(b) Classify enzymes and write about the examples of co enzymes and Michalis menten equation.

17. (a) Write about tear film diagnostic tests.

Or

(b) Write about glycolysis and TCA cycle.

18. (a) Write about the structure and functions of crystalline lens.

Or

(b) Write about the structure and functions of phospholipids and cholesterol.

19. (a) Write in detail on the composition of tear film.

Or

(b) Explain in detail on atherosclerosis and its consequences.

20. (a) Write in detail on the biochemical composition of corneal layers.

Or

(b) Write about IOP, define glaucoma and the write about the types of glaucoma.

C–7834	Sub. Code 91416A

B.Sc. DEGREE EXAMINATION, APRIL 2026.

First Semester

Optometry

NUTRITION

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which nutrient is essential for the formation of RBC

   (a) Vitamin C (b) Vitamin E

   (c) Iron (d) Vitamin B12

2. Which mineral is essential for nerve function and muscle contraction

   (a) Sodium (b) Magnesium

   (c) Phosphorus (d) Chloride

3. Which food group is a good source of both protein and healthy fats

   (a) Dairy products (b) Grains and cereals

   (c) Nuts and seeds (d) Fruits and vegetables

4. Vitamin C is also known as

   (a) Ascorbic acid (b) Thiamine

   (c) Citric acid (d) Tartaric acid

5. Fats are hydrocarbons consisting of _____.

(a) N, C & O (b) C, H & O

(c) C, N & H (d) C, H & N

6. Proteins are made up of smaller units called

(a) amino acids (b) Fats

(c) carbohydrates (d) all of these

7. Amino acids which cannot be synthesized in body and they must be supplied in food are called

(a) Proteins

(b) Non essential amino acids

(c) Synthetic amino acids

(d) Essential amino acids

8. Which of the following are fat soluble vitamins except

(a) Vitamin D (b) Vitamin A

(c) Vitamin C (d) Vitamin E

9. Bitot's spots is the characteristic of _____ deficiency

(a) Vitamin D (b) Vitamin A

(c) Vitamin C (d) Vitamin K

10. The clinical forms of protein energy malnutrition is

(a) Kwashiorkar (b) Marasmus

(c) Both (a) & (b) (d) None of the above

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) List out the sources of vitamins.

Or

(b) Write notes on the causes and manifestations of obesity.

12. (a) Write about the important parameters to evaluate on the assessment of nutritional status.

Or

(b) Write notes on PEM.

13. (a) Write about the sources of nutrients with anti oxidant properties and its role in diet.

Or

(b) Write notes on measles.

14. (a) Write notes on RDA.

Or

(b) Define energy expenditure, satiety value and obesity.

15. (a) Write about nitrogen imbalance.

Or

(b) Write about the clinical manifestations of hyperlipidemia.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on vitamin deficiency and its associated eye disorders.

Or

(b) Write about the measurement and units of energy value of food.

17. (a) Write in detail on the sources and functions of proteins and minerals.

Or

(b) Write in detail on the history of nutrition.

18. (a) Write in detail on the total energy and calories requirement for different age groups.

Or

(b) Write in detail on food groups and diet planning.

19. (a) Write in detail on the sources and known of essential and non essential amino acids.

Or

(b) Write in detail on the role of vitamin and other essential nutrients in lactation and infancy.

20. (a) Write in detail on the saturation limit of daily food guide.

Or

(b) Write about the role of nutritional imbalance in hyperlipidemia and heart diseases.

———————

C–7835	Sub. Code 91416B

B.Sc. DEGREE EXAMINATION, APRIL 2026.

First Semester

Optometry

BASIC LIFE SUPPORT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The instrument used to record temperature is known as
   (a) Stethoscope
   (b) Thermometer
   (c) Sphygmomanometer
   (d) Aesthesiometer

2. Respiratory rate lesser than 10 breaths per minute is termed as
   (a) Tachypnea (b) Bradycardia
   (c) Bradypnea (d) Apnea

3. The pulse site at the neck is
   (a) Carotid (b) Temporal
   (c) Popliteal (d) Femoral

4. What is the medical term for fever
   (a) Pyrexia (b) Thermophilia
   (c) Hypothermia (d) Hypertension

5. The number of pulse beats per minute is known as

(a) Rate (b) Volume

(c) Tension (d) Rhythm

6. If a patient reads 2 letters of 0.4 line in LogMAR chart, what would be the visual acuity

(a) 0.46 (b) 0.35

(c) 0.34 (d) 0.42

7. Under normal conditions, when light is shined into one eye the pupil of the other eye should

(a) constrict

(b) dilate

(c) stay the same

(d) do the opposite of the eye you are shining the light

8. PERRL is an acronym for assessing the pupil, what does it stands for

(a) Pupils are even, regular and reacting to light

(b) pupils are equal, round and reacting to light and accommodation

(c) Pupillary response is even with regular rhythm and light tolerance

(d) Pupils are regular, rectangular and reactive to light

9. Bandages promote healing by

(a) Controlling bleeding

(b) Protects the wound from infection and drying

(c) decreasing the possibility of self-trauma

(d) all of the above

10. Which one of the following is the test to measure coagulation time

(a) Prothrombin time test

(b) CRP

(c) ESR

(d) None of the above

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) List out the components of history taking in ophthalmology.

Or

(b) Write about the vision and mission of health care.

12. (a) List out few basic protocols in health care.

Or

(b) Write notes on external ocular examination.

13. (a) Write notes on ocular foreign bodies.

Or

(b) Write about the assessment of respiration.

14. (a) Write notes on medical records.

Or

(b) Write about the assessment of temperature and pulse rate.

15. (a) Write about the assessment of blood oxygen level.

Or

(b) Write notes on CPR.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write about the importance of WHO in health care.

Or

(b) Write about the assessment of blood glucose level.

17. (a) Write about the basics of first aid.

Or

(b) Explain in detail on the prerequisites, procedure and recording of visual acuity.

18. (a) Write about the importance of NABH in health care

Or

(b) Explain in detail on pupillary examination.

19. (a) Write in detail on the components of vision and visual acuity

Or

(b) Write about the assessment of blood pressure

20. (a) Explain the importance of assessing vital signs.

Or

(b) Write in detail on ophthalmic history taking.

———————

C–7836	Sub. Code 91423

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

OCULAR ANATOMY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The outermost layer of the eyeball is:

   (a) Retina (b) Scilera

   (c) Lens (d) Iris

2. Which part of the eye is responsible for focusing light?

   (a) Iris (b) Retina

   (c) Lens (d) Sclera

3. What supplies blood to the retina?

   (a) Cornea (b) Central retinal artery

   (c) Vitreous body (d) Optic chiasma

4. The main function of lacrimal glands is to:

   (a) Produce tears (b) Control blinking

   (c) Focus light (d) Maintain pressure

5. Which layer contains rods and cones?

(a) Lens (b) Iris

(c) Retina (d) Sclera

6. Which nerve supplies the eyelid muscles?

(a) Optic nerve (b) Facial nerve

(c) Trigeminal nerve (d) Oculomotor nerve

7. Which extraocular muscle is responsible for abduction of the eye?

(a) Superior rectus (b) Inferior oblique

(c) Lateral rectus (d) Medial rectus

8. Scleral apertures are important for:

(a) Blood supply (b) Nerve passage

(c) Tear drainage (d) Retinal attachment

9. Which embryological structure develops into the lens?

(a) Lens vesicle

(b) Optic vesicle

(c) Retinal pigment epithelium

(d) Neural crest

10. Orbital fascia can be found in:

(a) Lens (b) Walls of the orbit

(c) Cornea (d) Iris

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the development and structure of the optic vesicle.

Or

(b) Write a short note on the anatomy and blood supply of the eyelid.

12. (a) What are the microscopic structures and functions of the conjunctiva?

Or

(b) Explain the main features and function of the lacrimal apparatus.

13. (a) Define and describe the structure of the iris.

Or

(b) State the arrangement and significance of zonular fibres in the lens.

14. (a) Explain the role of the anterior chamber and Schlemm's canal in ocular physiology.

Or

(b) Write briefly about the function and anatomy of the retina, rods, and cones.

15. (a) Describe the macroscopic features of the cornea.

Or

(b) List the extraocular muscles and their functions in eye movement.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the embryological development of the eye, including the formation of optic vesicle, lens vesicle, and associated mesenchyme.

Or

(b) Elaborate on the gross and microscopic anatomy of the orbit and orbital nerves, including surgical spaces and apertures at the base of the orbit.

17. (a) Detail the structure, blood supply, and nerve supply of the uvea, including the iris, ciliary body, and choroid.

Or

(b) Explain the anatomy of the visual pathway with neat, illustrated diagram

18. (a) Describe the structure and functions cranial nerves that connects with orbital system

Or

(b) Write a comprehensive note on the vitreous structure and its attachments

19. (a) Discuss the arrangement, origin, and insertion of extraocular muscles, including the anatomy of sphincter and dilator muscles.

Or

(b) Explain the dimensions, histology, and blood supply to the cornea, including special regions and scleral apertures.

20. (a) Compare the microscopic structure and blood supply of the lens and the anterior chamber.

Or

(b) Describe the functional inter-relationships between the central nervous system and the eye.

———————

C–7837	Sub. Code
	91424

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 1 = 10)$

Answer **all** questions.

1. Name the enzyme crucial for the active secretion of aqueous humor.
   (a) Na^+ / K^+ - Atpase
   (b) Carbonic Anhydrase
   (c) Lactate dehydrogenase
   (d) Acetyl cholinesterase

2. What does a diurnal variation test primarily measure?
   (a) Fluctuations in visual acuity
   (b) Changes in blood pressure
   (c) Changes in corneal thickness
   (d) Fluctuations in intra-ocular pressure

3. A lesion of the right optic tract results in which type of visual field defects?
   (a) Left homonymous hemianopia
   (b) Right homonymous hemianopia
   (c) Right anopia
   (d) Bitemporal hemianopia

4. What is the approximate volume of vitreous humor in a normal adult?

(a) 10 ml (b) 2 ml

(c) 4 ml (d) 12 ml

5. Which cranial nerve innervates the orbicularis oculi muscle?

(a) Cranial nerve III (b) Cranial nerve VII

(c) Cranial nerve IV (d) Cranial nerve II

6. What is the term for unequal size between the two eyes?

(a) Diplopia (b) Mydriasis

(c) Miosis (d) Anisocoria

7. In Snellen chart, a person with 6/6 vision can resolve details that subtend what minimum angle of resolution?

(a) 5 min of arc (b) 40 sec of arc

(c) 1 min of arc (d) 1 degree of arc

8. Fluorescein angiography is used to evaluate the integrity of which blood-ocular barrier?

(a) Blood - retinal barrier

(b) Blood - aqueous barrier

(c) Blood - corneal barrier

(d) Blood - vitreous barrier

9. How many removable caps are there in the Farnsworth Munsell 100 Hue test?

(a) 90 (b) 100

(c) 95 (d) 85

10. 'B' wave in ERG corresponds to the activity of

(a) Amacrine cells (b) RPE

(c) Muller cells (d) Photoreceptors

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the contact and non-contact method of measuring IOP.

Or

(b) List the functions of Uveal tissues.

12. (a) Define Accommodation and the mechanism of accommodation.

Or

(b) Discuss in brief about the Ocular changes in aging lens.

13. (a) Explain the laws of Ocular motor system.

Or

(b) Write about the secretion and formation of tear.

14. (a) Explain the process and the transmission of visual impulses in the Retina.

Or

(b) Brief on Visual angle.

15. (a) Write about the types of ERG.

Or

(b) Write in detail on the grades of Binocular Vision.

Part C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Write about Cornea and its transparency.

Or

(b) Discuss about the formation of aqueous humor and its functions.

17. (a) Lesions of Visual pathway.

Or

(b) Write in detail on the organization and the functions of the Retina.

18. (a) Discuss about Pupillary reflex.

Or

(b) Write in detail on dark adaptation and its mechanism.

19. (a) Discuss about Blood Ocular Barrier.

Or

(b) Elaborate on measurement of visual acuity.

20. (a) Elaborate on Color attributes and the tests for color vision assessment.

Or

(b) Write in detail on Amblyopia and its types.

C–7838	Sub. Code 91425

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

PHYSICAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The velocity of light in vacuum is

   (a) 3×10^8 m/s (b) 3×10^6m/s

   (c) 3×10^{10}km/s (d) Both (a) and (c)

2. Superposition principle applies to

   (a) Thermal waves

   (b) Magnetic waves

   (c) Simple harmonic waves

   (d) Radioactive waves

3. Interference is due to

   (a) Refraction of light

   (b) Superposition of waves

   (c) Single wave only

   (d) Dispersion

4. Newton's rings are due to

(a) Thin film interference

(b) Polarization

(c) Refraction

(d) Scattering

5. Diffraction is bending of light around

(a) Corners of obstacles

(b) Prism

(c) Lens

(d) None

6. Dispersive power is highest in

(a) Prism (b) Diffraction grating

(c) Lens (d) Mirror

7. Nicol prism is used to produce

(a) Reflection (b) Polarized light

(c) Diffraction (d) Interference

8. Optical activity is due to

(a) Rotation of plane polarized light

(b) Reflection of light

(c) Refraction of light

(d) None

9. Laser stands for

(a) Light Amplification by Stimulated Emission of Radiation

(b) Light Amplification by Spontaneous Emission of Radiation

(c) Low Amplification by Stimulated Emission

(d) None

10. Population inversion means

(a) Equal atoms in both states

(b) More atoms in ground states

(c) More atoms in excited state than ground state

(d) None

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write Short Notes on Group Velocity.

Or

(b) Give the mathematical expression for Simple Harmonic Motion.

12. (a) List out the necessary conditions for Sustained interference.

Or

(b) Discuss about the experimental arrangement For Fresnel Biprism.

13. (a) Enlist the difference between Fresnel diffraction and Fraunhoffer Diffraction

Or

(b) Discuss about fraunhoffer diffraction at circular aperture

14. (a) State and Explain Malu's Law

Or

(b) Give the construction and working of half wave plate

15. (a) Explain with a neat diagram about spontaneous emission and stimulated emission

Or

(b) Discuss about Photic and Scotopic efficiency curves.

Part C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Derive the expression for the superposition of two harmonic waves

Or

(b) Illustrate any one method to find the velocity of light.

17. (a) Describe young's double slit experiment and derive the expression for intensity at a point on the screen and fringe width

Or

(b) Discuss about air wedge experimental setup

18. (a) Give an account on the diffraction produces due to N slits

Or

(b) Deduce the expression for the resolving power of a telescope

19. (a) Give the construction and working of a Nickol prism and state how it can be used as a polarizer and analyzer.

Or

(b) Explain briefly on the analysis of Polarized light.

20. (a) State Einstein coefficients and also their relation between them

Or

(b) What is holography? Explain about the construction and reconstruction of hologram.

C–7839	Sub. Code 91427

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

MICROBIOLOGY & PATHOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Bacterias are

   (a) Prokaryotes (b) Eukaryotes

   (c) Spirochetes (d) Containing nucleus

2. Agar Agar is used in culture media. If is isolated from

   (a) Sugar cane (b) Fungi

   (c) Yeast (d) Sea Weed

3. The best example for diplococci is

   (a) Streptococci (b) Staphylococci

   (c) Pneumococci (d) Meningococci

4. Membranous conjunctivitis is caused by

   (a) Streptococci (b) Pneumococci

   (c) Gonococci (d) Diphtheriae

5. Retro viruses are containing

(a) SS DNA (b) dS DNA

(c) SS RNA (d) MRNA

6. "River blindness" is caused by

(a) Toxocara (b) Filaria

(c) Acanthamoeba (d) Toxoplasma

7. Fibroblast is contributes to the formation of

(a) Connective tissue (b) Cartilage

(c) Tendon (d) All the above

8. Appearance of new tissue formation after healing deep injury is known as

(a) Wound (b) Scar

(c) Pus (d) All the above

9. In lens induced glaucoma, the crystallin protein act as an

(a) antibody (b) antigen

(c) immune cell (d) immunoglobulin

10. Squamous cell carcinoma is occur in the

(a) eye lid (b) retina

(c) sclera (d) all the above

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short notes on ocular normal flora.

Or

(b) Discuss on microbial culture media.

12. (a) Give an account on ocular lesions and treatment of staphylococci.

Or

(b) Explain the characteristic features of tuberculosis.

13. (a) Write short notes on pathology and ocular lesions of adnovirus.

Or

(b) Comment on the pathology and ocular lesions of candida.

14. (a) Demonstrate the inflammatory reaction.

Or

(b) Mention the role of macrophages in an immunity.

15. (a) Analyse eye lid pathology.

Or

(b) Mention the lacrimal gland tumor.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Elaborate the physical and chemical methods of sterilization.

Or

(b) Explain the different techniques of ocular sample collection.

17. (a) List the important gram negative bacilli related with ocular lesions and explain.

Or

(b) Demonstrate the pathology and ocular lesions of spirochetes.

18. (a) Describe the clinical importance and ocular lesions of filaria and toxoplasma.

Or

(b) Illustrate the structure, pathology, ocular lesions and preventive measures of retro virus.

19. (a) Discuss the functions of fibroblast in repairing and heating mechanism.

Or

(b) What are injury causing agents? Mention the role of capillary in healing an injury.

20. (a) Remember the types and pathology of cataract.

Or

(b) Write short notes on :

(i) Malignant melanoma.

(ii) Keratoconus.

———————

C–7843	Sub. Code 91433

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

VISUAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The axial length of the eyeball is shorter than normal in

   (a) Hyperopia (b) Astigmatism

   (c) Myopia (d) All of the above

2. If the crystalline lens is dislocated forward it produces

   (a) Myopia (b) Hypermetropia

   (c) Presbyopia (d) Astigmatism

3. The vertical meridian is more curved than the horizontal in

   (a) with the rule astigmatism

   (b) against the rule astigmatism

   (c) oblique astigmatism

   (d) compound astigmatism

4. Dioptric power is reciprocal of

(a) Thickness (b) Focal power

(c) Focal length (d) Curvature

5. Refractive index of cornea is

(a) 1.376 (b) 1.363

(c) 1.386 (d) 1.406

6. Purkinje image is the result of

(a) Regular reflection (b) Irregular reflection

(c) None of these (d) Both (a) and (b)

7. Pinhole improves the visual acuity by

(a) coinciding the blur circle on retina

(b) placing the circle of least confusion of retina

(c) reducing the blur circle

(d) all of these

8. Anisekonia is corrected by

(a) Aspherical lens (b) cylindrical lens

(c) iseikonic lens (d) none of these

9. Latent hyperopia is unmasked by

(a) cycloplegics (b) fogging

(c) Maddox rod (d) pinhole

10. The strongest stimulus to accommodation is

(a) blurring of the retinal image

(b) sense of proximity

(c) image disparity

(d) none of these

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the definition, etiology and clinical features of hyperopia

Or

(b) Write about far point, near point, amplitude and range of accommodation

12. (a) Write about the schematic eye

Or

(b) Write about the relationship between ocular and spectacle refraction with examples

13. (a) Write about relative spectacle magnification with example

Or

(b) Write about the principle and procedure of JCC

14. (a) Write about the measurement of visual acuity

Or

(b) Write about vertex distance and vertex power also include the effect of vertex distance change

15. (a) Write about the procedure of binocular balancing (any 2 methods)

Or

(b) Write about schemer's disc experiment.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain about the optics of ocular structure including cornea and crystalline lens

Or

(b) Write in detail on the etiology, classification, clinical features and management of myopia

17. (a) Write about the principle, procedure and clinical application of retinoscopy

Or

(b) Write about the etiology and clinical features of anisometropia

18. (a) Write about the etiology, types, signs, symptoms and management of presbyopia

Or

(b) Write in detail on contrast sensitivity

19. (a) Write in detail on the relationship between accommodation and convergence

Or

(b) Write in detail on light and dark adaptation

20. (a) Write in detail on the prescribing prisms

Or

(b) Write in detail on the spectacle and ocular magnification also include RSM.

———————

C–7844	Sub. Code 91434

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

OPTOMETRIC OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. One of following is natural media used as spectacle lens

   (a) Flint glass (b) PMMA

   (c) PVC (d) Quartz

2. It parallel beam of light is converged to a focus behind the lens, the lens is said to be _____ lens

   (a) Converging

   (b) Diverging

   (c) Meniscus

   (d) All the above

3. Dioptric power of a lens is equivalent to its

   (a) Focal length

   (b) Reciprocal of focal length

   (c) Prism power

   (d) Dispersive power

4. If a plus lens is held in front of the eye and a horizontal line is newed through it, on moving the lens downwards, the horizontal line appears to more

(a) Downwards (b) Upwards

(c) To the left side (d) To the right side

5. A Best form spherical lens is

(a) Transposed lens

(b) + 2.00 DS BC lens

(c) Aberration free lens

(d) Biconcave lens

6. In cases of plano cylindrical line, prismatic effect using decentration

(a) Cannot be produced

(b) Can be produced in small range only

(c) Can be exerted in only one meridian where bioptric power is present

(d) All the above are true

7. _____ is a lens surface fault

(a) Cord (b) Striae

(c) Waves (d) Bubbles

8. 'Shoe' is a part of which part of the spectacle frame.

(a) Endpiece (b) Temple

(c) Nasal bridge (d) None of the above

9. _____ resists corrosion, malleable, accepts color well.

(a) Pure nickel (b) Aluminium

(c) Stainless silver (d) German silver

10. If a frame's dimensions are A = 50 and C = 48, with a frame difference of 8, what is B?

(a) 58 mm (b) 56 mm

(c) 52 mm (d) 42 mm

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give a brief account on sphero-cylindrical lenses.

Or

(b) Write the formula and find out the power of following focal lengths.

(i) –100 mm (ii) +625 mm

(iii) +14.29 cm (iv) –88.9 cm

12. (a) Give notes on Aspheric lenses.

Or

(b) Write about Fresnel prisms.

13. (a) List and describe the steps for lens surfacing.

Or

(b) Discuss about hi-index lenses.

14. (a) Draw and discuss about different types of temples in spectacle frames.

Or

(b) Draw a spectable frame. Mark the parts and enlist their functions.

15. (a) Give notes on any two lens materials.

Or

(b) Explain in brief about vertex distance and effective power calculation.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Bifocals – types, merits and demerits of each type. Explain in detail.

Or

(b) Discuss in detail about special types of spectacle frames.

17. (a) Explain the process of manufacturing glass.

Or

(b) List the faults in lens surface and the methods to examine them.

18. (a) Define properties of prism & refraction through prism.

Or

(b) Write in detail about progressive lenses.

19. (a) What are the aberrations that occur in ophthalmic lenses?

Or

(b) Types of lens coatings in detail.

20. (a) Write in detail about construction of a spectacle frame – its measurements and markings.

Or

(b) Magnification of plus lenses and Minification of Minus lenses. Explain in detail.

———————

C–7845

Sub. Code
91435

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

OCULAR DISEASES – I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Blepharitis is an inflammation of

   (a) Conjunctiva (b) Cornea

   (c) Eyelid margin (d) Lactimal sac

2. Ptosis refers to

   (a) Outward turning of eyelid

   (b) Drooping of upper eyelid

   (c) Inward turning of eyelid

   (d) Inflammation of eyelid

3. Follicles are commonly seen in

   (a) Allergic conjunctivitis

   (b) Viral conjunctivitis

   (c) Bacterial conjunctivitis

   (d) Chemical conjunctivitis

4. Pterygium commonly occurs on

(a) Temporal conjunctiva

(b) Upper fornix

(c) Nasal conjunctiva

(d) Inferior fornix

5. Keratitis refers to inflammation of

(a) Sclera (b) Conjunctiva

(c) Cornea (d) Iris

6. Hypopyon is accumulation of pus in

(a) Vitreous cavity

(b) Anterior chamber

(c) Posterior chamber

(d) Subconjunctival space

7. Blue sclera is seen in

(a) Kerato conus (b) Osteogenesis imperfecta

(c) Cataract (d) Glaucoma

8. Iridocyclitis is information of

(a) Iris alone

(b) Ciliary body

(c) Iris and ciliary body

(d) Choroid

9. Sympathetic ophthalmia usually follows

(a) Cataract surgery

(b) Penetrating Injury

(c) Glaucoma

(d) Ptosis

10. Buphthalmos is seen in

(a) Secondary Glaucoma

(b) Developmental Glaucoma

(c) Traumatic Glaucoma

(d) Phacolytic Glaucoma

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the causes and management of blepharitis.

Or

(b) Describe dacryocystitis with clinical features.

12. (a) Write about the clinical features and management of traumatic cataract.

Or

(b) Explain xerophthalmia and its ocular manifestations.

13. (a) Write about superficial keratitis.

Or

(b) Briefly explain corneal vascularization and its causes.

14. (a) What is sympathetic ophthalmia.

Or

(b) Describe rogt-Koyangi-Harada syndrome.

15. (a) Explain secondary glaucoma and its causes.

Or

(b) Types of cataract.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Enumerate and explain the congenital anomalies of eyelids with their clinical significance.

Or

(b) Explain about the disorders of Lacrimal gland with clinical features.

17. (a) Discuss degenerative conditions of conjunctiva.

Or

(b) Explain granulomatous conjunctivitis in detail.

18. (a) Write in detail about corneal ulcer-causes, clinical features, complications & management.

Or

(b) Explain fungal keratitis with clinical features and management.

19. (a) Discuss anterior uveitis-causes, clinical features and management.

Or

(b) Write in detail about Iridocyclitis.

20. (a) Explain about complicated cataract with causes and management.

Or

(b) Discuss POAG in detail.

C–7846	Sub. Code 91437

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following drugs is not an anticholinergic

   (a) Atropine (b) Cyclopentolate

   (c) Tropicamide (d) Phenylephrine

2. Cephalosporin is

   (a) antibiotic (b) antifungal

   (c) antiviral (d) antiallergic

3. From which of the following routes, the bioavailability of the drug's likely to be 100%

   (a) Subcutaneous (b) Intravenous

   (c) Intramuscular (d) Intradermal

4. Pharmacokinetics includes study of all except

   (a) Absorption (d) Distribution

   (c) adverse effects (d) Excretion

5. Beta blockers lower IOP by

(a) Decreasing trabecular outflow

(b) Decreasing aqueous production

(c) Increasing uveo-scleral outflow

(d) None

6. In which route, drug is applied on a particular area on a site of action is known as

(a) Systemic route (b) Enteral route

(c) Local route (d) Both (a) and (b)

7. Hyper osmotic agents will

(a) Raise IOP (b) Lower lop

(c) No effect in IOP (d) None

8. An inactive drug convert into an active form is known as

(a) Pro-drug (b) Soluble drug

(c) Polar drug (d) None of the above

9. Parasympathomimetic drugs are

(a) Cholinergic drugs

(b) Adrenergic agonists

(c) Beta adrenergic blockers

(d) Carbonic anhydrase inhibitors

10. Phase 1 reaction is a

(a) Synthetic reaction

(b) Non- synthetic reaction

(c) Rapid reaction

(d) Conjugation reaction

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about new drug delivery system

Or

(b) Write about dose response relationship

12. (a) Write about structure activity relationship

Or

(b) Write about nature and sources of drug

13. (a) Write about the drug metabolism and factors affecting drug metabolism

Or

(b) Write about ophthalmic antibiotics

14. (a) Write about anti adrenergic drugs

Or

(b) Write about topical anaesthetics

15. (a) Write about drug receptors

Or

(b) Write about preparation and packaging of ophthalmic drugs.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on antiglaucoma drugs

Or

(b) Write about opioid analgesics

17. (a) Write about drug absorption, distribution and factors affecting drug absorption and distribution

Or

(b) Write about general anesthetics in detail

18. (a) Explain about the routes of drug administration

Or

(b) Write about NSAID

19. (a) Write in detail on sedatives and hypnotics

Or

(b) Write in detail on ADR, its manifestations and treatment

20. (a) Write in detail on ophthalmic diagnostic drugs

Or

(b) Write in detail on ocular penetration, drug action and effectiveness.

———————

C–7847

Sub. Code
91443

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTATION & CLINICAL EXAMINATION OF THE VISUAL SYSTEM (CEVS)

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which type of prism is commonly used in binoculars?

   (a) Nicol prism (b) Porro prism

   (c) Brewster prism (d) Fresnel prism

2. Resolving power of a simple Microscope depends on

   (a) Focal length of the lens

   (b) Diameter of the lens

   (c) Both (a) and (b)

   (d) None

3. Spectrometer is primarily used for

   (a) measuring wavelength of light

   (b) measuring mass of atoms

   (c) magnifying small objects

   (d) splitting sound waves

4. Which test uses fan and block for astigmatism detection?
   (a) Duochrome test
   (b) Rotary astigmatic dial
   (c) Borish delay endpoint
   (d) Dyamic retinoscopy

5. Duochrome (Red-green) test works on principle of
   (a) fogging (b) chromatic aberration
   (c) polarization (d) accommodation lag

6. NRA PRA balance test is manly for
   (a) Astigmatism correction
   (b) Presbyopia add determination
   (c) Accommodation and convergence balance
   (d) All the above

7. Near subjective refraction should be performed
   (a) without fogging
   (b) with cycloplegia always
   (c) under binocular viewing condition
   (d) using retinoscopy alone

8. Dynamic retinoscopy is mainly indicated for
   (a) Near Add prescription
   (b) Binocular balancing
   (c) Accommodation assessment
   (d) Measuring IPD

9. Which cycloplegic is contraindicated in routine cycloplegic refraction for patients with seizure?
   (a) Tropicamide (b) Homatropine
   (c) Cyclopentolate (d) Phenylephrine

10. Which tonometer measures IOP by indentation?
   (a) Goldmann (b) Perkins
   (c) Schiotz (d) Pascal dynamic contour

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give short notes on history taking in diabetic patients.

Or

(b) What are the advantages of retinoscopy over auto refractometry?

12. (a) What is fogging? Why is it done?

Or

(b) Discuss the steps in measuring IPD manually.

13. (a) Explain in brief about Van Herrick method.

Or

(b) How to measure HVID? What are the indications?

14. (a) Broad H test – Write in brief. Give a neat diagram.

Or

(b) Write in brief about Random Dot Stereogram.

15. (a) Amsler Test – Give brief notes.

Or

(b) Uses of A scan.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Differentiate between simple and compound microscopes.

Or

(b) Write in brief about visual acuity assessment – commonly used charts, procedure and recording of the results.

17. (a) Write in detail about principle, procedure and endpoint of JCC.

Or

(b) What are the methods to measure the facets of accommodation?

18. (a) List the different illumination method used in slit lamp biomicroscopy.

Or

(b) Give a detailed account on dry eye assessment. Also mention any one questionnaire that is used to evaluate dry eye.

19. (a) Write in brief about pupillary evaluation.

Or

(b) Principle, indications, procedure and normative value in pachymetry.

20. (a) List the components of a Humphrey visual field report.

Or

(b) Enumerate and discuss the uses of laser in Ophthalmology.

C–7848

Sub. Code
91444

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

OCULAR DISEASES – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is the most common cause of vitreous hemorrhage in adults?

   (a) Retinal vein occlusion

   (b) Retinal tear

   (c) Trauma

   (d) Diabetic Retinopathy

2. 'Cherry red spot' is seen in

   (a) CRAO (b) CRVO

   (c) BRVO (d) Diabetic retinopathy

3. 'Morning glory syndrome' is a congenital anomaly of

   (a) Retina (b) Optic nerve

   (c) Cornea (d) Vitreous

4. Hydrocephalus produces papilledema by
   (a) increased venous return
   (b) raised intra cranial pressure
   (c) arterial vasospasm
   (d) direct optic nerve infiltration

5. Horner's syndrome includes all except
   (a) Ptosis (b) Miosis
   (c) Anhidrosis (d) Mydriasis

6. Essential blepharospasm is characterized by
   (a) involuntary eyelid closure
   (b) ptosis
   (c) weak eyelids opening
   (d) swelling of eyelid

7. Ocular myotonic dystrophy commonly presents with
   (a) ptosis and cataract (b) retinal regeneration
   (c) conjunctivitis (d) optic atrophy

8. Vertical gaze palsy is commonly caused by lesion in _____.
   (a) Mid brain (b) Pons
   (c) Medulla (d) Spinal cord

9. Cafe-au-lait spots are characteristic of
   (a) Retinitis pigmentosa
   (b) Neurofibromatosis
   (c) Myasthenia gravis
   (d) Pituitary adenoma

10. A lesion of optic radiation (temporal lobe) produces
   (a) Superior quadrantanopia
   (b) Inferior quadrantanopia
   (c) Central scotoma
   (d) Bitemporal hemianopia

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) List the advantages of using direct Ophthalmoscopes.

Or

(b) Write in brief about Amblyopia.

12. (a) List the parameters to be evaluated in an optic disc.

Or

(b) List the clinical features of Giant cell arteritis.

13. (a) What are the causes of Raised intracranial pressure?

Or

(b) Write in brief about papilledema and its clinical features.

14. (a) Explain with the help of a diagram about relative afferent papillary defect.

Or

(b) List the types of nystagmus and their potential causes.

15. (a) Give a neat diagram of visual pathway and explain its parts.

Or

(b) Give a brief account on myasthenia gravis and its ocular features.

Part C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail about optic neuritis and its types and clinical features.

Or

(b) Give notes on visual field defects relating to the lesions in the visual pathway.

17. (a) Write in detail about anterior ischemic optic neuropathy.

Or

(b) Give an account on types, features and management of retinal detachment.

18. (a) Compare and contrast between Kjer, Behr and Wolfram syndrome.

Or

(b) Write in detail about clinical features and differential diagnosis of Papilledema.

19. (a) Write in detail about abnormal pupillary reactions.

Or

(b) Give a detailed account on 3rd nerve palsy and tests to diagnose them.

20. (a) Write in detail about thyroid related ophthalmopathy.

Or

(b) Give notes on disorders of optic chiasm.

———————

C–7849	Sub. Code 91446

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

OCCUPATIONAL OPTOMETRY & COMMUNITY OPTOMETRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is not a principle of occupational health?

   (a) Prevention of occupational diseases

   (b) Promotional general health and well-being

   (c) Treatment of all chronic diseases unrelated to work

   (d) Adaptation of work to man and man to work

2. The most common occupational disease among coal miners is:

   (a) Byssinosis (b) Silicosis

   (c) Anthracosis (d) Bagassosis

3. Under the Factories Act, creche facility is mandatory if a factory employs more than:

   (a) 10 women (b) 20 women

   (c) 30 women (d) 50 women

4. Arc welders are most prone to which eye condition due to UV radiation?

(a) Snow blindness

(b) Photokeratitis (welders flash)

(c) Retinitis pigmentosa

(d) Glaucoma

5. The most effective method of controlling occupational hazards is:

(a) Personal protective equipment (PPE)

(b) Substitution of hazardous process/material

(c) Administrative control

(d) Periodic medical examination

6. The recently emphasized additional dimension of health in public health discourse is:

(a) Spiritual health (b) Financial health

(c) Genetic health (d) Political health

7. Which of the following is a negative indicator of health?

(a) Life expectancy (b) Infant mortality rate

(c) Literacy rate (d) Nutritional status

8. The most common cause of preventable blindness in India is:

(a) Corneal opacity (b) Cataract

(c) Glaucoma (d) Diabetic retinopathy

9. Vision 2020: The Right to Sight — India was launched jointly by:

(a) WHO & UNICEF (b) WHO & IAPB

(c) ICMR & AIIMS (d) DGHS & NPCB

10. National Programme for Control of Blindness and Visual Impairment (NPCBVI) was revised and integrated with:

(a) Ayushrnan Bharat

(b) National Health Mission (NHM)

(c) Janani Suraksha Yojana

(d) Rashtriya Bal Swasthya Karyakram (RBSK)

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write in short about factories act.

Or

(b) List some of the occupational diseases caused by chemical agents.

12. (a) Discuss in brief about light and its units.

Or

(b) Color theory – write a brief note.

13. (a) Discuss in brief about mortality indicators.

Or

(b) List the major determinants of health.

14. (a) Compare and contrast the clinical and community health programs.

Or

(b) Write about nutritional blindness.

15. (a) How does teleoptometry work?

Or

(b) What are the tangible and intangiable costs of refractive errors occuring in children?

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail about the role of international and national bodies in occupational health.

Or

(b) Write in detail about UV radiation and its harmful effects in workplace.

17. (a) Write in detail about color vision defects and its impact on occupational choices.

Or

(b) Write in detail about industrial vision screening for unorganized sectors.

18. (a) Write in detail about indicators of health.

Or

(b) Write about levels of health care patterns giving examples from eye care practice.

19. (a) Organize and plan a school eye screening on behalf of your institution. List the objectives and cut out the referral criteria.

Or

(b) Elaborate on action plans of NDCB and its role on eradication of avoidable blindness.

20. (a) Write in detail about key focus areas of health economics in eye care.

Or

(b) Importance of telemedicine and its application in community optometry.

C–7850	Sub. Code 91447A

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

HOSPITAL PROCEDURES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which instrument is used to measure blood pressure?

   (a) Stethoscope (b) BP Apparatus

   (c) ECG Machine (d) Otoscope

2. What should be the first step before performing hand hygiene?

   (a) Wearing gloves

   (b) Using sanitizer

   (c) Wetting hands with water

   (d) Applying lotion

3. What is the purpose of TPR charting?

   (a) Tracking medication doses

   (b) Monitoring vital signs

   (c) Sterilizing equipment

   (d) Administering anesthesia

4. Which indicates correct scrubbing technique before surgery?

   (a) Using only water

   (b) Scrubbing hands and forearms for specified duration

   (c) Using dry cloth

   (d) Scrubbing only fingertips

5. Which sterilization method uses high-pressure steam?

   (a) Chemical sterilization

   (b) Gas sterilization

   (c) Steam sterilization

   (d) Dry heat sterilization

6. IPC stands for:

   (a) Intensive Patient Care

   (b) Infection Prevention and Control

   (c) Immediate Procedure Care

   (d) Internal Pathology Criteria

7. Which indicator signals proper sterilization in an autoclave?

   (a) Color change of chemical indicator

   (b) High temperature only

   (c) Time elapsed

   (d) Sound alarm

8. Which procedure is most suitable for surgical instrument sterilization?

   (a) Disinfection with alcohol

   (b) Steam sterilization

   (c) Chemical wiping

   (d) Radiation only

9. Eye dressings in post-op care should be applied:

(a) Without washing hands

(b) After disinfecting the area

(c) With unsterile gauze

(d) Only to the patient's right eye

10. Which is a standard precaution for infection control?

(a) Ignoring patient isolation

(b) Use of PPE

(c) Skipping hand hygiene

(d) Sharing instruments

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain any four vital signs and their clinical significance.

Or

(b) Describe the correct technique and steps for proper hand hygiene.

12. (a) List common haematology tests and explain their utility in clinical practice.

Or

(b) Write a short note on specimen collection and handling procedures.

13. (a) What are the steps involved in admission and discharge of patients?

Or

(b) Define and distinguish between different methods of sterilization (steam, dry heat, chemical).

14. (a) Outline the standard precautions in infection prevention and control.

Or

(b) Enumerate any four common ophthalmic surgical instruments and their uses.

15. (a) Briefly explain the purpose and procedures in TPR charting.

Or

(b) State the uses and indications for BP apparatus and stethoscope in hospital procedures.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss in detail the process and quality control of sterilization including the various methods

Or

(b) Describe common clinical laboratory procedures, including haematology, chemistry, and microbiology tests.

17. (a) Explain the roles, procedures, and equipment involved in ophthalmic operating room practices for cataract and glaucoma surgeries.

Or

(b) Illustrate the infection prevention and control measures in healthcare, including surveillance, outbreak management, and quality improvement.

18. (a) Write a comprehensive note on medical administration routes and challenges in hospitals

Or

(b) Discuss the principles, indications and techniques for specimen collection, handling, and transport in clinical laboratories

19. (a) Explain the demonstration and importance of proper scrubbing, gowning, and gloving in operating theatres.

Or

(b) Explain patient education and counselling in infection prevention and control (IPC).

20. (a) Describe the steps for blood collection and analysis in the hospital setting.

Or

(b) Compare and contrast admission and discharge procedures, and their impact on patient care.

C–7851	Sub. Code 91447B

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

QUALITY AND PATIENT SAFETY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which ten refers to continuous improvement in healthcare processes?

   (a) Quality Control (b) Quality Management

   (c) Quality Audit (d) Quality Assurance

2. Which color bay is used for infectious biomedical waste?

   (a) Red (b) Black

   (c) Yellow (d) Blue

3. What is the first step in biomedical waste management?

   (a) Segregation (b) Incineration

   (c) Transportation (d) Disposal

4. Which organization introduced the concept of Quality in Healthcare"?

   (a) FAO (b) UNICEF

   (c) UNO (d) WHO

5. Which principle ensures healthcare decisions are based on scientific data?

(a) Random Decision Making

(b) Evidence — based Practice

(c) Trial & Error

(d) Tradition based Care

6. Which diagram is used to analyze the root cause of the problem?

(a) Scatter plot (b) Fishbone diagram

(c) Pareto chart (d) Histogram

7. Which of the following is a benefit of effective communication in healthcare?

(a) Reduced medical errors

(b) Higher infection rates

(c) Longer Hospital stays

(d) Increased Conflicts

8. What is the maximum time the biomedical waste can be stored before treatment?

(a) 12 hours (b) 24 hours

(c) 48 hours (d) 72 hours

9. Which of the following is the type of Anti-biotic resistance?

(a) Non-Intrinsic Resistance

(b) Multidrug Resistance

(c) Anti-microbial Resistance

(d) Acquired Resistance

10. Incineration is not recommended for

(a) Human Anatomical waste

(b) Cytotoxic drug

(c) Microbiology waste

(d) Animal body parts

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the basics of Quality Management.

Or

(b) Write notes on Quality Management tools.

12. (a) Discuss about the Quality Assurance in hospital facility.

Or

(b) Write about the process involved in Quality Assurance in emergency department.

13. (a) Discuss on the collection and storage of bio-medical wastes.

Or

(b) Write about the segregations of bio-medical wastes.

14. (a) What are the types of anti-biotic resistance?

Or

(b) Write about the Patient Safety Framework.

15. (a) Discuss the strategies to combat anti-biotic resistance.

Or

(b) Write notes on infection prevention.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on healthcare and climate change.

Or

(b) Elaborate on Quality Assurance in hospital functions.

17. (a) Explain about the treatment and disposal of bio-medical wastes.

Or

(b) Write in detail on the color codes used for bio-medical wastes.

18. (a) What is the role of the Clinicians in Quality and patient safety?

Or

(b) Write the consequences of anti-biotic resistance.

19. (a) Explain about the mechanisms of anti-biotic resistance

Or

(b) Environmental impact of bio-medical wastes.

20. (a) Write about the role of effective communication to deliver Quality Healthcare.

Or

(b) Brief about the monitoring of clinical and managerial indicators

———————

C–7852	Sub. Code 91451

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

CONTACT LENS - I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Hydrogels are commonly used in

   (a) RGP (b) Soft CL

   (c) PMMA (d) None of the above

2. Choose the systemic condition which is a risk factor for wearing contact lenses

   (a) Gastroesophageal reflux

   (b) Hypertension

   (c) Hyperthyroidism

   (d) None of the above

3. Corneal sensitivity is test using

   (a) Topographer

   (b) Tonometer

   (c) Aesthesiometer

   (d) Autorefractor

4. Fcl =

(a) Fsp/1–dfsp (b) Fsp/1+dfsp

(c) Fsp ×1–dFsp (d) Fsp / Dcl

5. The shape of the cornea is best described as

(a) A prolate ellipse

(b) An oblate ellipse

(c) An hyperbolic spheroid

(d) A parabolic spheroid

6. Expand SPK

(a) Superficial punctate keratitis

(b) Superior Punctate keratitis

(c) Superior purulent keratitis

(d) Superficial purulent keratitis

7. The mucus layer of the tear film is produced by

(a) Conjunctival goblet cells

(b) Glands of zeiss

(c) Glands of Krause

(d) Aqueous humor

8. Ideal CL Property are

(a) Oxygen Permeability

(b) Durability

(c) Physiologically inert

(d) All of these

9. Dk denotes

(a) Oxygen Permeability

(b) Equivalent oxygen performance

(c) Oxygen transmissibility

(d) None of the above

10. Lid tension plays a vital role in the selection of

(a) Lens diameter (b) Material

(c) Base curve (d) Power

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) List out the indications of contact lenses.

Or

(b) Write about parameters selection in contact lens fitting.

12. (a) Write about the use of corneal topographers in contact lens fitting.

Or

(b) Write about the properties of contact lens materials.

13. (a) Write about the contraindications of contact lenses.

Or

(b) Write about the ocular structures Concerned with contact lens fitting and its evaluation.

14. (a) Write about the indications and role of contact lenses fitting in children.

Or

(b) Define GPC, SPK, CLARE and hypoxia.

15. (a) Define BOZR, BOZD and base curve.

Or

(b) Write about contact lens insertion and removal technique.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on toric contact lenses.

Or

(b) Write in detail about the corneal physiology and the use of contact lens.

17. (a) Write in detail on the effects of RGP lens parameter changes on lens fitting.

Or

(b) Write in detail on recent developments in contact lenses.

18. (a) Write in detail on the care and maintenance of contact lenses.

Or

(b) Write about contact lens fitting in keratoconus and explain the parameters to be evaluated and lens selection.

19. (a) Write in detail on the role of instrumentation in contact lens practice.

Or

(b) Write in detail on soft contact lens fitting.

20. (a) Write in detail on cosmetic and therapeutic contact lenses.

Or

(b) Explain in detail on the optics of contact lenses with a neat diagram.

———————

C–7853	Sub. Code 91452

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

BINOCULAR VISION - I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. When tested with a distant worth 4 dot test, how many dots would a patient with diplopia report to see?

   (a) 8 (b) 5

   (c) 4 (d) 2

2. The superior, inferior, medial and lateral rectus muscle arise from

   (a) Maxillary region (b) Annulus of zinn

   (c) Spiral of tilax (d) None of the above

3. The primary action of medial rectus is

   (a) Elevation (b) Intorsion

   (c) Adduction (d) Abduction

4. The principle of synoptophore is

   (a) Haploscopic principle

   (b) Fusion

   (c) SMP

   (d) Retinal correspondence

5. Which one of the following is not the sensory aspect of binocular vision?

(a) Convergence (b) Fusion

(c) Steropsis (d) SMP

6. The torsional movement of the eye are also called as

(a) Rotary movement

(b) Translatory movement

(c) Intraocular movement

(d) None of the above

7. Which one of the following is the clinical sign of convergence insufficiency?

(a) Exophoria greater at near than distance

(b) Esophoria greater at near than distance

(c) High AC/A ratio

(d) None of the above

8. Lead in MEM is seen in

(a) Accomodative insufficiency

(b) Accomodative excess

(c) Accomodative infacility

(d) Both (b) and (c)

9. The random dot targets in stereopsis test, assess the

(a) Global stereopsis

(b) Local stereopsis

(c) Contour stereopsis

(d) Peripheral stereptosis

10. Angle kappa is the angle formed at the intersection of

(a) Optical and fixation axis

(b) Visual and optical axis sight and pupillary axis

(c) Visual and pupillary axis

(d) Line of sight and pupillary axis

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b)

11. (a) Explain relative subjective visual direction and common subjective visual direction with neat diagram.

Or

(b) Write about the nerve supply of extraocular muscles.

12. (a) Define stereopsis, panum's area and horopter with neat diagram.

Or

(b) Write notes on herring's law and sherrington's law.

13. (a) Explain the procedure of NRA and PRA.

Or

(b) Write uniocular and binocular movements

14. (a) Define accommodation and Write about the mechanism of accommodation.

Or

(b) Write notes on monocular clues.

15. (a) Write about the types and components of convergence.

Or

(b) Define saccades, pursuits, vergence and versions.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write about the investigations and management of suppression.

Or

(b) Write in detail on the grades of BSV.

17. (a) Define Amblyopia and write about the etiology, investigations and management of amblyopia.

Or

(b) Write in detail on the methods of measurement of accommodation.

18. (a) Explain the anatomy of extraocular muscles with neat diagram.

Or

(b) Write about the clinical features and management of the anomalies of accommodation.

19. (a) Define Abnormal retinal correspondence and write about the investigations and treatment of ARC.

Or

(b) Explain in detail on the optics, principle, instrumentation and procedure of synoptophore.

20. (a) Write in detail on the tests for stereopsis.

Or

(b) Write in detail on the physiology of extra ocular muscles and also explain on the action of individual muscle.

———————

C–7854	Sub. Code 91453

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

PEDIATRIC AND GERIATRIC OPTOMETRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Fixation develops by _____.

   (a) 6 months (b) Birth

   (c) 2-3 months (d) 2-4 weeks

2. Horner's syndrome presents with all the following except

   (a) Heterochromia iridis

   (b) Anhydrosis of ipsilateral side

   (c) Anisocoria increasing in bright illumination

   (d) Miosis

3. The red reflex test is used to assess

   (a) Accommodation

   (b) Visual acuity

   (c) Optic nerve function

   (d) Ocular alignment

4. Crowding phenomenon is characterized by

(a) Increase in performance when reading a single optotype

(b) Increase in performance after repeated testing

(c) Increase in performance on charts with multiple optotype

(d) None of the above

5. The alignment assessment when the paretic eye is fixating is known as

(a) Primary deviation

(b) Secondary deviation

(c) Consecutive deviation

(d) Comitant deviation

6. When tested with a distant worth 4 dot test, how many dots would a patient with diplopia report to see

(a) 8 (b) 5

(c) 4 (d) 2

7. The superior, inferior, medial and lateral rectus muscle arise from

(a) Maxillary region (b) Annulus of zinn

(c) Spiral of tilax (d) None of the above

8. Expand TORCH.

(a) Toxoplasmosis Rubella Cytomegalo virus and Histoplasmosis

(b) Toxocariosis Rubella Cytomegalo virus and Histoplasmosis

(c) Tuberculosis Rubella Cytomegalo virus and Herpes

(d) None of the above

9. Which of the congenital ocular disorder is most commonly associated with paradoxical pupils

(a) Aniridia

(b) Anterior segment dysgenesis

(c) Retinal dystrophy

(d) Cerebral visual impairment

10. Lens develops from

(a) Endoderm (b) Neuroectoderm

(c) Mesoderm (d) Surface ectoderm

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Classify the tests used in the assessment of visual acuity in pediatric subjects according to the age of the patient.

Or

(b) Write about the clinical features and management of albinism.

12. (a) Write about the classification of amblyopia.

Or

(b) Explain the causes, clinical features and management of myopia.

13. (a) Write about MEM.

Or

(b) Write about anterior segment dysgenesis.

14. (a) Classify the types of strabismus.

Or

(b) List out the common ocular diseases in elderly.

15. (a) Define glaucoma and write about the types of glaucoma.

Or

(b) Write about consideration of spectacle lenses and frames during spectacle dispensing in geriatric population.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on pediatric history taking.

Or

(b) Write in detail on pediatric cataract.

17. (a) Explain in detail on visual milestones.

Or

(b) Explain in detail on the clinical features, investigations and management of ROP.

18. (a) Write about refractive examinations in pediatric subjects.

Or

(b) Write in detail on structural and morphological changes of eye in elderly.

19. (a) Write in detail on the investigations and treatment options of nystagmus.

Or

(b) Explain in detail on low vision assessment in children.

20. (a) Write about the tests of BSV.

Or

(b) Write in detail on macular disorders in geriatric subjects.

———————

C–7855	Sub. Code 91454

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

DISPENSING OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Polycarbonate lenses have a refractive index of

   (a) 1.58 (b) 2.38

   (c) 3.28 (d) 2.58

2. In soft design PAL the intermediate zone is

   (a) shorter (b) longer

   (c) both (a) and (b) (d) none of these

3. Pin cushion effect is the result of

   (a) decreased magnification towards lens periphery

   (b) increased magnification towards lens periphery

   (c) dispersion

   (d) none of these

4. The geometric center distance of a frame can also be termed any of the following except

   (a) frame center distance

   (b) DBC

   (c) Frame PD

   (d) Frame difference

5. Prentice's rule is used to calculate

(a) add power

(b) induced prism power

(c) crossed cylinder power

(d) induced cylindrical power

6. The refractive index of a given lens material is a measure of its

(a) transparency

(b) specific gravity

(c) resistance to speed of light

(d) diffusion

7. The major reference point of an ophthalmic lens is

(a) same as OC

(b) point that corresponds to geometric center of eyewire

(c) point that is half the effective diameter

(d) point that has desired amount of prismatic effect

8. If the neutralizing power of a lens is + 2.00 the dioptric value of that lens is

(a) –2.00 D (b) +2.00 D

(c) +4.00 D (d) none of these

9. The pantoscopic tilt given in PAL is generally

(a) 10-12 degrees

(b) 20-22 degrees

(c) 12-14 degrees

(d) 8-10 degrees

10. ARC consists of extremely thin layer of

(a) calcium fluoride

(b) magnesium fluoride

(c) sodium fluoride

(d) none of these

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about progressive lens markings.

Or

(b) Write about the components of spectacle prescription.

12. (a) Write about the types and parts of spectacle frame.

Or

(b) Write about the characteristics of tinted lenses.

13. (a) Write about the inspection of lens quality.

Or

(b) Write about frame selection based on professional requirement.

14. (a) Write about IPD measurement.

Or

(b) Write about the properties of ophthalmic lenses.

15. (a) Write about special purpose frames

Or

(b) Write about the principle and construction of ARC.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on transposition with examples.

Or

(b) Write about spectacle frame measurements and markings.

17. (a) Write in detail on safety standards of ophthalmic lenses.

Or

(b) Write in detail on aspheric lenses.

18. (a) Explain in detail on various types of lens materials.

Or

(b) Write in detail on bifocal lenses.

19. (a) Write in detail on faults of lens surface.

Or

(b) Write in detail on progressive addition lenses.

20. (a) Write in detail on lens surfacing.

Or

(b) Write about troubleshooting in PALs

———————

C–7856	Sub. Code 91456A

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

RESEARCH METHODOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Questionnaire should be

   (a) Brief (b) Simple

   (c) Unclear (d) Both (a) and (b)

2. Hypothesis is

   (a) Post research thinking

   (b) Pre research thinking

   (c) Both (a) and (b)

   (d) Type of research

3. Which of the following is not an element of analysis of results?

   (a) Classification

   (b) Tabulation

   (c) Statistical analysis

   (d) Case study

4. Source of primary data is

(a) Public documents

(b) Autobiography

(c) Diary

(d) Questionnaire

5. What is a schedule?

(a) a machine (b) a study

(c) a law (d) list of questions

6. Stratified sampling is

(a) Method of sampling

(b) Hypothesis

(c) Questionnaire

(d) Both (b) and (c)

7. Importance of collection of data is

(a) Perception of reality

(b) Helpful in problem solving

(c) Base of research

(d) All of the above

8. Which of the following is defined as a systematic method of evaluating statistical data based on the results of several independent studies of the same problem

(a) factor analysis

(b) meta analysis

(c) systematic analysis

(d) none of the above

9. The depth of any research can be judged by

(a) Title of the research

(b) Objectives of the research

(c) Total expenditure on the research

(d) Duration of the research

10. Which of the following is not correct?

(a) Good research is systematic

(b) Good research is logical

(c) Good research is empirical

(d) Good research should be complicated

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about the objectives of research.

Or

(b) Write notes on the meaning of research and interpretation.

12. (a) Write notes on the significance of report writing.

Or

(b) Write notes on selecting the research problem.

13. (a) Write about primary and secondary data.

Or

(b) List out the objectives of research.

14. (a) Write notes on census and sample survey.

Or

(b) Explain the basic features of research design.

15. (a) List out the criteria for good research.

Or

(b) Write about the characteristics of good sample design.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on the basic principles of experimental design.

Or

(b) Explain in detail on layout of research report with an example.

17. (a) Write about the different types of report.

Or

(b) Explain in detail on selecting the research problem and the techniques involved in defining the research problem.

18. (a) Explain the steps involved in report writing.

Or

(b) Explain about testing of hypothesis and chi-square test.

19. (a) Explain the types of research with a flow chart.

Or

(b) Explain detail on the types of analysis.

20. (a) Explain in detail on sampling designs and its types.

Or

(b) Write in detail on the methods of data collection.

———————

C–7857	Sub. Code 91456B

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

BIOSTATISTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. A specific characteristic of a population is known as
   (a) Statistic (b) Parameter
   (c) Variable (d) Sample

2. A part of the population selected for a study is called
   (a) Variable (b) Data
   (c) Sample (d) Parameter

3. Monthly rainfall in a city during last 10 years is an example of a
   (a) Discrete variable
   (b) Continuous variable
   (c) Qualitative variable
   (d) Independent variable

4. Method of organizing, summarizing and presenting data in an informative way is known as
   (a) Descriptive statistics
   (b) Inferential statistics
   (c) Theoretical statistics
   (d) Applied statistics

5. The arithmetical average of number of observations is called

(a) Mean (b) Median

(c) Range (d) All of the above

6. A statistical test which indicated the chance or probability of an observed difference between two means occurring by chance is called

(a) Test of significance

(b) Mean

(c) Ratio

(d) Normalcy

7. Ranking students from an individual with the highest GPA to the lowest GPA is an example of

(a) Ordinal scale

(b) Nominal scale

(c) Interval scale

(d) Ration scale

8. Which types of study follows patients over time to observe outcomes?

(a) Cross-sectional Study

(b) Cohort Study

(c) Case Report

(d) Ecological Study

9. When calculating median of a data set, the first step is

(a) Calculate the mean of the middle two items in the data set

(b) Arrange the data in an ascending or descending order

(c) Determine the relative weights of the data value in terms of importance

(d) None of the above

10. The square of standard deviation is called

(a) Quartile deviation

(b) Range

(c) Variance

(d) Mean absolute deviation

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b)

11. (a) Define mean, median and mode with an example for each.

Or

(b) Classify the types of sampling.

12. (a) Explain skewness and kurtosis.

Or

(b) Differentiate between nominal and binominal distribution.

13. (a) Explain regression analysis with an example.

Or

(b) Write notes on the statistical significance of sampling.

14. (a) Write about the properties of chi square distribution.

Or

(b) Write notes on regression analysis.

15. (a) Define data, variables, hypothesis and probability.

Or

(b) Write notes on type of errors.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on the different types of sampling.

Or

(b) Write in detail on the analysis of daily hospital statistics.

17. (a) Explain chi square test with an example.

Or

(b) Write about the role of diagrammatic representation in research each with an example.

18. (a) Explain in detail on binominal distribution with an example.

Or

(b) Write about the different types of clinical study designs.

19. (a) Explain the calculation of standard deviation with an example and write about its applications in research.

Or

(b) Explain the different measures of central tendency and describe in detail about mean, median and mode with suitable example.

20. (a) Explain probability sampling with an example.

Or

(b) Write in detail on data and variables in biostatistics.

C–7858	Sub. Code 91461

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Optometry

CONTACT LENS – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. During slit Lamp assessment, a well-fitting soft contact Lens should show:
   (a) No movement at all
   (b) Lens Lagging and decentration
   (c) >3 mm movement with blink
   (d) 1–2 mm movement with blink

2. A fluorescein pattern showing a central area of pooling with mid-peripheral touch in RGP lens fitting indicates:
   (a) Flat fit (b) Steep fit
   (c) Optimal fit (d) Decentered fit

3. Low oxygen transmissibility cannot result in
   (a) Microcysts (b) Polymegathism
   (c) Arcus sénilis (d) Blebs

4. The RGP material that has the advantage of high refractive index and low specific gravity is

(a) PMMA (b) CAB

(c) t butyl sterene (d) Siloxane acrylate

5. The most commonly used stabilisation technique in soft toric lenses is:

(a) Prism ballast (b) Fenestration

(c) Truncation only (d) Double slab-off

6. The most significant ocular risk associated with overnight Ortho-K wear is:

(a) Allergic conjunctivitis

(b) Microbial keratitis

(c) Corneal vascularization

(d) Cataract formation

7. Ortho-K lenses are most commonly prescribed for correction of:

(a) High myopia (b) High hyperopia

(c) Presbyopia (d) Low-to-moderate myopia

8. The contact lens of choice for unilateral aphakia in children is:

(a) Rigid gas permeable (RGP) lens

(b) Soft hydrogel lens

(c) Cosmetic tinted lens

(d) Scleral lens

9. Giant papillary conjunctivitis (GPC) in soft lens wear is most commonly caused by:

(a) Solution hypersensitivity

(b) Protein deposits on the lens surface

(c) Hypoxia

(d) Poor blinking

10. Which component in a multipurpose solution primarily acts as an antimicrobial preservative?

(a) EDTA

(b) Hydroxypropyl methylcellulose

(c) Polyhexamethylene biguanide (PHMB)

(d) Buffers

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write in brief about PHEMA and HEMA as contact lens materials.

Or

(b) Advantages and disadvantages of spin casting as a manufacturing method.

12. (a) Write in short about indications of a soft toric CL.

Or

(b) How to select parameters for a soft toric CL.

13. (a) What are the advantages and disadvantages of RGP contact lens?

Or

(b) Describe the characteristics of a steep fitting RGP CL.

14. (a) Give brief notes on cleaning agents and its importance.

Or

(b) Do's and Don'ts with RGP lens.

15. (a) What are the indications for contact lens fitting in pediatric population?

Or

(b) What are the important points to be considered in fitting pediatric aphake approximately one year old?

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail about fitting philosophy of SCL.

Or

(b) Compare RGP with SCL.

17. (a) Describe the types of fit in SCL and its characteristics with diagrams.

Or

(b) Advantages & disadvantages of lathing technique.

18. (a) Fitting of CL in Keratoconus patients.

Or

(b) Describe in detail about ortho-k lenses.

19. (a) Write in detail about components of a CL multipurpose solution.

Or

(b) Write detail about care and maintenance of a RGP CL.

20. (a) Write elaborately on types of prosthetic contact lenses.

Or

(b) Contact lens fitting in post refractive surgery corneas.

C–7859	Sub. Code 91462

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

BINOCULAR VISION – II

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The Maddox wing test is best suited for measuring:
   (a) Distance phoria (b) Near phoria
   (c) Fusion reserves (d) Depth perception

2. Bagolini striated lenses are used to:
   (a) Assess retinal correspondence
   (b) Train accommodation
   (c) Detect astigmatism
   (d) Measure corneal curvature

3. The development of abnormal retinal correspondence is an example of:
   (a) Sensory adaptation
   (b) Motor adaptation
   (c) Neurological adaptation
   (d) None of the above

4. A patient with right sixth nerve palsy will most likely adopt which posture?

   (a) Head turn to right side

   (b) Head turn to left side

   (c) Chin elevation

   (d) Chin depression

5. A child with high hypermetropia is most likely to develop:

   (a) Exophoria

   (b) Accommodative esotropia ans

   (c) Divergence insufficiency

   (d) Intermittent exotropia

6. In partially accommodative esotropia, management usually involves:

   (a) Glasses only

   (b) Surgery only

   (c) Glasses + possible surgery

   (d) Occlusion therapy only

7. Duane s Retraction Syndrome is most commonly due to:

   (a) Misinnervation of the lateral rectus by the third nerve

   (b) Paralysis of superior oblique

   (c) Restriction by orbital fracture

   (d) Fibrosis of medial rectus

8. The key difference between paralytic and restrictive squints is that restrictive squints

   (a) Have diplopia in all gaze directions

   (b) Show positive forced duction test

   (c) Have alternating deviation

   (d) Always present in childhood

9. The Brock string exercise primarily trains:
   (a) Monocular acuity
   (b) Convergence and awareness of physiological diplopia
   (c) Accommodation
   (d) Vergence facility

10. Balance board is useful to train patients with
   (a) Oculomotor functional deficits
   (b) Amblyopia
   (c) Postural instabilities
   (d) All the above answers

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Write in brief about maddox rod.

Or

   (b) What are the uses of synoptophore?

12. (a) Discuss in brief about management of infantile isotropia.

Or

   (b) Draw a brief picture on classification of convergent squint.

13. (a) What are the clinical features of sixth nerve palsy?

Or

   (b) List the difference between comitant and incomitant squint.

14. (a) Write in brief about Duane's retraction type three syndrome.

Or

   (b) Give brief account on strabismus fixus.

15. (a) Discuss about suppression in strabismus. How to diagnose it?

Or

(b) Give a brief account on convergence excess.

Part C ($5 \times 8 = 40$)

Answer **all** questions, choosing either (a) or (b).

16. (a) List the orthoptic instruments that are available in a squint clinic & tabulate their uses.

Or

(b) Write in detail about Diplopia charting use diagram.

17. (a) Write in detail about accommodative convergent squint and its management.

Or

(b) Write in detail about intermittent divergent squint and its clinical management

18. (a) Elaborate on incomitant exotropia.

Or

(b) Write in detail about third nerve palsy.

19. (a) Discuss in detail about Duane's retraction syndrome.

Or

(b) Discuss about differential diagnosis of restrictive squints.

20. (a) Discuss in detail about treatment of convergence insufficiency using vision therapy.

Or

(b) Write in detail about the tests used to measure accommodation in VT clinic.

C–7860	Sub. Code 91463

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Optometry

LOW VISION AIDS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which ocular condition is not considered as major cause of blindness in people above 60 years of age?
   (a) Diabetic Retinopathy
   (b) ARMD
   (c) Retinitis pigmentosa
   (d) Cataract

2. In a low vision patient, preliminary workup starts from
   (a) Postural abnormality detection
   (b) Observing as he or she enters the examination room
   (c) Vision testing
   (d) History taking

3. Part of the eye that expands or contracts according to the among of light available is
   (a) Choroid (b) Lens
   (c) Iris (d) Conjunctiva

4. Most of the visual impairments in school age children results from

(a) Trauma

(b) Anoxia

(c) Hereditary or fetal infection

(d) X-ray damage

5. Fact chart measures

(a) Colour vision (b) Contrast sensitivity

(c) Visual fields (d) Visual activity

6. FM 100 Hue has ———— no. of caps.

(a) 100 (b) 98

(c) 85 (d) 80

7. ———— is not useful for patients with tremors.

(a) Hand magnifier

(b) Spectacle magnifier

(c) CCTV

(d) Stand magnifier

8. Caps and tinted glasses are useful in

(a) Macular dystrophy

(b) Best disease

(c) Albinism

(d) Retinitis Pigmentosa

9. Deafness is a systematic feature of ———— syndrome.

(a) Bardet biedel (b) Marfan

(c) Peters (d) Usher's

10. ———————— telescope is prescribed as binoculars.

(a) Astronomical (b) Keplerian

(c) Galilean (d) Magellan

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Who definition of low vision and working definition of low vision?

Or

(b) Define impairment, disability and handicap.

12. (a) Write in brief about relative distance & Relative size magnification.

Or

(b) Discuss the optics of spectacle magnifier.

13. (a) Give notes in testing visual fields in low vision patients.

Or

(b) Write about contrast sensitivity testing.

14. (a) Educational guidance for low vision patients.

Or

(b) Construction and uses of typoscope.

15. (a) Write about safety techniques for navigation in blind people.

Or

(b) Non optical devices-Discuss any three.

Part C

$(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail about epidemiology and prevalence of low vision globally in India.

Or

(b) Give an account on preclinical evaluation of low vision patients.

17. (a) Give the classification of optical and non optical aids available in India.

Or

(b) Discuss the optics of Galilean telescope and list its advantages and disadvantages.

18. (a) Write in detail about selection of low vision aids.

Or

(b) Discuss the environmental modifications that can help a geriatric law vision patient.

19. (a) Write in detail about special schools for low vision patients.

Or

(b) Discuss the concessions and allowances available for legally blind people in India.

20. (a) Write elaborately about rehabilitation of patients with RP (Retinitis Pigmentosa).

Or

(b) Discuss in detail about counseling of a patient with progressive vision loss disease.

C–7861

Sub. Code
91465

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Optometry

SYSTEMIC DISEASES AFFECTING THE EYE

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which grade of hypertensive retinopathy shows optic disc edema?

   (a) Grade I (b) Grade II

   (c) Grade III (d) Grade IV

2. Vegetations on heart valves are seen in

   (a) Endocarditis (b) Tuberculosis

   (c) Hypertension (d) Arthritis

3. Which test is used to confirm tuberculosis?

   (a) Mantoux test

   (b) FBS

   (c) ECG

   (d) MRI

4. Cotton wool spots are a hallmark of
   (a) Diabetic Retinopathy
   (b) Glaucoma
   (c) Vitamin A deficiency
   (d) Papilledema

5. Proptosis is a common ocular sign in
   (a) Hypothyroidism
   (b) Hyperthyroidism (Graves')
   (c) Vitamin B12 deficiency
   (d) Sickle cell Anemia

6. Which of the following is a demyelinating disorders?
   (a) Multiple sclerosis (b) Tuberculosis
   (c) Malaria (d) Dengue

7. Which chromosomal disorder is associated with Brushfield spots?
   (a) Turner syndrome
   (b) Down syndrome
   (c) Klinefelter syndrome
   (d) Marfan syndrome

8. Ocular dryness in arthritis mainly due to
   (a) Vitreous degeneration
   (b) Keratoconjunctivitis sicca
   (c) Retinitis pigmentosa
   (d) Optic neuritis

9. Bitot's spots are caused by deficiency of
   (a) Vitamin A
   (b) Vitamin B1
   (c) Vitamin C
   (d) Vitamin D

10. Which tropical disease is transmitted by sandfly?

(a) Malaria

(b) Leishmaniasis

(c) Dengue

(d) Syphilis

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Short note on complications of rheumatic heart disease.

Or

(b) Clinical features and management of hypertensive retinopathy.

12. (a) Explain the pathophysiology of Diabetic mellitus.

Or

(b) Write short notes on Grave's ophthalmopathy.

13. (a) Describe ocular changes in papilledema.

Or

(b) Write short notes on Sickle cell anemia and eye.

14. (a) Ocular manifestations of Vitamin A deficiency.

Or

(b) Clinical features of Rheumatoid arthritis.

15. (a) Clinical features of ocular malaria.

Or

(b) Write short notes on Syphilis and eye involvement.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Hypertension – classification, pathophysiology, clinical features, diagnosis and ocular manifestations.

Or

(b) Tuberculosis – etiology, pathophysiology, diagnosis, treatment and ophthalmic involvement.

17. (a) Diabetes Mellitus – Pathophysiology, systemic complications and ocular movement.

Or

(b) Graves' Ophthalmopathy – Clinical features, diagnosis and management.

18. (a) Classify neurological disorders and explain the ocular findings in demyelinating diseases.

Or

(b) Discuss genetic disorders affecting the eye with examples (Sickle cell anemia, Down syndrome)

19. (a) Connective tissue diseases with special reference to ocular complications.

Or

(b) Vitamin A deficiency – Systemic features, ocular manifestations and management.

20. (a) Leprosy – systemic features, complications and Ophthalmic manifestations.

Or

(b) Syphilis – Pathophysiology, clinical features, diagnosis and ocular signs.

———————

C–7862	Sub. Code 91466A

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

MEDICAL LAW AND ETHICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Who is known as the "Father of Psychology"?

   (a) Freud (b) Wundt

   (c) Skinner (d) James

2. Which school of thought focused on breaking down mental processes into basic elements?

   (a) Behaviorism (b) Functionalism

   (c) Structuralism (d) Gestalt

3. The part of the brain that controls balance and coordination is the _____.

   (a) Cerebellum (b) Hippocampus

   (c) Thalamus (d) Amygdala

4. The process of detecting environmental stimuli is called _____.

   (a) Sensation (b) Perception

   (c) Cognition (d) Learning

5. The study of unusual patterns of behavior and thought is called _____ psychology.

(a) Normal (b) Abnormal

(c) Cognitive (d) Social

6. Prolonged stress can suppress the

(a) Immune (b) Digestive

(c) Nervous (d) Circula

7. Morphine is commonly used for _____ management.

(a) Sleep (b) Pain

(c) Stress (d) Memory

8. A structured interview provides high

(a) Validity (b) Bias

(c) Reliability (d) Subjectivity

9. The primary role of a clinical psychologist is

(a) Assessment (b) Teaching

(c) Surgery (d) Politics

10. Behavioral medicine combines psychology with

(a) Education (b) Medicine

(c) Politics (d) History

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Mention the key contributions of Wilhelm Wundt and Sigmund Freud.

Or

(b) How can the study of behavior and mental processes help in solving real-life problems? Give one practical example.

12. (a) Differentiate between positive reinforcement and negative reinforcement with examples.

Or

(b) Suggest two strategies to improve long-term memory.

13. (a) Define abnormal psychology and explain how it differs from normal psychology.

Or

(b) Apply the concept of health psychology in promoting lifestyle modification to prevent lifestyle-related diseases.

14. (a) Define clinical psychology. How is it different from general psychology?

Or

(b) Why is case history taking important in clinical assessment?

15. (a) State the key difference between acute pain and chronic pain.

Or

(b) What is the main aim of palliative care in terminally ill patients?

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the difference between mind and behavior. How can an understanding of mental processes improve psychological interventions? Provide relevant examples.

Or

(b) Critically evaluate the significance of research methodology in psychology. Compare and contrast experimental and observational methods in terms of strengths, limitations, and application in psychological research.

17. (a) Analyze the differences between sensation and perception. Why is perception considered an active process?

Or

(b) Describe Pavlov's experiment on classical conditioning. Apply it to a real-life example of learned behavior.

18. (a) Examine the major features of DSM-based classification of mental disorders. How does it differ from ICD classification?

Or

(b) Evaluate Hans Selye's General Adaptation Syndrome model of stress in the light of modern findings from psychoneuroimmunology.

19. (a) Discuss the limitations of psychological assessment tools. How can clinicians address issues of reliability and validity?

Or

(b) Design a structured clinical interview format for diagnosing generalized anxiety disorder. Include sample questions and justification for your choices.

20. (a) Examine the gate control theory of pain. How does it explain individual differences in pain perception?

Or

(b) Compare problem-focused and emotion-focused coping strategies in managing chronic illness.

———————

C–7863	Sub. Code 91466B

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

CLINICAL PSYCHOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The four principles approach includes:
   (a) Justice, Beneficence, Autonomy, Non-maleficence
   (b) Integrity, Loyalty, Law, Efficiency
   (c) Virtue, Duty, Character, Motive
   (d) Trust, Respect, Honesty, Courage

2. The modern version of the medical oath stresses:
   (a) Professional autonomy alone
   (b) Human rights and patient dignity
   (c) Avoidance of new technologies
   (d) Professional autonomy alone

3. Laws governing rights of patients and doctors belong to:
   (a) Medical (b) Civil
   (c) Social (d) Ethical

4. Romantic involvement with a patient violates:
   (a) Boundary (b) Contract
   (c) Consent (d) Justice

5. Competence in decision-making refers to the patient's:

(a) Age (b) Ability

(c) Condition (d) Income

6. The first doctor treating a medico-legal case must:

(a) Refuse treatment (b) Treat and notify police

(c) Delay reporting (d) Only record information

7. Which document in medico-legal cases is preserved as evidence?

(a) Medical record (b) Prescription only

(c) Pharmacy bills (d) Insurance claim

8. Telehealth services introduce new:

(a) Fees (b) Legal issues

(c) Risks (d) Equipment

9. Run-off cover in indemnity insurance protects after:

(a) Suspension (b) Retirement

(c) Hospitalization (d) Resignation

10. The right to refuse treatment can sometimes conflict with:

(a) Freedom (b) Beneficence

(c) Justice (d) Autonomy

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Summarize the significance of the Nuremberg Code in medical research ethics.

Or

(b) Briefly describe deontology as an ethical theory in medicine.

12. (a) Why is patient confidentiality important in building a doctor-patient relationship?

Or

(b) Define negligence in medical practice.

13. (a) Describe the legal importance of informed consent in protecting both patients and healthcare providers.

Or

(b) Analyze the ethical differences between active and passive euthanasia.

14. (a) Explain the protocol for releasing medical information. What legal precautions must be taken?

Or

(b) Evaluate the consequences of unauthorized disclosure of medical records. Provide examples of potential legal risks.

15. (a) Analyze the impact of professional indemnity insurance on healthcare risk management strategies.

Or

(b) Discuss ethical challenges in balancing patient autonomy and professional judgment.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Compare deontological ethics with utilitarian ethics, highlighting their relevance to medical decision-making.

Or

(b) Explain the principles of virtue ethics. How does it influence the character and behavior of healthcare professionals?

17. (a) Discuss the ethical importance of confidentiality in healthcare and explain under what circumstances breaching confidentiality is justified.

Or

(b) Describe the concept of rational drug therapy. Discuss the risks associated with irrational drug use, especially antibiotic misuse.

18. (a) Explain the legal significance of informed consent in the patient-provider relationship and the potential consequences of obtaining consent improperly.

Or

(b) Compare and contrast rational versus irrational drug therapy in terms of ethical, clinical, and economic impacts.

19. (a) Explain the importance of medico-legal medical records in patient care and legal proceedings.

Or

(b) Examine the procedures and guidelines for the retention and disposal of medical records with reference to medico-legal requirements.

20. (a) Explain the role of transparency in handling medical errors.

Or

(b) Describe the purpose of run-off cover in indemnity insurance.

———————

C–8518

Sub. Code
91422

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

OCULAR ANATOMY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define superior orbital fissure.

2. List out the subdivisions or types of conjunctiva.

3. List out the glands of eyelid.

4. Define Schlemm's canal.

5. Write about limbus

6. What is mylenation?

7. List out the bone comprising the roof and floor of the orbit.

8. List the composition of vitreous body.

9. Define anterior hyaloid membrane.

10. What is plica semilunaris?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the arrangement of nerve fibers in retina with a neat labelled diagram.

Or

(b) Write about the anatomy of LPS muscle.

12. (a) Write about the drainage of aqueous humor.

Or

(b) Write about the blood and nerve supply of extra ocular muscles.

13. (a) Write about the blood supply to uveal tract.

Or

(b) Write about the anatomical features of sclera

14. (a) Write about blood-retinal barrier and its significance.

Or

(b) Write about the anatomy of lacrimal gland.

15. (a) Explain the structure of fovea centrals.

Or

(b) Write about the formation of retina and optic nerve.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain in detail on the anatomy of corneal layers with a neat labelled diagram.

Or

(b) Explain in detail on the milestones in the development of the eye.

17. (a) Write in detail on the anatomy and blood supply of retina with a neat labelled diagram.

Or

(b) Explain the functional components, course, distribution and clinically applied aspects of 6th cranial nerve.

18. (a) Write in detail on the anatomy of extra ocular muscles.

Or

(b) Write in detail on the anatomy of eyelid and its glands.

———————

C–8519

Sub. Code
91423

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Anisocoria.

2. What is optic atrophy?

3. Define maurice theory.

4. List out the composition of vitreous humor.

5. Define pursuits.

6. List out the tests of colour vision.

7. Define Fusion.

8. Define visual direction.

9. Define Fick's axes.

10. Define accomodation.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the formation of aqueous humor.

Or

(b) Explain blood retinal barrier.

12. (a) Write about the grades of binocular vision.

Or

(b) Write notes on papillodema.

13. (a) Write notes on presbyopia.

Or

(b) Write about the nerve supply and mechanism of action of EOM.

14. (a) Write about the components of visual acuity.

Or

(b) List out the functions of optic nerve.

15. (a) Write notes on the layers of retina.

Or

(b) Write about the pathway of pupillary near reflex.

Part C (3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on the physiology of vision.

Or

(b) Explain in detail on the corneal transparency and hydration.

17. (a) Write in detail on the physiological, photochemical and neurological basis of colour vision.

Or

(b) Explain in detail on ERG.

18. (a) Write about the types, neural mechanism and measurement of contrast sensitivity.

Or

(b) Explain in detail on VER.

———————

C–8520

Sub. Code
91424

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

PHYSICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define coherence.

2. Define interference.

3. Define diffraction.

4. Define resolution.

5. What is airy pattern?

6. Define dispersive power.

7. What is Rayleigh's criterion?

8. Define zone plates.

9. Define phase difference.

10. Define gratings.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Tabulate the difference between path and phase difference.

Or

(b) Write notes on Radiometry.

12. (a) Write about the principles of Lasers.

Or

(b) Write notes on Fresnel biprism.

13. (a) Write about Huygen's principle for law of refraction at plane and spherical surfaces.

Or

(b) Write notes on Retarders.

14. (a) Write notes on colour of thin films.

Or

(b) Write notes on simple harmonic motion.

15. (a) Write about theory of interference fringes.

Or

(b) Write about ARC.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain in detail on the dual nature of light.

Or

(b) Write about the principle, experimental arrangement and applications of holography.

17. (a) Write in detail on the resolution of optometric instruments.

Or

(b) Explain Lloyd's mirror experiment

18. (a) Write about the production of linear, circular and elliptically polarised light.

Or

(b) Explain Newton's ring experiment.

———————

C–8521	Sub. Code 91425

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Optometry

MICROBIOLOGY AND PATHOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define sterilization

2. List out any 3 gram positive bacilli

3. Define inflammation

4. What is acid last staining

5. Define malignancy

6. List out the methods of sterilization

7. Define histology

8. What is cellular injury

9. Define immunity

10. List out the causative organisms of bacterial conjunctivitis

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write notes on normal ocular flora.

Or

(b) Write about scraping from corneal ulcer and vitreous tapings.

12. (a) Write notes on tissue Injury.

Or

(b) Write notes on Chalazion and hordeolum.

13. (a) Write about grams staining.

Or

(b) Write notes on keratoconus.

14. (a) Write about culture and sensitivity test.

Or

(b) Write notes on lens induces glaucoma.

15. (a) Write about the structure and function of immunoglobulins.

Or

(b) Write about the ocular lesions causes by candida and histoplasma.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on sterilization and disinfection

Or

(b) Explain the clinical importance, ocular lesions, diagnosis and treatment of pox, rubella and retro virus

17. (a) Explain the role of vascular and cellular component in tissue injury, inflammation and repair.

Or

(b) Explain in detail on retinoblastoma.

18. (a) Explain in detail on hypersensitivity reaction

Or

(b) Explain orbital tumours in detail.

———————

C–8523

Sub. Code
91432

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

VISUAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Refractive index of cornea and crystalline lens.

2. Define visual axis.

3. Define AC/A ratio and give its normal value.

4. Accomodative hypermetropia.

5. Define vertex distance.

6. Relative spectacle magnification.

7. Difference between dynamic and static refraction.

8. Astigmatism fan test.

9. Coma.

10. Contrast sensitivity.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Refractive anomalies and its causes.

Or

(b) Measuring the optical constant and its uses.

12. (a) Facultative hypermetropia.

Or

(b) Management of presbyopia.

13. (a) Retinal size image calculation.

Or

(b) Effect of vertex distance change.

14. (a) Cylindrical refining procedures.

Or

(b) Binocular balancing and its importance.

15. (a) Contrast sensitivity.

Or

(b) Short notes on prism.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Optics of aphakic eye. consequence and management of aphakia.

Or

(b) (i) Exit and entrance pupil of human eye and significance

(ii) Second sight.

17. (a) (i) Explain the steps of subjective refraction.

(ii) Visual acuity and various types of visual acuity charts and its application.

Or

(b) Define myopia. Explain the cause, types, signs, symptoms and management.

18. (a) Define astigmatism and explain the types of astigmatism with neat diagram.

Or

(b) (i) Strums conoid

(ii) Kerotometry and working principle of one position variable doubling kerotometry.

———————

C–8524

Sub. Code
91433

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

OCULAR DISEASES – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is telecanthus?
2. How to differentiate between scleritis and episcleritis.
3. List out the types of corneal dystrophy's.
4. Define hypopyon.
5. What is keratic precipitates? List out any three conditions where it is seen.
6. What is optic nerve cupping and how is it related to glaucoma?
7. List out the etiology of congenital cataract.
8. What is xanthalesma?
9. List out the systemic diseases with uveitis as ocular manaifestation.
10. Define buphthalmos.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about blepharitis.

Or

(b) Write about the congenital anomalies of cornea.

12. (a) Write notes on vogt Koyanagi harada syndrome.

Or

(b) Write about ocular hypertension.

13. (a) Write the steps of phacoemsulsification.

Or

(b) Write notes on dacryocystitis.

14. (a) Write notes on corneal opacities.

Or

(b) Write notes on eyelid deformities.

15. (a) How to differentiate between bacterial and viral conjunctivitis?

Or

(b) Write notes on staphyloma.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on bacterial keratitis.

Or

(b) Write in detail on primary open angle glaucoma.

17. (a) Explain in detail on the definition, etiology, classification, clinical presentation and management of cataract.

Or

(b) Write in detail on allergic conjunctivitis and its types.

18. (a) Write in detail hordeolum and chalazion.

Or

(b) Explain the etiology, clinical presentation and management of scleritis.

———————

C–8525

Sub. Code
91434

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

OPTOMETRIC INSTRUMENTATION – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Optotype?

2. Define Colour vision.

3. Expand LASER.

4. Define Vision analyzer.

5. Objective optometers.

6. What is the use of the Pelli-Robson chart?

7. Corneal topography.

8. What is the use of Radiuscope?

9. Spectrometer.

10. Illumination of consulting room.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short notes on Pupilometer.

Or

(b) Discuss about Binoculars.

12. (a) What is PAM? Write short notes on it.

Or

(b) Write short notes on Contrast sensitivity tests.

13. (a) Write short notes on Snellen chart.

Or

(b) Write short notes on Compound microscope.

14. (a) Write short notes on Trial frame designs.

Or

(b) Write short notes on Pachymetry.

15. (a) Write short notes on Bausch and Lomb Keratometer.

Or

(b) Discuss about Aberrometer.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write short notes on Retinoscope types.

Or

(b) Give a detailed account on Brightness acuity test.

17. (a) What are the Slit lamp Illumination Techniques?

Or

(b) Differentiate Between Direct and Indirect Ophthalmoscope.

18. (a) Write short notes on Auto Refractometer.

Or

(b) Write principle, types and applications of Applanation tonometer.

———————

C–8526

Sub. Code
91435

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define first pass mechanism

2. Write about the classification of autonomic nervous system.

3. Define receptors.

4. Write about dose response relationship.

5. List out any three drugs used in convulsive disorders.

6. Define drug distribution.

7. Write about the principles of drug action.

8. List out any three ophthalmic diagnostic drugs.

9. Define biotransformation.

10. List out any 3 NSAID.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write in detail about mechanism of drug action and dose response relationship.

Or

(b) Elaborate the conjugation reactions of drug metabolism.

12. (a) Write about sedatives and hypnotics.

Or

(b) Write about the use of beta blockers, miotics and carbonic anhydrase inhibitors with examples

13. (a) Write about topical anesthetics.

Or

(b) Write briefly about Non steroidal anti inflammatory drugs.

14. (a) Preparation and packaging of ophthalmic drugs.

Or

(b) Write about phase I and phase II reactions.

15. (a) Mention the forms of drug available to apply for ocular diseases.

Or

(b) Write in detail about ophthalmic diagnostic drug with uses.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail about the routes of drug administration.

Or

(b) Write in detail about General anesthetics.

17. (a) Explain ADR and its manifestations and treatment.

Or

(b) Explain about the nature and sources of drugs.

18. (a) Write in detail about ophthalmic drugs including antibiotics, corticosteroids and vision elastic agents

Or

(b) Write in detail about pharmacokinetics.

———————

C–8527

Sub. Code
91436

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Optometry

CLINICAL EXAMINATION OF THE VISUAL SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the actions of Inferior oblique muscle?

2. Define Anisocoria.

3. Normative value of Dynamic Retinoscopy. What is lead of accommodation?

4. What is Radical retinoscopy?

5. Define 'Maximum plus for maximum visual acuity'.

6. Any two indications of Atropine.

7. Normative value of HVID & PD in adults.

8. Duochrome end point of seeing red slightly better than green is agreeable. Yes or No? Justify.

9. What is the use of confrontation test?

10. Use of conical illumination.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Advantages of log MAR chart.

Or

(b) Give short notes on Amusler Test.

12. (a) Give account on various characteristics of Retinoscopic reflex.

Or

(b) Uses and limitations of Auto Refractometer.

13. (a) Write in brief about Borish delay.

Or

(b) Compare Cyclopentolate with Homatropine.

14. (a) Compare the differences between convergence excess and convergence insufficiency.

Or

(b) Write on measurement of NPA.

15. (a) Write in brief about Duochrome test.

Or

(b) Measurement of HVID and its importance.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail about Tear film evaluation.

Or

(b) Slit lamp evaluation techniques.

17. (a) Detailed procedure to use JCC.

Or

(b) Uses, demerits and limitations of Keratometry.

18. (a) What is the significance of measurement of IPD?

Or

(b) Different methods of using Dynamic Retinoscopy.

———————

C–8528

Sub. Code
91442

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

Optometry

OPTOMETRIC OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is drop ball test?

2. Define specific gravity

3. Define sag

4. Define reflection and refraction

5. List out the surface defects in ophthalmic lenses

6. What is spherical equivalent and how to calculate it.

7. What is bad metal effect?

8. Define glazing

9. Define vertex power

10. What is orange peel defect?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about base-apex notation, thickness difference and units of prism.

Or

(b) Write notes on cylindrical lenses.

12. (a) Write about magnification in high plus lenses.

Or

(b) Write about modifies near vision lenses.

13. (a) Write notes on glazing and edging.

Or

(b) Write about tilt induced power in spectacle lenses.

14. (a) Write notes on rotary prisms.

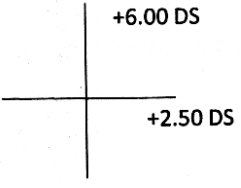
Or

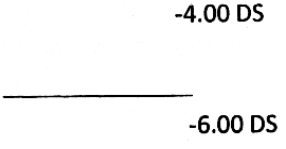
(b) Write about the key points to note in the history of ophthalmic lenses.

15. (a) Write about chromatic aberration in ophthalmic lenses.

Or

(b) Transpose the following into spherocylinder form (both plus and minus cylinder form)





Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain in detail on the progressive addition lenses.

Or

(b) Explain in detail on the characteristic properties of lens material.

17. (a) Explain in detail on the design, manufacturing and uses of bifocal lenses.

Or

(b) Explain in detail on lens coatings.

18. (a) Explain in detail on description and detection of lens defects.

Or

(b) Explain in detail on the types of ophthalmic lens materials.

———————

C–8529

Sub. Code
91443

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

Optometry

OCULAR DISEASES – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is retinal telangiectasis.

2. Define hemianopia.

3. What is nyctalopia?

4. List out the classification of optic neuritis.

5. Write the flow of CSF.

6. What is RAPD?

7. Define nystagmus.

8. List the ocular features of myotonic dystrophy.

9. Define saccades.

10. What is pituitary adenoma?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write notes on posterior vitreous detachment.

Or

(b) Write about hereditary optic atrophies.

12. (a) Write notes on the congenital anomalies of optic disc and nerve.

Or

(b) Write note on RAPD, Argyll Robertson pupil and horner's syndrome.

13. (a) Write notes on craniopharyngioma.

Or

(b) Write notes on terinoblastoma.

14. (a) Write about non-arteric anterior ischaemic optic neuropathy.

Or

(b) Write notes on retinopathy of prematurity.

15. (a) Write about optic atrophy.

Or

(b) Write note on the ocular features of myasthenia gravis.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain in detail on diabetic retinopathy.

Or

(b) Explain in detail on the anatomy, clinical features and causes of isolated third nerve palsy.

17. (a) Explain the etiology, types, clinicals features and management of retinal detachement.

Or

(b) Write in detail on the etiology, classification clinical features and management of optic neuritis.

18. (a) Explain in detail on papillodema and causes of raised intracranial pressure.

Or

(b) Explain the classification, cuases, types, clinical presentation, diagnosis and management of nystagmus.

———————

C–8530	Sub. Code 91444

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTATION - II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the principle of B-Scan ultrasonography?

2. What is pooling in FFA defect?

3. Define retroillumination in slit lamp biomicroscope.

4. What is cryotechnique?

5. Define hyperfluroscene with an example.

6. What is SITA–standard?

7. What is the use of berman's locator?

8. What is arm to retina time in FFA?

9. Define false negative.

10. What is the difference between static and kinetic perimetry?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write notes on the optics and instrumentation of keratometer.

Or

(b) Write notes on syringing.

12. (a) Write about the indications and procedure of diathermy.

Or

(b) Write about the construction of Snellen chart for distance vision assessment.

13. (a) Write notes on the instrument set up and procedure of ERG.

Or

(b) Write notes on photorefraction.

14. (a) Write about the anterior segment photography.

Or

(b) Write notes on the optics and instrumentation of A-Scan.

15. (a) Write about schirmer's test.

Or

(b) Write about the types of tonometers.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on VEP.

Or

(b) Explain in detail on the principle, instrumentation and procedure of retinoscope.

17. (a) Explain in detail on FFA and optics of fundus camera.

Or

(b) Explain in detail on the principle and instrumentation of optical and ultrasound pachymeter.

18. (a) Explain in detail on the instrumentation, optics, principle and illumination techniques of slit lamp biomicroscope.

Or

(b) Explain in detail on visual acuity testing.

———————

C–8531	Sub. Code 91451

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

CONTACT LENSES - I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is ionicity?

2. Define divergence.

3. What is a polymer?

4. Define accommodation and its change with spectacle and contact lenses.

5. Write the FDA classification of contact lens material.

6. What is edge lift?

7. What is vertex power?

8. List out any three contraindication of contact lens wear.

9. Define rigidity.

10. What is extended keratometry?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write notes on the advantages and disadvantages of contact lens over spectacles.

Or

(b) Write notes on the indication and contraindication of contact lens wear.

12. (a) Write about the physiology of tear film in relation to contact lens wear.

Or

(b) Write notes on ordering rigid contact lenses.

13. (a) Write about the calculation and significance of vertex distance and vertex power.

Or

(b) Write about common handling instructions in contact lens wear.

14. (a) Write notes on checking and verifying contact lenses from laboratory

Or

(b) Write notes on the significance of slit lamp examination technique in contact lens assessment.

15. (a) Write notes on correction of astigmatism with RGP lens.

Or

(b) Write notes on the common terminologies in contact lens practice.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on the manufacturing of RGP and soft contact lenses.

Or

(b) Write in detail on soft contact lens materials.

17. (a) Write about the history of contact lenses.

Or

(b) Explain spherical RGP contact lens fitting and assessment.

18. (a) Explain in detail on the types of fit on toric cornea with spherical lenses.

Or

(b) Explain in detail on the soft contact lens fitting assessment.

———————

C–8532	Sub. Code 91452

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

BINOCULAR VISION – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is retinal rivalry?

2. Define retinomotor value.

3. What is fusion?

4. Define stereopsis.

5. List out the extra ocular and intra ocular muscles.

6. What is fick's axes?

7. What is herring's law of equal innervation?

8. Define field of fixation.

9. List out the stimulus for accommodation.

10. Define ARC.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write notes on the laws of extraocular motility.

Or

(b) Write about the stimulus and innervation of accommodation.

12. (a) Write notes on the mechanism of convergence and divergence.

Or

(b) Write about monocular clues.

13. (a) Write notes on the investigations of ARC.

Or

(b) Write about the action of EOM.

14. (a) Write about the assessment of fusion.

Or

(b) Write about the clinical features and etiology of accommodative insufficiency.

15. (a) Write about synoptophore.

Or

(b) Write notes on egocentric location and its clinical applications.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain the grades of BSV in detail.

Or

(b) Explain the types, etiology, investigation and management of the anomallies of convergence.

17. (a) Write in detail on the physiology of extra ocular muscles.

Or

(b) Explain in detail on the classification, etiology, investigation and management of the amblyopia.

18. (a) Explain in detail on the classification, etiology, investigation and management of the ARC.

Or

(b) Explain in detail on the tests for stereopsis.

———————

C–8533	Sub. Code 91453

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

PEDIATRIC AND GERIATRIC OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is critical period in visual development?

2. Define emmetropization.

3. List the types of esotropia.

4. Define coloboma.

5. What is heterochromia iridis?

6. Define low vision.

7. List out any three signs of proliferative diabetic retinopathy.

8. List out any three ocular manifestations of hypertension.

9. Define hyperopia.

10. Define visual acuity.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about the congenital anomalies of orbit.

Or

(b) Write notes on spectacle dispensing for children.

12. (a) Write about the congenital anomalies of iris.

Or

(b) Write notes on the tests of accommodation.

13. (a) Write notes on the types and diagnosis of amblyopia.

Or

(b) Write about visual development in pediatric population.

14. (a) Write about the clinical presentation of hypertensive retinopathy.

Or

(b) Write about the definition, etiology and diagnosis of anisometropia.

15. (a) Write about the congenital anomalies of cornea.

Or

(b) Write notes on the need for optometry care in geriatric population.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on history taking in pediatric subjects.

Or

(b) Explain hyperopia and write about its examination, clinical features and management options.

17. (a) Write in detail on the etiology, clinical presentation, types, diagnosis and management of strabismus.

Or

(b) Explain the etiology, stages, diagnosis and management of ARMD.

18. (a) Explain in detail on senile cataract.

Or

(b) Write in detail on the etiology, clinical presentation, diagnosis and management of retinoblastoma.

———————

C–8534	Sub. Code 91454

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

DISPENSING OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define photochromic lenses.

2. What is facial wrap?

3. What is prentice's rule?

4. What is inset?

5. Define fitting cross.

6. What is the significance of pantoscopic tilt?

7. What is base curve?

8. What is retroscopic tilt?

9. Define vertex power.

10. Define refractive index.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Draw a neat labelled diagram of a spectacle and write the definition of various parts of a spectacle

Or

(b) Write notes on spectacle accessories.

12. (a) Write about temple position.

Or

(b) Write notes on lensometer.

13. (a) Write about the lenticular lenses.

Or

(b) Write about the counselling to customers on wearing and maintaining spectacles.

14. (a) Write notes on aspheric lenses.

Or

(b) Write about special purpose frames.

15. (a) Write about polaroids.

Or

(b) Write notes on frame selection based on age and face shape.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on the history of spectacles.

Or

(b) Explain in detail on the measurement and significance of IPD.

17. (a) Explain in detail on lens and frame markings and measurements.

Or

(b) Explain Fresnel lenses and its uses in detail.

18. (a) Write in detail on toric transposition with examples.

Or

(b) Explain the manufacturing of spectacles.

———————

C–8535	Sub. Code 91455

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

PUBLIC HEALTH AND COMMUNITY OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define teleoptometry.

2. What is vision 2020?

3. Define blindnesss.

4. What is NPCB?

5. What is health economics?

6. What is rehabilitation?

7. What is the key difference between clinical and community optometry?

8. What is primary health care?

9. List out the national and international health agencies

10. Write the clinical presentation of vitamin A deficiency.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write notes on the levels of healthcare patterns.

Or

(b) Write about nutritional blindness.

12. (a) Write notes on the concept and implementation of public health optometry.

Or

(b) Write notes on health manpower and planning.

13. (a) Write about health economics.

Or

(b) Write notes on disease prevention.

14. (a) Define blindness and write about the causes of visual impairment.

Or

(b) Write notes on community based rehabilitation programs.

15. (a) Write notes on NPCB.

Or

(b) Write notes on service delivery models.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain in detail on the dimension, determinants and indicators of health.

Or

(b) Explain in detail on the epidemiology of blindness.

17. (a) Explain in detail on organizing community eye care programs.

Or

(b) Explain in detail on the role of optometrist in public health.

18. (a) Write in detail on the assessment and evaluation of health programmes.

Or

(b) Explain vision 2020.

———————

C–8536

Sub. Code
91456

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Optometry

BIOSTATISTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Mortality.

2. Write the formula of gender specific mortality rate.

3. What is type II error.

4. Define null hypothesis.

5. Define mode.

6. Define correlation.

7. What are the discrete type distributions?

8. Write the formula of chi square test

9. Define hospital statistics.

10. Write any two uses of hospital statistics.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Explain snowball sampling method.

Or

(b) Explain perinatal mortality rate.

12. (a) How to determine the sample size.

Or

(b) Define hypothesis and explain its types.

13. (a) Explain the concept of frequency distribution.

Or

(b) Calculate quartile deviation for the following data.

X	100	150	160	170	180	190
f	5	28	46	31	21	10

14. (a) Explain Poisson distribution in detail.

Or

(b) Write the properties of Binomial distribution.

15. (a) A hospital with 310 available beds in June rendered 5200 patient days and had 850 discharged/died patients. Calculate turnover interval rate.

Or

(b) How to collect hospital statistics data explain in details?

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Explain probability sampling methods in detail.

Or

(b) Calculate mean, standard deviation for the following data.

Weight (lbs)	95-105	105-115	115-125	125-135	135-145
No. of persons	10	45	55	40	20

17. (a) Calculate Karl persons coefficient of correlation for the following data.

EI Score	88	92	86	65	70	75	80
IQ Score	50	60	65	70	75	80	85

Or

(b) Distinguish between correlation and regression in statistics.

18. (a) Explain Chi square test and its testing procedure

Or

(b) Derive the Y on X regression equation for the following data

X	85	80	87	67	69	75	72
Y	5	15	25	34	42	26	17

———————

C–8537	Sub. Code 91461

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Optometry

CONTACT LENSES – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define GPC.

2. List out any three contraindication of soft contact lens

3. Define vertex power.

4. Write an example converting spectacle power into contact lens power.

5. Classify the materials of RGP contact lens.

6. List out the types of cleaning agents.

7. Define hypoxia.

8. Define Aphakia.

9. What is the use of cosmetic contact lens?

10. Tabulate any three difference between RGP and soft CL.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Tabulate the do's and dont's of contact lens fitting.

Or

(b) Write in detail on the insertion and removal of contact lens.

12. (a) Write about the optical properties and advantages of soft contact lenses.

Or

(b) Write about contact lens fitting in pediatric population.

13. (a) Write about the bifocal contact lenses.

Or

(b) Write about the contact lens fitting in keratoconus.

14. (a) Explain the parameter selection of soft contact lenses.

Or

(b) Write in detail on the types of contact lens materials.

15. (a) Write about parameter selection in RGP contact lenses.

Or

(b) Write in detail on prosthetic contact lenses.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on the stabilization techniques of soft toric contact lenses.

Or

(b) Write about the disposable contact lenses.

17. (a) Explain in detail on complications of contact lenses.

Or

(b) Explain about the steps involved in the care and maintenance of soft lenses.

18. (a) Write in detail on types, parameter selection, fitting and RGP contact lenses.

Or

(b) Write in detail on prosthetic eye fitting procedures.

———————

C–8538

Sub. Code
91462

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

BINOCULAR VISION – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define primary deviation.

2. What is the principle of synoptophore.

3. Define exotropia.

4. Define suppression.

5. What is the difference between harmonious and unharmonious ARC?

6. List out the types of esodeviation

7. Define prism

8. List out the motor signs in strabismus

9. List out the uses of prism bar

10. List out the tests done to diagnose amblyopia.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the principle, procedure and interpretation of cover test and cover-uncover test.

Or

(b) Write in detail on the procedure of diplopia charting.

12. (a) Write about the management of ARC.

Or

(b) Write about the use of prism in the correction of the degree of ocular deviation.

13. (a) Write about the classification and clinical features of non - accommodative esotropia.

Or

(b) Write about the assessment of the grades of binocular single vision by using synoptophore.

14. (a) Explain the classification of paralytic strabismus.

Or

(b) Write in detail on the role of vision therapy in the management of convergence insufficiency.

15. (a) Write about the A & V phenomenon.

Or

(b) Write in detail on the uses of Maddox rod.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on the definition, classification, etiology, clinical features, clinical assessment and management of accommodative convergent squint.

Or

(b) Write about the principle, procedure and interpretation of diplopia charting.

17. (a) Explain in detail on the procedure of Maddox rod and Maddox wing.

Or

(b) Explain about the principle, procedure and interpretation of Hirschberg and Krimsky test.

18. (a) Write in detail on the principle, procedure and interpretation of bielchowskys head tilt test.

Or

(b) Write in detail on the definition, classification, etiology, clinical features, clinical assessment and management of ARC.

———————

C–8539

Sub. Code
91463

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

LOW VISION AID

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define eccentric fixation.

2. What are the types of optical aids in low vision?

3. Define exit pupil.

4. What is a contact lens telescope?

5. What is a telemicroscope?

6. Define lebenson's formula

7. Define rehabilitation.

8. What is a Notex?

9. Define equivalent viewing distance.

10. What is a bar magnifier?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the definition and grades of low vision

Or

(b) Write in detail on the mobility and orientation training in low vision care.

12. (a) Write about the eccentric viewing strategies.

Or

(b) Write about the optics of stand magnifier and formulas used to determine the amount of magnification with an example.

13. (a) Write about the dispensing and prescribing aspects of low vision aids.

Or

(b) Write in detail on galilien telescope.

14. (a) Explain education guidance in low vision care.

Or

(b) Write in detail on the psychological factors of low vision.

15. (a) Write about the types of magnification.

Or

(b) Write in detail on spectacle magnifier.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write in detail on the clinical evaluation of a low vision patient.

Or

(b) Write any 2 case analysis in relation to low vision.

17. (a) Explain in detail on the types, optics and applications of telescopes.

Or

(b) Explain about pediatric low vision care.

18. (a) Write in detail on the optical low vision aids.

Or

(b) Write in detail on the assessment and prescription of low vision devices.

———————

C–8540	Sub. Code 91464

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Optometry

OCCUPATIONAL OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define occupational health.

2. What is the unit of light?

3. Define Occupational safety.

4. Define occupational hygiene.

5. Define CVS.

6. What is PPE?

7. List out the occupational diseases caused by chemical agents.

8. Define occupational hazard.

9. Define task analysis.

10. List out the tests for colour vision.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b)

11. (a) Write about the occupational related caused by physical agents.

Or

(b) Define colour, write about colour theory.

12. (a) Write about CVS.

Or

(b) Write about acts and rules related to occupational health.

13. (a) Write about the definition and sources of light.

Or

(b) Occupational health hazards faced by paramedics in general.

14. (a) Write about vision standards in airlines.

Or

(b) Write about the role of international and national bodies in occupational health.

15. (a) Write about colour defects.

Or

(b) Write in detail on contact lens and work.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b)

16. (a) Write in detail on occupational diseases caused by chemical and biological agents.

Or

(b) Write about electromagnetic radiation and its effects on eye.

17. (a) Explain in detail on the methods used to protect from occupational hazards.

Or

(b) Explain about the Visual display units.

18. (a) Write in detail on the task analysis.

Or

(b) Write in detail on colour vision tests.

———————

C–8541

Sub. Code
91465

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Optometry

SYSTEMIC DISEASES AFFECTING THE EYE

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define malignancy.

2. Define hypertension.

3. List out the ocular manifestations of syphilis.

4. Define demyelination.

5. What is etiology?

6. What is neurofibromatosis?

7. What is roth's spot?

8. What is bonnet sign?

9. Define prognosis.

10. What are the types of albinism?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about ocular manifestations of tuberculosis.

Or

(b) Write about the grading and staging of cancer.

12. (a) Write about the etiology, clinical features and management of papilloedema.

Or

(b) Write about the classification of neurological diseases.

13. (a) Write about thyroid eye disease.

Or

(b) Write about subacute bacterial endocarditis.

14. (a) Write about the ocular manifestations of malaria.

Or

(b) Write about the ocular manifestations of hypertension.

15. (a) Write about the ocular manifestations of rheumatoid arthritis.

Or

(b) Write about vitamin A deficiency and eye.

Part C

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write about the pathophysiology classification, clinical examination diagnosis, complications and management of diabetes mellitus.

Or

(b) Write about connective tissue diseases and their ocular manifestations.

17. (a) Write about visual pathway lesions.

Or

(b) Write about neurological diseases and its ocular manifestations.

18. (a) Write about the definition, nomenclature. characteristics of benign and malignant neoplasms.

Or

(b) Write in detail on the pathophysiology classification, clinical examination, diagnosis, complications and management of hypertension.

———————