C–4816

Sub. Code
91413

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GENERAL ANATOMY AND PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. Labourers nerve is
   (a) Sciatic (b) Radial
   (c) Median (d) Ulnar

2. Sinuses are not seen in
   (a) Liver (b) Spleen
   (c) Kidney (d) Endocrine gland

3. Which vertebra has the most prominent spine?
   (a) C3 (b) C7
   (c) T10 (d) L2

4. Atrioventricular node is supplied by
   (a) Left coronary artery
   (b) Right coronary artery
   (c) Left circumflex artery
   (d) Left anterior descending artery

5. The neuromuscular transmitter is

(a) Dopamine (b) Acetylcholine

(c) Epinephrine (d) Norepinephrine

6. Renal calculi is seen in

(a) Cushing's disease (b) Addition's disease

(c) Hyper thyroidism (d) Hyperparathyroidism

7. Hormone secreted from the anterior pituitary lobe is

(a) Oxidocin (b) ADH

(c) ACTH (d) Somatostatin

8. The kidney has ———————— lobes.

(a) 5 (b) 7

(c) 9 (d) 11

9. The length of the oesophagus is

(a) 25 cm (b) 30 cm

(c) 35 cm (d) 40 cm

10. The posterior chamber of the eye refer to the space

(a) Posterior to cornea

(b) Posterior to iris

(c) Posterior to lens

(d) Posterior to retina

Section B (5 × 5 = 25)

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

11. (a) Explain the physiology of glandular tissues.

Or

(b) Write briefly on types of muscular tissue.

12. (a) Write shot notes on anatomy of ribs.

Or

(b) Draw a neat structure of lower limp and label it.

13. (a) Discuss about the layers and anatomy of a blood vessels.

Or

(b) Outline the autonomic nervous system.

14. (a) Outline the physiology of menstrual cycle.

Or

(b) Write short notes on pancreatic hormones.

15. (a) Briefly explain the types and function of salivary gland.

Or

(b) Outline the physiology of olfactory epithelium.

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

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

16. (a) Draw a neat structure of skeletal system and label the major bones.

Or

(b) Explain the physiology of erythropoiesis and pathology of anemia.

17. (a) Elaborate on the anatomy of vertebral column.

Or

(b) Describe the physiology of muscle and neuromuscular junction.

18. (a) Outline the mechanism of resipiration and its control.

Or

(b) Discuss on the parts and functions of brain.

19. (a) Explain the anatomy of epididymis, vas deferens and seminal vesicle.

Or

(b) (i) Draw the structure of kidney. (4)

(ii) And explain the mechanism of urine formation. (4)

20. (a) Describe the anatomy of stomach.

Or

(b) Develop the physiology of visual pathway.

———————

C–4817

Sub. Code
91414

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GEOMETRICAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Angle between incident ray and normal is called angle of
   (a) Reflection (b) Refraction
   (c) Incident (d) Transmission

2. Bend of light rays or image in denser medium is termed as
   (a) Refraction (b) Reflection
   (c) Scattering (d) Transmission

3. Which object does not reflect more light
   (a) Polished surface (b) Unpolished surface
   (c) Shining surface (d) None of the above

4. Sun is a good example of
   (a) Luminous object
   (b) Non-luminous object
   (c) Transparent object
   (d) Opaque object

5. When angle of incidence in denser medium grater than the critical angle will total internal reflection taken or not

(a) It will (b) It won't take place

(c) Many take place (d) Total external angle

6. Concave lens produces

(a) Real virtual image

(b) Only erected image

(c) Only diminished image

(d) Virtual, erect diminished image

7. X and optical defect due to which a comet like image informed instead of point image X is

(a) Astigmatism (b) Coma

(c) Curvature (d) Distortion

8. The aberration produced by the variation of refraction index with wavelength of light is called

(a) Spherical aberration

(b) Chromatic aberration

(c) Dispersion

(d) Total internal reflection

9. Which ray is deviated by a prism is least

(a) Violet (b) Red

(c) Green (d) Yellow

10. When white light passes through the achromatic combination of prism then what is observed

(a) Dispersion

(b) Deviation

(c) Dispersion and deviation

(d) None of these

Section B (5 × 5 = 25)

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

11. (a) Explain in brief reflectivity and transmittance.

Or

(b) Write a brief ideas about sinusoidal oscillation.

12. (a) Discuss absolute and relative refractive index.

Or

(b) Explain vergence equation for this lenses.

13. (a) Write a short note to locate cardinal points using matrix theory.

Or

(b) Discuss some important about vertex powers.

14. (a) Discuss wavefront aberration.

Or

(b) List out the types of aberration and its importance.

15. (a) Write the importance and concept of prism dioptre.

Or

(b) List out some uses of optical fibres.

Section C (5 × 8 = 40)

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

16. (a) Write a detailed essay about light as electromagnetic wave.

Or

(b) Explain in detail Fermat's principle for the law of refraction.

17. (a) Discuss in detail refraction by plane glass slab.

Or

(b) Derive an equation for refraction by convex spherical surface.

18. (a) Explain in detail thick lenses cardinal points and its planes.

Or

(b) Describe in detail this lenses are separated by a distance, how to calculate its focal length.

19. (a) Explain in detail spherical aberration and curvature of field.

Or

(b) Write a detailed essay about coma and astigmatism.

20. (a) Write a detailed essay about dispasive power of prism.

Or

(b) Explain in detail different types of optical fibres.

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C–4818

Sub. Code
91415

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GENERAL AND OCULAR BIOCHEMISTRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

SECTION - A $(10 \times 1 = 10)$

Answer **all** questions.

1. A Sugar present in blood is

   (a) Glucose (b) Fructose

   (c) Galactose (d) lactose

2. Total ATP formed from an aerobic glycolysis is

   (a) 8 (b) 10

   (c) 36 (d) 12

3. A fatty acid which become solid at room temperature is known as.

   (a) Essential fatty acid

   (b) Saturated fatty acid

   (c) Unsaturated fatty acid

   (d) Cholesterol

4. Enzyme regulator binds at

(a) Active site

(b) Catalytic site

(c) Substrate binding site

(d) Allosteric site

5. Our hair is rich in

(a) Methiomine (b) Lysine

(c) Cysteine (d) Proline

6. Scurvy is due to the deficiency of

(a) Thiamine (b) Vitamin-B2

(c) Vitamin-C (d) Vitamin-A

7. Goblet's cell secretes _____ of Tear Film.

(a) Lipid layer (b) Mucoid layer

(c) Aqueous layer (d) Middle layer

8. Energy (ATP) for corneal transparency is derived from.

(a) Fatty acid (b) Sucrose

(c) Fructose (d) Glucose

9. An enzyme is important of aqueous humor.

(a) Lactose

(b) De-carboxlase

(c) Alchol dehydrogenase

(d) Carbonic anhydrase

10. A molecule rich in eye when diabetic retinopathy is

(a) Sorbitol (b) Alcohol

(c) Glucose (d) Vitamin-C

SECTION - B (5 × 5 = 25)

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

11. (a) Explain briefly on chemistry of TCA cycle.

Or

(b) Describe the types and pathology of diabetes mellitus.

12. (a) Discuss the classification and chemistry of fatty acid.

Or

(b) Outline the abnormal conditions of arteriosclerosis.

13. (a) List the functions of proteins.

Or

(b) Write the structure and chemistry if aromatic amino acids.

14. (a) Explain the biochemical composition and functions of aqueous layer of fear film.

Or

(b) Give a note on composition and specific properties at corneal stroma.

15. (a) Draw a neat structure of lens and label it.

Or

(b) Write briefly on abnormalities of glaucoma.

SECTION - C (5 × 8 = 40)

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

16. (a) Discuss on structure and chemistry of disaccharides.

Or

(b) Explain the structure and chemistry of starch and glycogen.

17. (a) Mention the structure and chemistry of phospholipids.

Or

(b) Elaborate the factors affecting enzyme action.

18. (a) Demonstrate the various structures of protein.

Or

(b) List the sources, biological functions and disease manifestation of Vitamin-C and Vitamin-A.

19. (a) Comment on tear secretion and its abnormalities.

Or

(b) How are corneal transparency and refractive of refractive power regulated? Explain .

20. (a) Explain the composition, formation and function of refractive power regulated? Explain.

Or

(b) Describe the chemistry of dehydration and transparency of lens.

C–4819	Sub. Code 91416A

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

NUTRITION

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is caused by deficiency of hemoglobin?

   (a) Malaria (b) Rabies

   (c) Anemia (d) Cholera

2. Night blindness is caused due to deficiency of

   (a) Vitamin 'A' (b) Vitamin 'D'

   (c) Vitamin 'E' (d) Vitamin 'K'

3. Complications of obesity are

   (a) Sleep disorders (b) Pregnancy Risks

   (c) Physical disability (d) All of the above

4. Symptoms of PEM are

   (a) Enlarged stomach (b) Heart disease

   (c) Cancer (d) None of the above

5. Functions of the body fat are except

(a) Energy

(b) Obesity

(c) Nerve impulse transmission

(d) Thermal insulation

6. Deficiency of Calcium is except

(a) Brittle bone (b) Cramps

(c) Anemia (d) Osteoporosis

7. Eye diseases associated with measles are except

(a) Corneal Scaring (b) Retinopathy

(c) Optic neuritis (d) Drooping of eye lids

8. Vitamin 'E' deficiency are except

(a) Nerve damage

(b) Muscle weakness

(c) Involuntary movement of eyes

(d) Retinopathy of prematurity

9. 1 Kcal is equal to

(a) 4.184 K Joules (b) 4.184 Joules

(c) 1000 J (d) 4.184 M Joules

10. Sources of fats and Oils are

(a) Ghee and Butter

(b) Oil Seeds and nuts

(c) Meat, Poultry Fish

(d) All of the above

Part B (5 × 5 = 25)

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

11. (a) Write about 11 food groups.

Or

(b) Nutrients with anti oxidant properties explain.

12. (a) Define BMR and factors affecting BMR.

Or

(b) Write on Assessment of nutritional status.

13. (a) Explain in detail about "Atherosclerosis".

Or

(b) How does lipids affect the eye?

14. (a) Write on Bomb calorimetry.

Or

(b) What are the specific Dynamic action of food?

15. (a) Explain functions and sources of carbohydrates.

Or

(b) Classify Lipids.

Part C (5 × 8 = 40)

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

16. (a) Discuss in detail about PEM.

Or

(b) Write on Essential and non-essential Amino acids.

17. (a) What are the effects of obesity on health?

Or

(b) Functions and sources of fat. Describe.

18. (a) Write on protein – its functions, requirements and dietary sources.

Or

(b) Write in detail about Iron and its role in eye.

19. (a) Zero birth weight Babies. Explain.

Or

(b) Micro nutrients and its association with eye. Explain.

20. (a) Total energy requirement for different Age group.

Or

(b) Promoting a healthy and sound habit in pregnancy.

———————

C–4820	Sub. Code 91416B

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

BASIC LIFE SUPPORT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. ———————— is a pattern used for bandaging the head

   (a) Circular turns (b) Simple spiral

   (c) Figure (d) Spica

2. ———————— is used in cases of asphyxia.

   (a) Valsalva maneuver

   (b) Heimlich maneuver

   (c) Muller maneuver

   (d) Crede maneuver

3. Improvement in visual acuity with pin hole indicates

   (a) Cataracts

   (b) Corneal opacities

   (c) Refractive errors

   (d) None of the above

4. One of the following is correct about near vision

(a) Examiner holds the card for the patient

(b) Check at distance less than 30 cm only

(c) Check for the range of patients reading distance

(d) None of the above

5. Prematurity is characterised by

(a) Gestational age at birth < 36 weeks

(b) Low birth weight ≤ 1.5 kg

(c) Risk of Hypoxia

(d) All the above

6. Lid reversion is least indicated in

(a) Conjunctivitis (b) FB in conjunction

(c) Keratoconus (d) Papillary or follicle

7. Pyrexia is a term that indicates a body temperature of

(a) 100.4 – 105.8° F (b) > 106° F

(c) 96.8 – 100°F (d) < 96.8° F

8. Oral temperature measurement is not for

(a) infants

(b) people with rectal infections

(c) people with anxiety issues

(d) conscious patients

9. ———— is a potential consequence of inaccurate medical records

(a) Improved patient outcomes

(b) Legal issues

(c) Decreased workload for health care providers

(d) Increased patient satisfaction

10. ———————— is the purpose of performance appraisal conducted by the HR department?

(a) To determine salaries

(b) Identify training needs

(c) Assess and provide feedback for employees

(d) Encourage resignations

Part B (5 × 5 = 25)

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

11. (a) List the non-clinical departments in Hospital.

Or

(b) Write in brief about NABH.

12. (a) Recording or Temperature and BP in medical records.

Or

(b) Sites to measure temperature in Human body.

13. (a) Explain in brief abut Torch light examination.

Or

(b) Importance of general medical history patients.

14. (a) Diagram of a visual acuity chart and recording of acuity.

Or

(b) Components of visual acuity.

15. (a) Uses of defibrillator.

Or

(b) Basics of first aid.

Part C (5 × 8 = 40)

Answer **all** questions.

16. (a) How to do first aid in hemorrhages or bleeding?

Or

(b) Write in detail about CPR.

17. (a) HIV prevention protocol to be followed in hospital.

Or

(b) Write in detail about Medical records.

18. (a) Write in detail about checking of temperature.

Or

(b) Discuss about the factors that affect pulse rate.

19. (a) How to examine pupils of a patient?

Or

(b) History taking in squint patients.

20. (a) Brief on components of vision.

Or

(b) Prerequisites for checking visual acuity.

———————

C–4821

Sub. Code
91423

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

OCULAR ANATOMY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. How many layers are present in retina?

   (a) 9 (b) 8

   (c) 10 (d) 6

2. A mesh like structure at the optic nerve that surrounds and supports the retinal ganglion cell axons as they form the optic nerve is called as

   (a) Trabecular meshwork

   (b) Schlem's canal

   (c) Lamina cribrosa

   (d) None of the above

3. Capsule of the crystalline lens is thinnest at

   (a) Anterior pole (b) Posterior pole

   (c) Equator (d) None of the above

4. In a normal adult, the depth of anterior chamber is about

(a) 2.5 mm (b) 3 mm

(c) 3.5 mm (d) 4 mm

5. Which is the most abundant protein found in the rod cells of retina

(a) Opsin (b) rhodopsin

(c) Iodospin (d) None of the above

6. The lateral rectus muscle receives its nerve supply from

(a) Facial nerve (b) Trigeminal nerve

(c) Abducens nerve (d) Trochlear nerve

7. Diameter of the macula lutea is

(a) 3.5 mm (b) 1.5 mm

(c) 4.5 mm (d) 5.5 mm

8. Which cranial nerve supplies cornea

(a) Trigeminal nerve (b) Oculomotor nerve

(c) Abducens nerve (d) Trochlear nerve

9. Which nerve fibre is affected first in glaucoma

(a) Arcuate fibres

(b) Nasal fibres

(c) Papillo macular bundle

(d) None of the above

10. Which one of the following is a sweat gland

(a) Gland of moll

(b) Gland of zeis

(c) Meibomian gland

(d) All of the above

Part B (5 × 5 = 25)

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

11. (a) Write about the milestones of development of ocular structures.

Or

(b) Write about blood and nerve supply of cornea.

12. (a) Write about the gross anatomy of eyelid with neat diagram.

Or

(b) Write about structure of crystalline lens with neat diagram.

13. (a) Write about the functions of RPE and layer of rods and cones.

Or

(b) Write about the Nerve supply of EOM in detail with neat diagram.

14. (a) Write about the structure of iris and ciliary body.

Or

(b) Write about the course and distribution of 3rd cranial nerve.

15. (a) Write about the angle of anterior chamber, also include a note on shaffer's grading.

Or

(b) Write about the anatomy of optic nerve.

Part C (5 × 8 = 40)

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

16. (a) Explain about the anatomy of visual pathway with neat diagram.

Or

(b) Write in detail on the histology of corneal layers with neat diagram.

17. (a) Write about the anatomy of conjunctive along with the glands present in conjunctiva.

Or

(b) Write about the Microscopic and macroscopic appearance of uvea.

18. (a) Write about the course, distribution and clinical aspects of 6^{th} cranial nerve.

Or

(b) Write about the origin, course and insertion of extraocular muscles.

19. (a) Write about the anatomy of vitreous in detail.

Or

(b) Write in detail on the nerve supply of eyeball.

20. (a) Write in detail on macular, fovea centralis, optic nerve and optic disc.

Or

(b) Write in detail on lacrimal gland and lacrimal passages with neat diagram.

———————

C–4822

Sub. Code
91424

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Deficiency of vitamin A results in insufficient rhodopsin in the rods leading to

   (a) Colour blindness (b) Total blindness

   (c) Night blindness (d) Amaurosis fugax

2. Which of the following theory states that the regular arrangement of fibrils in the stroma ensures minimum dispersion?

   (a) Goldmann's theory

   (b) Maurice theory

   (c) Tscherning's theory

   (d) None of the above

3. Imbert fick law is

   (a) $W = PA$ (b) $P = WA$

   (c) $A = WP$ (d) None of the above

4. Near point of accommodation is also known as

(a) Amplitude of accommodation

(b) Punctum Proximum

(c) Punctum Remotum

(d) Range of accomodation

5. Rhythmic contraction and dilation of the pupil is known as

(a) Hippus

(b) ARP

(c) Homer's syndrome

(d) RAPD

6. The area in the eye which is also known as 'blindspot' is

(a) Macula lutea (b) Optic disc

(c) Fovea centralis (d) Lacrimal glands

7. Naso lacrimal duct is directed

(a) Downwards, slightly outwards and backwards

(b) Downwards, slightly inwards and back wards

(c) Downwards, slightly outwards and forward

(d) Downwards, slightly inwards and forward

8. Discrimination of 2 spatially separated target is known as

(a) Resolution (b) Recognition

(c) Minimum visible (d) All of the above

9. Diameter of fovea centralis

(a) 0.5 mm (b) 1.0 mm

(c) 1.5 mm (d) 2.5 mm

10. Optic nerve fibers once cut, do not regenerate because they are not covered by

(a) Myelin sheath (b) Neurilemma

(c) Both of the above (d) None of the above

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

Answer **all** the questions.

11. (a) Write about the formation and drainage of aqueous humour.

Or

(b) Write about the tear film dynamics.

12. (a) Write about the ocular changes in accommodation.

Or

(b) Define agonist, synergist and yoke muscle with example.

13. (a) Explain pupillary light reflex with neat diagram.

Or

(b) Write about the blood retinal barrier.

14. (a) Write about the various contrast sensitivity tests available.

Or

(b) Write about initiation and transmission of visual sensations.

15. (a) Write about the principle and procedure of EOG.

Or

(b) Write about the tests for colour vision.

Part C (5 × 8 = 40)

Answer **all** the questions.

16. (a) Explain about the various factors influencing IOP.

Or

(b) Write in detail on the mechanism of accommodation

17. (a) Write about the lesions of visual pathway with neat diagram.

Or

(b) Write in detail on ERG.

18. (a) Write about the physiology of eyelid movements.

Or

(b) Write about ocular circulation in detail.

19. (a) Write about the supra nuclear control of eye movements.

Or

(b) Write in detail on the measurement of visual acuity.

20. (a) Write in detail on neurophysiology of colour vision.

Or

(b) Write in detail on uveal meshwork and uveo-scleral drainage.

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C–4823

Sub. Code
91425

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

PHYSICAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Newton postulated the corpuscular theory based on
   (a) Rectilinear propogation of light
   (b) Newton's ring
   (c) Polarization
   (d) Thin film interference

2. Laser is used to produce
   (a) Coherent light (b) X rays
   (c) Microwaves (d) Polarized light

3. If monochromatic light falls on Young's double slit, the central fringe is
   (a) disappears (b) is coloured
   (c) is white (d) changes position

4. Which of the following phenomenon proves the transverse nature of light

(a) Dispersion (b) Polarization

(c) Interference (d) None of these

5. The wave theory of light was proposed by

(a) Newton (b) Planck

(c) Huygens (d) Brewster

6. Which one of the following cannot be polarized?

(a) Radio waves (b) Sound waves

(c) X rays (d) UV rays

7. Which phenomenon establish the particle nature of light

(a) interference (b) diffraction

(c) polarisation (d) none of these

8. Laser works on the principle of

(a) superposition of light

(b) quantum theory of radiation

(c) double refraction

(d) none of these

9. The data recorded in hologram are

(a) frequency and intensity

(b) amplitude and phase

(c) frequency and amplitude

(d) frequency and phase

10. Polarization is not seen with sound, because the sound waves are

(a) Longitudinal

(b) transverse

(c) not electromagnetic waves

(d) of long wavelength

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

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

11. (a) Differentiate between Fresnel and fraunhofer diffraction.

Or

(b) Write about law of reflection at a plane surface.

12. (a) Write about youngs double slit experiment.

Or

(b) Write about diffraction by a single slit.

13. (a) Write about the role of laser in ophthalmic surgery.

Or

(b) Write short notes on radiometry.

14. (a) Write about Lloyd mirror.

Or

(b) Write about the dispersive power and resolution.

15. (a) Write about Nicol prism.

Or

(b) Write about the classification of spectrum.

Section C (5 × 8 = 40)

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

16. (a) Explain in detail on Huygen's principle.

Or

(b) Write in detail on the fundamentals of laser.

17. (a) Write about the Newton's ring experiment.

Or

(b) Write in detail on the production and analysis of plane polarized light.

18. (a) Write in detail on any one of the method used to determine the velocity of light.

Or

(b) Write about the resolution of telescope and microscope.

19. (a) Write about diffraction by circular aperture.

Or

(b) Write in detail on the principle and applications of holography.

20. (a) Write in detail on zone plates.

Or

(b) Write in detail on quarter wave plates and half wave plates.

———————

C–4824	Sub. Code 91427

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Second Semester

Optometry

MICROBIOLOGY AND PATHOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. The study of fungi and their unique relationships with other organisms and the environment is

   (a) Bacteriology (b) Mycology

   (c) Parasitology (d) None of the above

2. Who is called the father of microbiology?

   (a) Alexander fleming

   (b) Joseph Lister

   (c) Louis Pasteur

   (d) Galileo

3. Gram staining is a

   (a) Simple staining

   (b) Acid fast staining

   (c) Differential staining

   (d) Negative staining

4. What are the causative organisms of tuberculosis?

(a) M.Tuberculae (b) M. leprae

(c) Rubella (d) Adeno virus

5. Cellular hypertrophy

(a) a decrease in cell number

(b) decrease in cell size

(c) increase in cell size

(d) none of the above

6. Define lesions

(a) characteristics changes in the tissue and cells produced by disease

(b) cause of the disease

(c) both (a) and (b)

(d) none of these

7. Which of the following refers to the cause of the disease?

(a) Prognosis (b) Etiology

(c) Pathogenesis (d) Complication

8. The following agent does not have the ability to replicate until it infects a cell

(a) Virus (b) Bacteria

(c) Protozoa (d) Fungi

9. When a swab of bacteria is subjected to gram staining, the organism that appear purple or blue under a light microscope are

(a) Gram negative (b) Acid fast bacteria

(c) Spirochetes (d) Gram positive

10. Expand TORCH

(a) Toxoplasmosis, Rubella, cytomegalo virus and Histoplasmosis

(b) Toxocariosis, Rubella, cytomegalovirus and Herpes simplex

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

(d) None

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

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

11. (a) Write about the structure and function of immunoglobulin.

Or

(b) Write about the clinical features, ocular lesions and treatment of rubella.

12. (a) Write about the procedure to collect conjunctival swab.

Or

(b) Write about cell injury.

13. (a) Write about normal ocular flora.

Or

(b) Write about orbital tumours.

14. (a) Write about diabetic cataract.

Or

(b) Write about culture media.

15. (a) Write about lens induced glaucoma.

Or

(b) Write about the classification of uveitis.

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

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

16. (a) Explain about sterilization and disinfection.

Or

(b) Write in detail on retinoblastoma.

17. (a) Write about the classification and clinical features of conjunctivitis.

Or

(b) Write about the vascular and cellular components involved in inflammation.

18. (a) Write about the clinical features of keratoconus.

Or

(b) Write in detail on gram positive bacilli.

19. (a) Write in detail on the classification and features of corneal ulcer.

Or

(b) Write in detail on general immune system.

20. (a) Write in detail on the pathology and types of cataract.

Or

(b) Write in detail on the ocular lesions of pox, adeno and retro virus.

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C–4825	Sub. Code 91433

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

Optometry

VISUAL OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What does transduction of light energy mean?
   (a) Conversion of light energy to mechanical energy
   (b) Conversion of light energy to chemical energy
   (c) Conversion of light energy to electrical energy
   (d) Both (b) and (c)

2. What type of image is formed by the eye lens on the retina?
   (a) Real and erect (b) Virtual and inverted
   (c) Real and inverted (d) Virtual and erect

3. Which cells in the retina are responsible for color vision?
   (a) Rod cells
   (b) Bipolar cells
   (c) Ganglion cells
   (d) Cone cells

4. Manifest hyperopia is

(a) Easily controlled by ciliary muscles

(b) Revealed only by cycloplegic refraction

(c) Usually the prescribed power

(d) Concealed by patient's accommodation

5. Which muscles are responsible for changing the focal length of the eye lens for clear vision?

(a) Ciliary muscles (b) Sclerotic layer

(c) Choroid (d) WBC (White Blood Cells)

6. To see nearby objects clearly, what should the ciliary muscles do?

(a) Relax (b) Contract the lens

(c) Expand the lens (d) All of these

7. Accommodative insufficiency is characterized by

(a) Low NRA

(b) Low PRA

(c) Normal near acuity with distance vision difficulty

(d) Low NFV

8. When vertex distance of a positive lens is moved towards the eye

(a) Effective power increases

(b) Effective power decreases

(c) Power stays the same

(d) All the above

9. Cycloplegic drug that is commonly used in clinic is

(a) Tropicamide (b) Phenylephrine

(c) Atropine (d) Cyclopentolate

10. Tentative presbyopic addition is calculated using
    (a) Donders rule
    (b) Young's experiment
    (c) Hofstetters formula
    (d) NFV PFV method

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

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

11. (a) Explain about donder's reduced eye model.

Or

    (b) Explain the visual function of each part of the eye.

12. (a) Write notes on school myopia.

Or

    (b) Write in short about pesudophatia.

13. (a) Give note on mechanism of accommodation.

Or

    (b) What is
        (i) Amplitude of a accommodation
        (ii) Range
        (iii) Facility of accommodation.

14. (a) Give a brief account on spectacle magnification.

Or

    (b) Sings and symptoms of presbyopia.

15. (a) Procedure of tetinoscopy.

Or

    (b) Fogging techniques in brief.

Part C (5 × 8 = 40)

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

16. (a) Write in detail about Bausch and Lomb Keratometry.

Or

(b) Write detailed note on contrast sensitivity.

17. (a) Give notes on pathological myopia.

Or

(b) Write in detail about Aphakia.

18. (a) Measurement of amplitude of accommodation and its clinical relevance.

Or

(b) Write in detail about Anisometropia.

19. (a) Importance of vertex distance and notes on effective power.

Or

(b) Write about

(i) Depth of focus

(ii) depth of field

(iii) Retinal image size calculation.

20. (a) Techniques of ratinoscopy in neutralizing astmatic reflex.

Or

(b) Write in detail about JCC.

C–4826	Sub. Code 91434

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

Optometry

OPTOMETRIC OPTICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Photochromic lens contains crystals of

   (a) silver bromide (b) silver halide

   (c) silver chloride (d) all of these

2. If the neutralizing power of a lens is –4.00 D, the dioptric value of that lens is

   (a) – 2.00 D (b) + 2.00 D

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

3. Pin cushion effect is the result of

   (a) decreased magnification towards lens periphery

   (b) dispersion

   (c) increased magnification towards lens periphery

   (d) none of these

4. ARC consists of extremely thin layer of

(a) calcium fluoride

(b) magnesium fluoride

(c) sodium fluoride

(d) none of these

5. PMMA is used to make

(a) Polycarbonate (b) CR 39

(c) Crown glass (d) None of these

6. Datum center refers to the mid-point of the

(a) datum length (b) datum line

(c) mid-datum depth (d) all of these

7. Advantage of Fresnel lenses is

(a) decreased thickness

(b) cheap

(c) decrease patient's visual acuity

(d) decreased magnification

8. Supra frame is a

(a) metal frame (b) semi rimless frame

(c) rimless frame (d) none of these

9. The geometric centre distance of a frame marked 52 | | 18 is

(a) 52 (b) 72

(c) 70 (d) 68

10. Toughest ophthalmic lens is

(a) CR 39 (b) Crown glass

(c) Polycarbonate (d) None of these

Part B (5 × 5 = 25)

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

11. (a) Write about the classification of spectacle frames.

Or

(b) Write about the tilt induced power.

12. (a) Write about vertex distance and vertex power with example.

Or

(b) Write about deviation through prism.

13. (a) Write about frame measurements.

Or

(b) Write about sag formula with example.

14. (a) Write about rotary prism.

Or

(b) Write about inspection of lens quality.

15. (a) Write about cylindrical lenses.

Or

(b) Write about magnifiers.

Part C (5 × 8 = 40)

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

16. (a) Write about bifocal lenses.

Or

(b) Write about aberrations in ophthalmic lenses.

17. (a) Write about lens surfacing.

Or

(b) Write about magnification and minification of high plus and minus lenses.

18. (a) Write about faults on lens surface.

Or

(b) Write about compounding and resolving prism.

19. (a) Write in detail on toric transposition.

Or

(b) Write about inspection of lens quality in detail.

20. (a) Define prism, unit of prism power, thickness difference and base apex notation.

Or

(b) Write about Fresnel prisms.

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C–4827	Sub. Code 91435

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Third Semester

Optometry

OCULAR DISEASES – I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 ×1 = 10)

Answer **all** questions.

1. Munson's sign is seen in.

   (a) Keratoconus (b) Corneal Ulcer

   (c) Microcornea (d) All of these

2. Anterior lenticonus is seen in.

   (a) Marfan’s syndrome

   (b) Ehler Danlos syndrome

   (c) Well-Marchessani syndrome

   (d) None of these

3. For transplantation cornea is preserved in.

   (a) Modified MK medium

   (b) Glycerine medium

   (c) Wet medium

   (d) all of the above

4. Microscopic examination of corneal ulcer revealed branching septate hyphae. The probable diagnosis is.

(a) Histoplasma (b) Adenovirus

(c) Aspergillus (d) None of these

5. Trachoma is caused by.

(a) Chlamydia trachomatis

(b) E. Coli

(c) Bassilus

(d) Salmonella

6. Pre auricular lymph nodes may be enlarged in all except.

(a) Bacterial conjunctivitis

(b) Viral conjunctivitis

(c) Allergic conjunctivitis

(d) Chlamydial

7. Intense itching is a pathognomic feature of.

(a) Spring catarrh

(b) Trachoma

(c) Follicular conjunctivitis

(d) All of the above

8. When an exra row of cilia occupies the position of Meibomian gland it is called as?

(a) Trichiasis (b) Madarosis

(c) Distichiasis (d) None of the above

9. The inward turning of the lid margin is called.

(a) Ectropion (b) Entropion

(c) Trichiasis (d) None of these

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

Section B (5 × 5 = 25)

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

11. (a) Write about the congenital anomalies of eyelid.

Or

(b) Write about the ocular manifestations of vitamin A deficiency.

12. (a) Write about the etiology and clinical features of dry eye.

Or

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

13. (a) Write about corneal opacities.

Or

(b) Write about sympathetic ophthalmia.

14. (a) Write about the etiology and clinical features of scleritis.

Or

(b) Write about corneal stromal dystrophies.

15. (a) Write about the etiology and clinical features of developmental glaucoma.

Or

(b) Write about chalazion and hordeolum.

Section C (5 × 8 = 40)

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

16. (a) Explain about the tumors of eyelid.

Or

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

17. (a) Write about the etiology, clinical features and management of primary open angle glaucoma.

Or

(b) Write about the etiological classification, clinical features and management of bacterial conjunctivitis.

18. (a) Write about the etiology, clinical features and management of anterior uveitis.

Or

(b) Write in detail on the procedure of phacoemulsification.

19. (a) Write in detail on secondary cataract.

Or

(b) Write in detail on vogt koyanagi harada syndrome.

20. (a) Write in detail on laser procedures in glaucoma.

Or

(b) Write in detail on the etiology, clinical features and management of bacterial corneal ulcer.

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C–4828	Sub. Code 91437

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Sulphonamide drug is
   (a) antibiotic (b) antifungal
   (c) antiviral (d) corticosteroid

2. Which mechanism signifies the effective drug removal from the body
   (a) Clearance (b) Bioavailability
   (c) Safety (d) Volume of distribution

3. The rate of drug absorption is high in
   (a) small intestine (b) large intestine
   (c) stomach (d) all of the above

4. Carbonic anhydrase inhibitors lower IOP by
   (a) Decreasing trabecular outflow
   (b) Decreasing aqueous production
   (c) Increasing uveo-scleral outflow
   (d) None

5. ED 50 is used to determine which of the following parameter

(a) Potency (b) Efficacy

(c) Safety (d) Toxicity

6. Miotics are also known as

(a) Parasympathomimetic drugs

(b) Sympathomimetic drugs

(c) Parasympatholytic drugs

(d) Sympatholytic drugs

7. What is the major mechanism of transport of drugs across biological membrane?

(a) Passive diffusion

(b) Active transport

(c) Facilitated diffusion

(d) Endocytosis

8. Which of the following drug has the least effect on accommodation?

(a) Atropine (b) Cyclopentolate

(c) Tropicamide (d) Phenylephrine

9. Dexamethasone is a

(a) Antifungal (b) Antiviral

(c) Corticostreoid (d) Antibiotic

10. Which organ is responsible for metabolism in the first pass effect?

(a) Liver (b) Brain

(c) Heart (d) All of the above

Part B (5 × 5 = 25)

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

11. (a) Write about the nature and sources of drug.

Or

(b) Write about structure activity relationship.

12. (a) Write about the drug absorption and factors affecting drug absorption.

Or

(b) Write about general anesthetics.

13. (a) Write about anti cholinergic drugs.

Or

(b) Write about ophthalmic corticosteroids.

14. (a) Write about drug excretion and toxicity.

Or

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

15. (a) Write about dose response relationship.

Or

(b) Write about the pharmacotherapy for insomnia.

Part C (5 × 8 = 40)

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

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

Or

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

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

Or

(b) Write about local anesthetics.

18. (a) Write about new drug delivery systems and recent advancements.

Or

(b) Write in detail on antiglaucoma drugs.

19. (a) Write in detail on anti cholinergic drugs.

Or

(b) Write in detail on NSAID.

20. (a) Write in detail on the anti convulsants.

Or

(b) Write in detail on drug receptors and mechanism of drug action.

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C–4829	Sub. Code
	91443

B.Sc. DEGREE EXAMINATION,
APRIL 2025.

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTATION AND CLINICAL EXAMINATIONS OF THE VISUAL SYSTEM (CEVS)

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the principle of retinoscope?
   (a) focaultz principle
   (b) depth of field
   (c) depth of focus
   (d) stereopsis

2. Topical atropine is contraindicated in
   (a) Retinoscopy in children
   (b) Iridocyclitis
   (c) Corneal ulcer
   (d) Primary angle closure glaucoma

3. The operation of which instrument is based on purkinje sanson images
   (a) IDO (b) Retinoscope
   (c) Slit lamp (d) Keratometer

4. Which one of the following is a corneal topographer?

(a) Orbscan (b) Pentacam

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

5. Which of the following is not a colour vision testing device?

(a) Ishihara test plates

(b) D 15

(c) FM 100

(d) Vistech chart

6. Stenopic slit is used to assess

(a) the binocular balancing

(b) the axis of astigmatism

(c) the macular function

(d) the sensitivity of cornea

7. An IDO will project

(a) Virtual image (b) Real image

(c) Upright image (d) Flat image

8. Gonioscopy is used to assess

(a) angle of anterior chamber

(b) corneal curvature

(c) anterior surface of the eye

(d) none of the above

9. Principle of duochrome is

(a) spherical aberration

(b) chromatic aberration

(c) coma

(d) astigmatism

10. 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

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

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

11. (a) Write about PAM.

Or

(b) Write about any three methods used in the determination of presbyopic add.

12. (a) Write about the corneal sensitivity test.

Or

(b) Write about TBUT.

13. (a) Write about photostress test.

Or

(b) Write about colour vision test.

14. (a) Write in detail on clock dial and fan and block test.

Or

(b) Write about the evaluation of extra ocular motility.

15. (a) Write about Hirschberg and modified krimsky tests.

Or

(b) Write about saccades and pursuits.

Part C (5 × 8 = 40)

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

16. (a) Write in detail on various methods of binocular balancing.

Or

(b) Write in detail on squint evaluation.

17. (a) Write about the significance of with and against motion in retinoscopy.

Or

(b) Write in detail on dry eye evaluation.

18. (a) Write in detail on the procedure and interpretation of indirect ophthalmoscopy.

Or

(b) Write in detail on the procedure and recording of ERG.

19. (a) Write in detail on the procedure of dynamic retinoscopy.

Or

(b) Write in detail on cyclodemia, sudden fogging and boorish delayed spherical end point.

20. (a) Write about the components of trial set.

Or

(b) Write in detail of visual acuity assessment.

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C–4830

Sub. Code
91444

B.Sc. DEGREE EXAMINATION, APRIL 2025

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 not a clinical sign of chronic papillodema.
   (a) Physiological cup reforms
   (b) Optic disc edema resolves
   (c) Hemorrhages and exudates resolve
   (d) Optic atrophy ensues
2. The classical visual field defect in the early to moderate stage of retinitis pigmentosa is
   (a) Central scotoma
   (b) Peripheral ring scotoma
   (c) Enlargement of blind spot
   (d) Nasal step
3. Fibro vascular proliferation is seen at which stage of ROP.
   (a) Stage 1 (b) Stage 2
   (c) Stage 3 (d) Stage 4

4. Smoke stack pattern of FFA is a classical feature of
   (a) CSR (b) CRAO
   (c) Laser spots (d) None of the above
5. The common ocular association of myasthenia gravis is
   (a) Corneal ulcer (b) Glaucoma
   (c) Ptosis (d) All of the above
6. Multiple sclerosis is a
   (a) Autoimmune condition
   (b) Demylenating disease
   (c) Infectious condition
   (d) Both (a) and (b)
7. The most common systemic association of arteric ischeamic optic neuropathy is
   (a) Myasthenia gravis
   (b) Giant cell arteritis
   (c) Multiple sclerosis
   (d) Usher's syndrome
8. The most symptom of retinal detachment is
   (a) Flashes and floaters
   (b) Pain
   (c) Diplopia
   (d) Haloes
9. In wernicke's hemianopic pupil the damage is at the level of
   (a) Optic tract (b) Retina
   (c) Optic chiasma (d) Occipital lobe
10. Cholesterol deposition of vitreous is termed as
   (a) PVD
   (b) Asteroid hyalosis
   (c) Synchisis scintillans
   (d) None of the above

Part B (5 × 5 = 25)

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

11. (a) Write about the central retinal arterial occlusion.

Or

(b) Write about classification of optic neuritis.

12. (a) Write about hereditary optic atrophies.

Or

(b) Write about abnormal pupillary reactions.

13. (a) Write about vitreous detachment.

Or

(b) Write about evaluation of optic nerve diseases.

14. (a) Write about the etiology and clinical features of papillodema.

Or

(b) Write about supranuclear disorders of eye movements.

15. (a) Write about defects in colour vision.

Or

(b) Write about arteric anterior ischaemic optic neuropathy.

Part C (5 × 8 = 40)

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

16. (a) Explain about the classification, clinical features and management of retinal detachment.

Or

(b) Write in detail on the applied anatomy of 3rd cranial nerve and write about the etiology, clinical aspects, clinical features of 3rd cranial nerve palsy.

17. (a) Write about the lesions of visual pathway and visual field defects.

Or

(b) Write about drug induced optic neuropathies.

18. (a) Write in detail on hypertensive retinopathy.

Or

(b) Write in detail on congenital optic nerve anomalies.

19. (a) Write in detail on classification, causes and management of nystagmus.

Or

(b) Write in detail on retinal vasculitis.

20. (a) Write in detail on surgical procedures for retinal detachment.

Or

(b) Write in detail on non arteric anterior ischaemic optic neuropathy.

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C–4831	Sub. Code
	91446

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Optometry

OCCUPATIONAL OPTOMETRY AND COMMUNITY OPTOMETRY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Which one of the following is the defined as the study of how people work in their environment?

   (a) Hazard (b) Ergonomics

   (c) Risk (d) Impact

2. What is PPE?

   (a) equipment that will protect the user against health or safety risks at work

   (b) reactive

   (c) health hazard

   (d) none of the above

3. _____ cause factors include hazardous weather, volcanic ash, sand, dust and birds.

   (a) physical (b) chemical

   (c) biological (d) environmental

4. Exposure can be classified as _____ or acute.

(a) chronic (b) exposure

(c) effective (d) non hazardous

5. What is the basic principle of safety?

(a) work (b) education

(c) skill (d) none of above

6. Ergonomics can roughly be defined as the study of people in their working

(a) economic (b) environment

(c) physical (d) chemical

7. Primary objective of workplace safety is preventing workplace _____ illness and fatalities.

(a) injuries (b) hazard

(c) chemical split (d) none of the above

8. _____ wants to provide information and education to allow any employee to avoid injury.

(a) Governor

(b) Environmental health and safety

(c) GPCB

(d) None of the above

9. All persons are required to use proper _____ while using ground tools or machinery.

(a) personal protective equipment

(b) personal hazard control

(c) safe working

(d) none of the above

10. Safety management is ———— identification system.

(a) control (b) hazard

(c) skill (d) none of the above

Part B (5 × 5 = 25)

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

11. (a) Write about the definition and units of light.

Or

(b) Write about the determinants of health.

12. (a) Write about electromagnetic radiation and its effect on eye.

Or

(b) Define blindness and visual impairment.

13. (a) Write about occupational agents caused by chemical agents.

Or

(b) Write about nutritional blindness with reference to vitamin A deficiency.

14. (a) Write about health manpower and planning.

Or

(b) Define occupational health, hygiene and safety.

15. (a) Write about the role of communication for eye care program.

Or

(b) Write in detail on colour vision tests.

Part C (5 × 8 = 40)

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

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

Or

(b) Write about the protective methods of occupational hazards.

17. (a) Write about visual standards in railways and airline.

Or

(b) Write about vision 2020.

18. (a) Write about CVS and visual display units.

Or

(b) Write in detail on tele optometry and its application in public health.

19. (a) Write about the set up of camp for evaluation and assessment of occupational eye diseases.

Or

(b) Write about occupational related caused by physical and biological agents.

20. (a) Define colour, write about colour theory and colour coding.

Or

(b) Write about organization and management of eye care programs.

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C–4832

Sub. Code
91447A

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Optometry

HOSPITAL PROCEDURES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. BP apparatus is also known as

   (a) Oximeter (b) Sphygmomanometer

   (c) Glucometer (d) None of the above

2. The normal range of RBC per microliter of blood for men is

   (a) 4.5 to 6 million (b) 5.0 to 7.5 million

   (c) 2 to 3 million (d) 1 to 2.5 million

3. ESR stands for

   (a) Eosinophils sedimentation rate

   (b) Erythrocyte sedimentation rate

   (c) Both (a) and (b)

   (d) None of the above

4. The recording of electrical activity of the heart from the electrodes placed on the surface of skin is known as

(a) ERG (b) EEG

(c) ECG (d) VEP

5. 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

6. Which one of the following is not a physical agent of sterilization

(a) sunlight (b) radiation

(c) drying (d) dyes

7. Which one of the following is used for holding lid open during ophthalmic surgery

(a) Forceps (b) Curets

(c) Scleral depressor (d) Speculum

8. Which one of the following is a surgical technique used in cataract extraction

(a) Capsulorrhexis (b) Curretage

(c) Iridectomy (d) None of the above

9. Bactericidal agents

(a) kill bacteria

(b) prevent bacterial multiplication

(c) both of the above

(d) none of the above

10. Which one of the following is used for making an incision in the cornea for cataract surgery

(a) Keratomes (b) Thermal cautery

(c) Scissors (d) None of the above

Section B (5 × 5 = 25)

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

11. (a) Write about the four main vital signs and its indications.

Or

(b) Write about the surgical instruments used in cataract surgery.

12. (a) Write about the hand hygiene and demonstration of proper hand washing technique.

Or

(b) Write about IPC measures.

13. (a) Write notes on thyroid function test.

Or

(b) Write about blood collection and handling.

14. (a) Write about the principle, procedure and applications of Stethoscope and BP apparatus.

Or

(b) Write about glucose tolerance test.

15. (a) Write about the patient education and counselling on IPC.

Or

(b) Write notes on infection prevention.

Section C (5 × 8 = 40)

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

16. (a) Write about the route of medication administration.

Or

(b) Write in detail on the common microbiology test procedures.

17. (a) Write about the principle, procedure and applications of ECG.

Or

(b) Explain in detail on sterilization and disinfection.

18. (a) Write about the care and handling of surgical instruments used in ophthalmic operating room.

Or

(b) Write in detail on the common clinical chemistry test procedures.

19. (a) Write in detail on the specimen collection and handling.

Or

(b) Write in detail on the urine culture and sensitivity.

20. (a) Write in detail on the admission and discharge procedures.

Or

(b) Write in detail on the different methods of quality control for disinfection and sterilization.

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C–4833

Sub. Code
91447B

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Optometry

QUALITY AND PATIENT SAFETY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 1 = 10)

Answer **all** questions.

1. Research, Quality assessment and quality improvement

   (a) Use scientific methods to test hypothesis and statistical methods to analyse data

   (b) Are considered protocols rather than projects

   (c) Do not share the aspect of systematic investigation

   (d) None of the above

2. All of the following are key aspects of quality except

   (a) It depends upon patient perceptions

   (b) It does not change with time

   (c) It considers patient needs

   (d) It promotes high levels of perception

3. Meaningful quality process measures must be

(a) Feasible and explainable

(b) Relevant and explainable

(c) Valid and identifiable

(d) Relevant and valid

4. Which one of the following is considered important part of new hospital plan, not only for aesthetics and access, but also to utilize the potential to capture or avoid natural energy

(a) Provision for disasters

(b) Functional requirements

(c) Citing and orientation

(d) Environmental impact analysis

5. Which of the following is not considered by an organization while studying existing hospital facilities in an area

(a) Bed ratio

(b) Hospital occupancy

(c) Physical condition of facilities

(d) Perception of patients

6. Natural disaster causing maximum deaths

(a) Meterological (b) Geological

(c) Hydrological (d) Fires

7. Pathological waste depends on

(a) Tissues (b) Blood

(c) Body fluids (d) All of the above

8. Which is true about biomedical waste management

(a) Hazardous waste (b) Biowaste

(c) Infectious waste (d) All of the above

9. When bacteria develops defence against the antibiotics designed to kill them

(a) Antimicrobial resistance

(b) Antibiotic resistance

(c) Antiseptic resistance

(d) Both (a) and (b)

10. ———————— is primarily about detecting defective output rather than preventing it

(a) Quality audit (b) Quality control

(c) Management (d) Both (a) and (c)

Section B (5 × 5 = 25)

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

11. (a) Write about the importance of quality in healthcare.

Or

(b) Write about the regulations of biomedical waste management.

12. (a) Write about the patient safety framework.

Or

(b) Write about the process involved in quality assurance in emergency department.

13. (a) Write notes on types of antibiotic resistance.

Or

(b) Write about quality management tools.

14. (a) Write about segregation of biomedical waste.

Or

(b) Write about the role of clinician in quality and patient safety.

15. (a) Write about the mechanism of antibiotic resistance.

Or

(b) Write notes on infection prevention.

Section C (5 × 8 = 40)

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

16. (a) Write about the role of effective communication to deliver quality healthcare.

Or

(b) Write in detail on the factors that contribute to antibiotic resistance and also the consequences of antibiotic resistance.

17. (a) Write about the collection, storage, treatment and disposal of biomedical waste.

Or

(b) Explain about the steps involved in monitoring of clinical and managerial indicators.

18. (a) Write about the steps involved in the quality assurance of medical laboratories.

Or

(b) Write in detail on the environmental impact of biomedical waste.

19. (a) Write in detail on the strategies to combat antibiotic resistance.

Or

(b) Write in detail on the best practices for biomedical waste management.

20. (a) Write in detail on the quality assurance in diagnostic imaging centers.

Or

(b) Write in detail on health care and climate change.

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C–4834

Sub. Code
91412

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GENERAL ANATOMY AND PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List out any three functions of cerebellum.
2. Define erythroblastosisfoetalis.
3. Define GFR.
4. What is haemophilia?
5. Define cardiac output.
6. List out the types of joints.
7. Draw a neat labelled diagram of nephron.
8. Define hypoxia.
9. List any three functions of placenta.
10. What is polycythemia?

Part B (5 × 5 = 25)

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

11. (a) Tabulate the difference between arteries and veins.

Or

(b) Write in detail on the respiratory system.

12. (a) Write about the taste pathway.

Or

(b) Write about ABO system.

13. (a) Write about the functions and types of haemoglo bin.

Or

(b) Write about the cardiac conduction system.

14. (a) Explain the mechanism of respiration.

Or

(b) Write about the functions of lymph.

15. (a) Write about spermatogenesis.

Or

(b) Write in detail on the structure and functions of kidney.

Part C (3 × 10 = 30)

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

16. (a) Write in detail on the anatomy of brain with a neat labelled diagram.

Or

(b) Write about the process of digestion with a neat labelled diagram.

17. (a) Explain in detail on the anatomy of cardiovascular system with a neat labelled diagram.

Or

(b) Explain about the sympathetic and parasympathetic nervous system.

18. (a) Write in detail on cranial nerves.

Or

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

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C–4835

Sub. Code
91413

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GENERAL AND OCCULAR BIOCHEMISTRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Differentiate the glucose from fructose.
2. Write the structure of sphingomyelin.
3. Give the example of sulphur containing amino acids.
4. Define “Survy”.
5. Write short notes on “dry eye syndrome”
6. How is mucus layer of fear film spread on corneal smooth surface?
7. Relate the diabetes mellitus and diabetic catract.
8. Mention the change in aqueous humor when wearing contact lens.
9. Define bleeding time with reference value.
10. Write the Benedict’s test procedure to analyse the urine sugar.

Part B (5 × 5 = 25)

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

11. (a) Explain the structure and chemistry of starch.

Or

(b) List the classification of fatty acid with suitable example.

12. (a) Demonstrate the quaternary structure of protein with an example as Hb.

Or

(b) Prepare a note on surces, biological uses and deficiency disorder of Vitamin-A.

13. (a) Write short notes on the role of collagen in Cornea.

Or

(b) List the changes occur in the Cornea when contact lens wear.

14. (a) Mention the role of zonules in accommodation of lens.

Or

(b) Explain the biochemistry of lens protein and dehydration.

15. (a) Write briefly on blood grouping and its application.

Or

(b) Mention the types and role of plasma proteins.

Part C (3 × 10 = 30)

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

16. (a) Derive the reaction steps of TCA- cycle and explain.

Or

(b) Elaborate the biochemistry of atherosclerosis and its impact.

17. (a) Give a detailed note on mode of action and factors influencing enzyme action.

Or

(b) Demonstrate the layers and biochemical composition of tear film.

18. (a) Prepare a note on formation, biochemical composition and abnormalities of aqueous humour.

Or

(b) How would you estimate blood sugar level? Interpret the values.

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C–4836

Sub. Code
91414

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

GEOMETRICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the nature of light?
2. Define frequency of light.
3. What is absolute refractive indice?
4. What is critical angle?
5. Define focal Point.
6. Discuss the importance of magnification.
7. Write lens makers formula.
8. What is thick lens?
9. Define dispersive power.
10. What is cladding surface in optical fiber?

Part B (5 × 5 = 25)

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

11. (a) Discuss in brief speed and wavelength nature of light.

Or

(b) Write a short note about formats principle.

12. (a) Write a brief note about Snell's law and its importance.

Or

(b) Discuss the concept of wave front of a light ray.

13. (a) Write a short note on dioptic power.

Or

(b) Discuss in brief vergence equation.

14. (a) Discuss different thin lens shapes.

Or

(b) Write a note about front and back vertex power.

15. (a) Discuss the prison diopter.

Or

(b) Write some advantages and uses of optical fiber.

Part C

$(3 \times 10 = 30)$

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

16. (a) Write a detailed essay about the condition for refraction for a light ray based on formats principle.

Or

(b) Describe in detail refraction by plane parallel slab of glass.

17. (a) Describe the relationship between U,V and R for the convex spherical surface.

Or

(b) Describe lens makers formula for a thin lenses.

18. (a) Find the equivalent focal length of two thin lenses separated by a distance.

Or

(b) Write a essay about different types of optical fibers and its advantages.

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C–4837

Sub. Code
91415

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optomety

NUTRITION

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Balanced Diet.
2. Write on free Radicals.
3. Enlist Vitamin "D' Deficiencies.
4. Units of Energy Define.
5. Shortly write on Essential Amino acids.
6. What are the functions of Calcium? List out.
7. Define Night Blindness.
8. Enumerate micro - Nutrients,
9. Define malnutrition.
10. Write on Glaucoma.

Part B (5 × 5 = 25)

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

11. (a) Calories requirement for Adolescent age group.

Or

(b) Menu Planning. Explain.

12. (a) Write on Hyperlipidemia.

Or

(b) Effects of fat on health.

13. (a) What is BMR? And factors affecting BMR.

Or

(b) Functions of Essential fatty acids and its dietary sources.

14. (a) Methods of Nutritional assessment.

Or

(b) Write functions of Iron.

15. (a) Brief on sources and functions of Vitamins 'A'.

Or

(b) Write on Calcium and its Effects on Eye.

Part C (3 × 10 = 30)

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

Write Essay Types questions.

16. (a) Write in detail on PEM.

Or

(b) Measles and its Effects on Eye.

17. (a) Sources of Iron and its role in Vision. Explain.

Or

(b) Discuss in detail on sources and functions of proteins. Add a note on change in protein

18. (a) Describe in detail about antioxidants and its role in vision.

Or

(b) Write in detail on functions. Sources and Deficiency of Vitamins (fat soluble.)

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C–4838	Sub. Code 91416

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Optometry

COMPUTERS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What are the peripheral devices in a PC?

2. List out the types of computers.

3. What is number system?

4. Convert the decimal number 10 into binary Number.

5. What are the types of software?

6. Write the components of windows.

7. Write the applications if MS-Word.

8. List the various types of charts in MS-Excel.

9. What is the structure of an E-mail address? Explain with example.

10. Mention any four anti-virus Softwares for windows.

Part B (5 × 5 = 25)

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

11. (a) Write about the fundamentals of a computer system.

Or

(b) Explain about PC and their functions.

12. (a) Explain about decimal number system with example.

Or

(b) Write about decimal to binary conversion with example.

13. (a) Write short note on various operating systems.

Or

(b) What are the accessories of an operating system? Explain.

14. (a) Explain the basic operation on a block of Text in MS-Word.

Or

(b) How to change the printer setup? Explain with example.

15. (a) How to send an E-mail to a person? Explain with example.

Or

(b) Write about the browsing procedure in Internet.

Part C (3 × 10 = 30)

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

16. (a) Draw the basic block diagram of a PC and explain with it's components.

Or

(b) Explain about control panel of a system with it's applications.

17. (a) Perform the following operations in a word document which describe about the basics of a computer: (i) Edit (ii) Sare (iii) Cut (iv) paste (v) header and footer. (vi) Open (vii) Alignment.

Or

(b) Create an excel sheet for student mark calculation of ten students with five subjects. also insert bar chart for mark analysis.

18. (a) Explain about create, Edit, Animate a presentation with Various transitions for Five slides.

Or

(b) Write about the various types of VIRUSES. Explain the prevention methods of VIRUS infection with example.

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C–4839	Sub. Code 91422

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

OCULAR ANATOMY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define orbital fascia.
2. List out the extraocular muscles.
3. List out the cranial nerves in relation to the eyeball.
4. Write about the Meibomian gland.
5. List the layers of retina.
6. What are the contents of orbit.
7. Define arterial circle of willis.
8. What is lamina cribrosa.
9. Draw a neat labelled diagram of eyeball.
10. Define rods and cones.

Part B (5 × 5 = 25)

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

11. (a) Write about the drainage of aqueous humour.

Or

(b) Write about the size, shape, walls, base and apex of the orbit.

12. (a) Write about the glands of eyelids.

Or

(b) Write about the anatomy of ciliary muscles.

13. (a) Write about the structure of crystalline lens with its dimensions and layers.

Or

(b) Write about blood retinal barrier.

14. (a) Write about the anatomy of lacrimal gland.

Or

(b) Write about the structure of the angle of anterior chamber.

15. (a) Write about caruncle, plicasemilunaris, Krause's glands and wolfring's gland.

Or

(b) Write about the layers of sclera.

Part C

$(3 \times 10 = 30)$

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

16. (a) Write in detail on the anatomy of oculomotor nerve.

Or

(b) Write about the macroscopic structures and blood supply of uveal tract.

17. (a) Write in detail on the layers of eyelid.

Or

(b) Write in detail on the anatomy of visual pathway.

18. (a) Explain in detail on ocular embryology.

Or

(b) Write about the layers, blood supply and nerve supply of cornea.

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C–4840

Sub. Code
91423

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Saccadic and pursuit eye movements .

2. Define Accomodation.

3. List out any 3 causes of optic atrophy.

4. What is purkinje phenomenon?

5. Write the nerve supply of the following muscles.
   (a) Orbicularis oculli
   (b) LPS
   (c) Medial rectus
   (d) Lateral rectus

6. Define papillodema

7. Define stereopsis

8. Define spatial analysis

9. Define Listing's plane

10. List any three methods to check for tear film breakup time.

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

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

11. (a) Write about blood ocular barrier.

Or

(b) Write about the ocular changes in accommodation.

12. (a) Write about the secretion, formations, retension, redistribution and evaporation of the and tear film.

Or

(b) Explain the mechanism of actions of EOM.

13. (a) Explain pupillary light reflex with neat diagram.

Or

(b) Classify the types of colour vision deficiency and explain about them.

14. (a) Write about uniocular and binocular movement

Or

(b) Write about the drainage of aqueous humour.

15. (a) Write about the factors influencing IOP.

Or

(b) Write about the functions of retina and optic nerve with arrangement of nerve fibers.

Part C ($3 \times 10 = 30$)

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

16. (a) Write about the corneal transparency and hydration with the factors involved.

Or

(b) Write about the physiology of extraocular movements.

17. (a) Write in detail about precorneal tear film and chemistry of lachrymal secretion.

Or

(b) Explain the principle and procedure of ERG.

18. (a) Define IOP and write about the features and measurement of IOP.

Or

(b) Define contrast sensitivity and write in detail on the various contrast sensitivity tests.

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C–4841

Sub. Code
91424

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

PHYSICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define brewster's law.
2. Define simple harmonic motion.
3. Define coherence.
4. Define spectrum.
5. Define Rayleigh's criterion.
6. Define diffraction.
7. List out the three conditions for sustained interference.
8. What is an AR coating?
9. List out any three applications of holography.
10. Write about Huygen's principle.

Part B (5 × 5 = 25)

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

11. (a) Explain the experimental arrangement of holography with neat diagram.

Or

(b) Write about young's double slit experiment.

12. (a) Explain Fresnel biprism with neat diagram.

Or

(b) Write about the applications of holography.

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

Or

(b) Explain Grating dispersion, dispersive power and spectral resolution.

14. (a) Differentiate between interference and diffraction.

Or

(b) Write about Wollaston prism.

15. (a) Define polarization and write about the degree of polarization and plane of polarization and vibration.

Or

(b) Write about emission and absorption spectra.

Part C

$(3 \times 10 = 30)$

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

16. (a) Explain in detail on the Newton's ring experiment with neat diagram.

Or

(b) Explain in detail on the diffraction by single slit with neat diagram.

17. (a) Write about the analysis of light of unknown polarization with neat diagram.

Or

(b) Write in detail about diffraction grating.

18. (a) Write about interference in thin films due to reflected and transmitted light.

Or

(b) Write in detail about spectroscopic instruments.

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C–4842	Sub. Code
	91425

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Optometry

MICROBIOLOGY AND PATHOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define tissue injury.
2. Write any three functions of immunoglobulins.
3. Define cataract.
4. Define melonoma.
5. What is the use of potassium hydroxide mount?
6. Define Mycology.
7. Define disinfection.
8. List out the types of corneal ulcers.
9. What are the types of microscopes?
10. List out the types of corneal ulcer.

Part B (5 × 5 = 25)

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

11. (a) Write about lens induced glaucoma.

Or

(b) Write about the ocular lesions and treatment of acanthamoeba and toxocara.

12. (a) Write about normal ocular flora.

Or

(b) Explain tissue injury, vascular and cellular component involved in inflammation.

13. (a) Write in detail on the clinical features and treatment of hordeolum internum and extrenum.

Or

(b) Write about the clinical importance of staphylococci and streptococci.

14. (a) Explain Gram's staining and Giemsa staining.

Or

(b) Write about diabetic cataract.

15. (a) Write about orbital tumours.

Or

(b) Write about culture media.

Part C (3 × 10 = 30)

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

16. (a) Write in detail on the types of Hypersensitivity reaction.

Or

(b) Write in detail on sterilization and disinfection.

17. (a) Write in detail about basic laboratory techniques in Ophthalmology.

Or

(b) Write in detail about Retinoblastoma.

18. (a) Explain in detail about the pathology and types of cataract.

Or

(b) Write in detail on the clinical importance, ocular lesions and management of gram positive cocci and gram negative cocci.

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C–4843

Sub. Code
91432

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Optometry

VISUAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Refractive power of cornea.

2. What is optic axis?

3. First principal point of Gullstrand schematic eye is located at _____ mm from _____.

4. What is Dark adaptation?

5. Define colour vision.

6. What is secondary myopia?

7. What is Aniseikonia?

8. Any tow signs of astigmatism.

9. What is ocular refraction (k)?

10. Define depth of focus.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about axes and angles of eye.

Or

(b) What are the components of vision.

12. (a) Discuss about school Myopia.

Or

(b) Explain about the components of Hyperopia.

13. (a) Signs and symptoms of presbyopia.

Or

(b) Write notes on pseudophakia.

14. (a) What is fogging?

Or

(b) What is Duochrome test?

15. (a) Write notes on spherical aberration.

Or

(b) FACT chart.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write in detail about Gullstrand schematic eye.

Or

(b) Write notes on color vision testing.

17. (a) Elaborate on pathological myopia and its clinical features.

Or

(b) Management of Presbyopia.

18. (a) Write in detail about magnification in visual optics.

Or

(b) Types of Aberrations.

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C–4844

Sub. Code
91433

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Optometry

OCULAR DISEASES — I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Marcus Gunn jaw winking phenomeon
2. Symblepharon
3. Madarosis
4. Keratic preciptates
5. Sunflower cataract
6. List the IOFB removal techniques
7. Elsching pearls
8. Koeppe's and Busacca nodules
9. Punctal stenosis
10. Argon Laser Trabeculoplasty

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

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

11. (a) Dry eye investigations.

Or

(b) Staphyloma.

12. (a) Vitamin A deficiency.

Or

(b) Nanophthalmos.

13. (a) Keratoconus.

Or

(b) Neovascular glaucoma.

14. (a) Anti glaucoma medications.

Or

(b) Corneal Vascularisation.

15. (a) VKH syndrome.

Or

(b) Normotensive Glaucoma.

Part C $(3 \times 10 = 30)$

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

16. (a) Congenital cataract.

Or

(b) POAG.

17. (a) Trabeculectomy.

Or

(b) Scleritis.

18. (a) Bacterial keratitis.

Or

(b) Iridocyclitis.

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C–4845

Sub. Code
91434

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Optometry

OPTOMETRIC INSTRUMENTS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Principle of simple and compound microscope.
2. Define spectrometer and its uses.
3. Brightness acuity test.
4. Types of retinoscope.
5. Types of filters in ophthalmoscope.
6. Principle of autorefractometer.
7. Types of tonometry.
8. Uses of pentacam.
9. Importance of PAM.
10. Uses of argon laser.

Part B (5 × 5 = 25)

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

11. (a) Difference between simple and compound microscope.

Or

(b) Explain about radiuscope and spectrometer.

12. (a) Explain about the spatial frequency test charts standards

Or

(b) Write about the projection chart and the importance of illumination of room.

13. (a) Explain the different types of filter of ophthalmoscope and its uses.

Or

(b) Define refractometer. Explain the pros and cons and it uses.

14. (a) Explain the different types of illumination used in clinical slitlamp bio microscope.

Or

(b) Explain the principle, types and importance of pachymetry.

15. (a) Optical consideration and consideration of argon and yag laser. Pros and cons of them. Explain in detail.

Or

(b) Short notes on PAM and its application.

Part C $(3 \times 10 = 30)$

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

16. (a) Write in detail :

(i) BAT

(ii) Pupillometer

(iii) Abberometer and its application and uses

Or

(b) Write about the refractor and its optical consideration and properties detail.

17. (a) Write in detail about types of retinoscope and its special features with neat diagram of optics.

Or

(b) Write about the types of ophthalmoscope and its illumination.

18. (a) Elaborate the devices used for colour vision assesment.

Or

(b) Elaborate the principle, types and importance of tonometry in clinical practice.

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C–4846	Sub. Code
	91435

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Optometry

GANERAL AND OCULAR PHARMACOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What you meant by iontophoresis?

2. Define universal antidote.

3. Define lead molecule.

4. List the aliphatic alcohols.

5. Mention the inflammation.

6. What is synergism?

7. What are catecholamines?

8. Mention the antagonist.

9. Point out the mechanism of carbonic anhydrase inhibitor.

10. Briefly explain the treatment of glaucoma using tonicity solution.

Part B (5 × 5 = 25)

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

11. (a) What are different types of injection for general route of drug administration? Explain.

Or

(b) Explain the mechanisms and mode of drug exception.

12. (a) Give a note on drug-dose response relationship.

Or

(b) Mention the adverse drug reactions.

13. (a) Write short notes on sedatives.

Or

(b) Mention the pharmacological action and therapeutic uses of paracetamol.

14. (a) List and explain the types and distribution of adrenergic receptor.

Or

(b) List the adrenergic antagonist. Explain any in the treatment of eye disease.

15. (a) Write short notes on ophthalmic anesthetics.

Or

(b) Discuss on mechanism of action of penicillin.

Part C (3 × 10 = 30)

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

16. (a) Elaborate the phases of drug metabolism.

Or

(b) Outline the ocular route of drug administration.

17. (a) Explain the types and mechanisms of drug receptors.

Or

(b) Write in detail note an mechanism of action and therapeutic uses of NSAID.

18. (a) Summers the pharmacological action, types and therapeutic uses of analgesic.

Or

(b) Illustrate the therapeutic of viscoelastic agents.

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C–4847	Sub. Code
	91436

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Optometry

CLINICAL EXAMINATION OF VISUAL SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Symptoms of blurred vision in children.

2. What is Marcus Gunn Jaw linking?

3. Any two uses of Retro illumination in SLE?

4. What is NRA?

5. Seeing Red better in bichrome test – what is the inference?

6. What is Cyclodamia?

7. Give all formulas of Hoffstetter.

8. What is Broad H test?

9. What is circle of least confusion?

10. If patient's near refraction is plano and distance refraction is –2.00 DS, What is the tentative Add and What type of glasses he should wear?

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) Techniques of joining Retinoscopy.

Or

(b) Brief notes on extended keratometer.

13. (a) Refining Cylinder power in subjective Refraction.

Or

(b) Procedure of doing a Duochrome test.

14. (a) Write short notes on measurement of amplitude of accommodation.

Or

(b) Write a sample prescription and mark its components.

15. (a) How to examine RAPD?

Or

(b) Give short notes on PBCT with diagrams.

Part C (3 × 10 = 30)

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

16. (a) Write a detailed note on History taking in pediatric patients.

Or

(b) Write in detail about vision testing in patients with Low vision.

17. (a) What are the different methods of prescribing addition in presbyopic patients?

Or

(b) Explain in detail about binocular balancing techniques.

18. (a) Different tests used to measure Accommodation.

Or

(b) Write in elaborate about spectacle suggestions with respect to patient's near and intermediate visual demands.

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C–4848	Sub. Code
	91442

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fourth Semester

Optometry

OPTOMETRIC OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define chromatic aberration.
2. Define sag and write sag formula.
3. Calculate the Spherical equivalent for the following:
   (a) +3.00 DS/-1.00 DC X 180,
   (b) +5.00DS/ -4.00 DC X 90
4. Define SRC.
5. Define vertex power
6. What is bad metal defect?
7. Define glazing.
8. Define edging.
9. Write about sphero cylindrical lens design.
10. Define impact resistance.

Part B (5 × 5 = 25)

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

11. (a) Write in detail about lens materials.

Or

(b) Write about aberration in ophthalmic lenses.

12. (a) A spectacle of +9.00 DS lens power is placed 20 mm away from the eye instead of 12 mm vertex distance, so what is the actual prescription?

Or

(b) Write about modified near vision lenses.

13. (a) Write about the manufacturing of ophthalmic lenses.

Or

(b) Write in detail on bifocal lenses.

14. (a) Write about the properties of lens materials.

Or

(b) Write about the description of lens defects.

15. (a) Toric Transposition.

+3.00DS/-2.00DC × 170; Base curve -6.0

Or

(b) Write about rotary prisms.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail about lens enhancements.

Or

(b) Write in detail about the design, uses and the characteristics of rotary prisms.

17. (a) Write about the design and uses of progressive addition lenses.

Or

(b) Write about the magnification in high plus minification in high minus lenses and a explain the tilt induced power in spectacle lenses

18. (a) Write about the manufacturing and designs of bifocals.

Or

(b) Write in detail about prismatic effect, centration, decentration and prentice rule.

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C–4849

Sub. Code
91443

B.Sc. DEGREE EXAMINATION, APRIL 2025

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 telangiectasia?

2. Write any three clinical features of GCA.

3. List out the types of optic neuritis.

4. Define myelinated nerve fibers.

5. List out any three ocular features of myasthenia gravis.

6. List out any three disorders affecting optic chiasm.

7. What is lattice degenration?

8. List out the types of retinal detachment.

9. Define saccadic and smooth pursuit eye movements.

10. List out any three drugs leading to drug induced optic neuropathy.

Part B (5 × 5 = 25)

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

11. (a) Write about the clinical features and investigations of papillodema.

Or

(b) Write about the clinical features of fourth cranial nerve palsy.

12. (a) Write about the causes and clinical features of non-arteric anterior ischaemic optic neuropathy.

Or

(b) Write about alcohol-tobacco amblyopia.

13. (a) Write about the clinical features and management of craniopharingioma.

Or

(b) Write about the causes, clinical features and management of vitreous haemorrhage.

14. (a) Write about the clinical features and investigations of myasthenia gravis.

Or

(b) Explain in detail on the evaluation of optic nerve diseases.

15. (a) Write about the clinical features of optic disc coloboma, tilted disc and optic disc drusen.

Or

(b) Write about essential blepharospasm.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail on the applied anatomy, causes and clinical features of isolated third cranial nerve palsy.

Or

(b) Write in detail on Retinal detachment.

17. (a) Explain in detail on ophthalmoscopic and etiological classification of optic neuritis with causes, clinical features and management of each type.

Or

(b) Write in detail on abnormal pupillary reactions.

18. (a) Write in detail on visual field defects with neat diagram.

Or

(b) Write in detail on the definition, classification, causes and types of nystagmus.

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C–4850

Sub. Code
91444

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTS – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is the principle of gonioscopy.

2. Write any three advantages of log MAR over Snellen chart.

3. List out various lens measuring instruments.

4. Write about the principle of B scan.

5. Write about the principle of tonometers.

6. Write about shaffer's grading.

7. Define Focault's principle.

8. Write about the indications of pH testing.

9. What is the use of Berman's locator.

10. What is straddling technique in retinocopy.

Part B (5 × 5 = 25)

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

11. (a) Write about the various tools used to test colour vision.

Or

(b) Write about the principle and instrumentation of direct ophthalmoscopy.

12. (a) Write about the principle and instrumentation of ERG.

Or

(b) Write about the various types of pachymeters.

13. (a) Write about the different types of tonometers with principle.

Or

(b) Write about photorefraction.

14. (a) Write about the various illumination techniques of slit lamp.

Or

(b) Write about the instrumentation and procedure of VEP.

15. (a) Write about the use of fluorescein staining in ophthalmology.

Or

(b) Write about the design of snellen chart and also explain the procedure of testing visual acuity with Snellen chart.

Part C (3 × 10 = 30)

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

16. (a) Write about the principle, procedure and types of retinoscopy.

Or

(b) Write about the Principle and types of perimeter in detail.

17. (a) Write in detail about the principle, instrumentation and procedure of ophthalmic ultrasonography - A scan.

Or

(b) Write about the principle and instrumentation of keratometer.

18. (a) Write in detail about Schirmer's test and lacrimal function test.

Or

(b) Write about the principle and procedure of F.F.A.

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C–4851	Sub. Code 91451

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Optometry

CONTACT LENS – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define base curve.
2. What are rigid lenses made up of?
3. Classify CLs based on water content?
4. Mention any two properties of silicone hydrogel.
5. List any two advantages of molding.
6. Any two indications of contact lines in corneal irregularities.
7. Why is contact lens contraindicated in patients with arthritis?
8. Any two sign of a loose fit lens.
9. Horizontal decentering of RGP lens occurs in _____ and _____.
10. Central touch in RGP lenses indicate _____ fit and so BC should be _____ (increased/ decreased).

Part B (5 × 5 = 25)

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

11. (a) Give short notes on history of contact lenses.

Or

(b) Describe the impact of vertex distance on contact lens prescriptions. Give example.

12. (a) Brief on classification of contact lenses.

Or

(b) Layers of cornea.

13. (a) Discuss about RGP CL materials.

Or

(b) Give notes on water content of contact lenses.

14. (a) What are the modifications possible with rigid lenses?

Or

(b) Verification of contact lenses in office.

15. (a) What are the constituents in CL cleaning solution.

Or

(b) Do's and Don'ts with CL.

Part C (3 × 10 = 30)

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

16. (a) Write in detail about CL pre fitting Examination.

Or

(b) Assessment of RGP lens fit.

17. (a) Properties of ideal CL material.

Or

(b) What are the procedures to be done in a follow up visit in CL patients?

18. (a) Benefits of contact lens over spectacles.

Or

(b) Discuss the different manufacturing method employed for contact lenses.

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C–4852

Sub. Code
91452

B.Sc. DEGREE EXAMINATION, APRIL 2025

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 stereo acuity?
2. Explain about confusion.
3. What is near point of convergence?
4. What is listing's law?
5. Explain about sensory fusion.
6. What is translatory movement of the eye?
7. Write in brief about strabismic Amblyopia.
8. Explain about the types of ARC.
9. Explain about angle kappa.
10. What is spasm of accommodation?

Part B (5 × 5 = 25)

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

11. (a) Write about the Grades of Binocular Single vision.

Or

(b) Explain about physiological diplopia.

12. (a) Discuss about the laws of ocular Motility?

Or

(b) Explain about uniocular and Binocular Movements of the eye.

13. (a) Outline about Tilmus fly test.

Or

(b) Explain about After-image test.

14. (a) List and explain the types of Amblyopia.

Or

(b) Differentiate Amblyopia and Suppression.

15. (a) Explain about Maddox Rod test.

Or

(b) Explain about Bagolini striated glass test.

Part C (3 × 10 = 30)

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

16. (a) Explain about monocular cues in detail.

Or

(b) Explain occlusion therapy in detail.

17. (a) Explain synaptophore – principle, procedure and uses.

Or

(b) Explain about suppression, its types and test.

18. (a) Elaborate the accommodation its types.

Or

(b) Explain about convergence and its types.

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C–4853

Sub. Code
91453

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Optometry

PEDIATRIC AND GERIATRIC OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Explain lea symbols.
2. What is aesthonopic symptoms?
3. Explain about myopic shift.
4. Explain about the types of extra ocular muscle.
5. Explain about vertex distance.
6. Explain about ETDRS chart.
7. What is Aphakia?
8. Explain about LRCS.
9. Explain about myopic control in children.
10. Explain about the angle of convergence.

Part B (5 × 5 = 25)

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

11. (a) Explain about the mechanism of accommodation.

Or

(b) Discuss about dynamic retinoscopy.

12. (a) Elaborate the changes of accommodation over age.

Or

(b) Explain about Cardiff acuity test.

13. (a) Explain about the difference between glasses and contact lens for refractive error.

Or

(b) Interpret about accommodative esotropia.

14. (a) Write about the visual milestones of BV.

Or

(b) Explain about visual field defects.

15. (a) Explain about aging of eyes.

Or

(b) Outline about ERG.

Part C (3 × 10 = 30)

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

16. (a) Explain about assessment of pupillary responses in geriatrics.

Or

(b) Describe about congenital contract and its management.

17. (a) Explain about the goals of comprehensive paediatrics Eye Examination.

Or

(b) Discuss in detail about history taking in paediatrics.

18. (a) Explain about visual rehabilitation in paediatrics.

Or

(b) Outline about visual rehabilitation in geriatrics.

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C–4854	Sub. Code 91454

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Optometry

DISPENSING OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Section A (10 × 2 = 20)

Answer **all** the questions.

1. What are skull temples?

2. Any two advantages of Polycarbonate.

3. Two reasons for not recommending metal frames to children.

4. Uses of Polarising filters.

5. What is surfacing?

6. Uses of green tint.

7. Any two faults found In the surface of lens.

8. Draw a trifocal.

9. What is meant by 'Jack in the box' phenomena?

10. Define Abbe's value.

Section B (5 × 5 = 25)

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

11. (a) What are the different types of temples?

Or

(b) Transpose to positive cylinder and cross cylinder form.

(i) –3.00DS/–2.00DC X 90

(ii) +7.00DS/–1.50DCX180

12. (a) Write notes on bifocal lenses and their types.

Or

(b) Brief about Photochromic lenses and their uses.

13. (a) Give notes on selecting a spectacle frame according to a patient's age and occupation.

Or

(b) Give a brief account on importance of IPD measurement.

14. (a) Advantages of using lensometer over hand neutralization of lenses.

Or

(b) Write notes on ANSI standards.

15. (a) Draw and label the parts of a spectacle frame.

Or

(b) What are the coatings that are available in the market now?

Section C (3 × 10 = 30)

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

16. (a) Write in detail about lens and frame markings.

Or

(b) Write in detail about mounting of ophthalmic lenses.

17. (a) Write in detail about special lenses like Aspherics, lenticulars, aneiseikonics and Fresnel lenses.

Or

(b) Describe in detail about progressive lenses fitting and common problems in trouble shooting of PAL fitting.

18. (a) Bifocal lenses types, segment shapes and Optical characteristics.

Or

(b) Describe the steps of manual method of measuring monocular and Binocular Inter Pupillary Distance (IPD).

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C–4855

Sub. Code
91455

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Optometry

PUBLIC HEALTH AND COMMUNITY OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. What is Infant Mortality Rate?

2. What is the difference between disability and handicap?

3. Any two examples for preventable blindness.

4. What is rehabilitation?

5. Describe VA Criteria for severe vision impairment.

6. Two major causes of blindness in Indian children.

7. What is the VA criteria for referral in adult vision screening?

8. What are false negatives in screening tests?

9. What is negative predictive value?

10. Define Low vision.

Part B (5 × 5 = 25)

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

11. (a) Describe three levels of health care with examples.

Or

(b) Indicators of Health.

12. (a) Short notes on types of Visual Impairment.

Or

(b) Give notes on :

(i) Treatable Blindness

(ii) Preventable Blindness

(iii) Avoidable Blindness

13. (a) Differences between a clinical health program and a community program.

Or

(b) Give notes on prevalence of blindness in India.

14. (a) Role of NGO's in prevention of blindness in India.

Or

(b) Initiatives taken by government to treat cataract.

15. (a) What are the steps in cost effective Analysis?

Or

(b) Write about the importance of Information in public health.

Part C

$(3 \times 10 = 30)$

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

16. (a) Explain in detail about levels of health care patterns.

Or

(b) Give a detailed picture on vision 2020: Right to sight.

17. (a) Write elaborately on community eye care programs.

Or

(b) Role of NPCB in eradicating Blindness.

18. (a) Importance of school vision screening and its outcomes. Write notes.

Or

(b) Allocation of budget for prevention and control of blindness for FY 2024-25. What is your opinion and perspective?

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C–4856

Sub. Code
91456

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Fifth Semester

Optometry

BIO-STATISTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any two uses of Biostatistics.

2. Write Crude mortality rate formula.

3. Mention the types of sampling methods.

4. Define Type II error.

5. What are the measures of dispersion?

6. Define Correlation.

7. Write two applications of Binomial distribution.

8. Write the formula of Poisson distribution.

9. What are the types of Hospital statistics?

10. Define bed occupancy rate.

Part B (5 × 5 = 25)

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

11. (a) Explain Biostatistics with an example.

Or

(b) Explain perinatal mortality rate.

12. (a) Explain the different types of sampling techniques.

Or

(b) Write the procedure for hypothesis testing.

13. (a) How to classify the data, explain with examples?

Or

(b) Find the Rank Correlation Coefficient from the following data :

Rank in x :	1	2	3	4	5	6	7
Rank in y :	4	3	1	2	6	5	7

14. (a) Write the properties of normal distribution.

Or

(b) Explain about χ^2 test with an example.

15. (a) How to collect hospital statistics data? Explain in details.

Or

(b) Explain about bed occupancy rate.

Part C (3 × 10 = 30)

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

16. (a) Calculate the mean and standard deviation for the following data :

Marks :	0-10	10-20	20-30	30-40	40-50	50-60
No.of students :	5	8	10	15	12	7

Or

(b) Calculate Karl Pearson coefficient of correlation for the following data :

Heights (cm) :	150	155	160	165	170	175	180
Weights (kg) :	50	60	65	70	75	80	85

17. (a) Distinguish between Correlation and Regression in Statistics.

Or

(b) From the following data, find the two regression lines.

x :	25	28	35	32	31	36	29	38	34	32
y :	43	46	49	41	36	32	31	30	33	39

18. (a) Can we conclude with the data given below that growth status and Exposure to infection are associated?

Growth status	Infected	Non-Infected
Good	20	75
Poor	80	25

Or

(b) Explain hospital statistics in detail.

C–4857	Sub. Code
	91461

B.Sc. DEGREE EXAMINATION, APRIL 2025.

Sixth Semester

Optometry

CONTACT LENSES – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write about CLAPC.
2. For a spectacle power of +7.50 D and vertex distance of 12 mm calculate the CL power
3. What is TD? How do you measure TD for soft CL.
4. What is SEAL.
5. Define BVP.
6. How do you select CL power in aphakia.
7. How do you use keratometry readings to choose BOZR of soft CL.
8. Write about any two sports where soft CL is preferred over RGP.
9. Write about the various options of bifocal CL.
10. Write about the FDA classification of contact lens.

Part B (5 × 5 = 25)

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

11. (a) Write about the types of CL used in keratoconus.

Or

(b) Write about the insertion and removal techniques of contact lenses.

12. (a) Write about any five complications of contact lenses.

Or

(b) Write about prosthetic eye fitting procedures.

13. (a) Write about the advantages and disadvantages of soft contact lens.

Or

(b) Write about recent advances in contact lenses.

14. (a) Write about bifocal CL.

Or

(b) Write about the common contact lens handling instructions.

15. (a) Write about the advantages and availability of disposable contact lenses.

Or

(b) Write about the indications of therapeutic contact lenses.

Part C (3 × 10 = 30)

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

16. (a) Write in detail about the care and maintenance of soft contact lenses.

Or

(b) Write about fitting assessment and stabilization techniques of soft toric contact lens.

17. (a) Write in detail about the indications and fitting considerations of therapeutic contact lenses.

Or

(b) Write about contact lens fitting in pediatrics.

18. (a) Write about the use of contact lens post refractive surgery and aphakia.

Or

(b) Compare RGP CL with soft CL.

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C–4858

Sub. Code
91462

B.Sc. DEGREE EXAMINATION,
APRIL 2025.

Sixth Semester

Optometry

BINOCULAR VISION – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write about abnormal head posture Instruction.

2. Write about the use of risley prism.

3. What is brown's syndrome?

4. Write about AV pattern strabismus.

5. List out any five tests which uses red green goggles and also mention what is the principle behind its use.

6. List out the etiology of paralytic strabismus.

7. Write about any three major characteristics of 3rd cranial nerve palsy.

8. What is the principle of synoptophore and diplopia charting?

9. Write about any three tests to assess the degree of squint in children.

10. What is CSM?

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

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

11. (a) Write about the principle and procedure of Hess chart.

Or

(b) Write about the classification of strabismus.

12. (a) Write about prism bar cover test.

Or

(b) Write about the uses of prism for exercise and correction.

13. (a) Write about the management of convergence insufficiency.

Or

(b) Explain about Maddox wing.

14. (a) Write about the investigations for paralytic strabismus.

Or

(b) Write a note on any three vision therapies done for amblyopia.

15. (a) Write the clinical characteristics of refractive accommodative esotropia.

Or

(b) Write about the procedure and interpretation of maddox rod.

Part C ($3 \times 10 = 30$)

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

16. (a) Parents of a 4 year old patient present to your clinic saying that their child has crossed eyes sometime when reading. Write the questions to be asked in history taking and also out the tests to be done for this patient and explain about procedure of each test.

Or

(b) Explain the aim, procedure and interpretation of diplopia charting and draw the diplopia chart of a patient with medial rectus palsy.

17. (a) Write about the principle, instrumentation and uses of synoptophore.

Or

(b) Write in detail about the types, investigations and management of Non accommodative esotropia.

18. (a) Write in detail about cover test, krimsky test and Hirschberg test.

Or

(b) Write in detail about the classification, investigation and management of divergent strabismus.

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C–4859

Sub. Code
91463

B.Sc. DEGREE EXAMINATION, APRIL 2025

Sixth Semester

Optometry

LOW VISION AID

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define preferred retinal locus.
2. List out any three disadvantages of hand magnifier.
3. Tabulate the grades of low vision.
4. Differentiate between eccentric fixation and eccentric viewing.
5. What is LMBB syndrome?
6. Write the WHO definition of low vision.
7. Define telemicroscope.
8. Write any three clinical features of albinism.
9. Define lebenson's formula.
10. List out any five disease conditions in relation to low vision.

Part B (5 × 5 = 25)

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

11. (a) Write about the prescribing aspects of low vision aids.

Or

(b) Write about the psychological aspects on low vision.

12. (a) Write about counseling of low vision patient.

Or

(b) Write about educational guidance and braille system in low vision rehabilitation.

13. (a) Write about the optics, advantages and disadvantages of spectacle magnifier.

Or

(b) Write in detail about the assessment of visual acuity in low vision.

14. (a) Explain the optics of galilian and keplarian telescopes with neat diagram.

Or

(b) Write about the eccentric viewing training in low vision.

15. (a) Write about electronic devices used as low vision aids, including the recent inventions and advancement.

Or

(b) Give an example of the objective and eyepiece power calculation of galilian telescope in high myope with refractive error of -10.00 DS.

Part C (3 × 10 = 30)

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

16. (a) Write in detail on pediatric low vision care.

Or

(b) Write in detail on optical devices used in low vision care.

17. (a) Explain in detail on the pre-clinical evaluation of low vision patients.

Or

(b) A 50-year-old patient is diagnosed with diabetic retinopathy what are *t* possible symptoms and clinical features of the patient, and what will be the possil aids/rehabilitation services available for this patient.

18. (a) Write in detail on the model of low vision service.

Or

(b) Write in detail on the clinical evaluation of low vision patients.

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C–4860	Sub. Code
	91464

B.Sc. DEGREE EXAMINATION, APRIL 2025

Sixth Semester

Optometry

OCCUPATIONAL OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define occupational hygiene.

2. Expand ILO, WHO.

3. Define occupational hazards.

4. List out any three occupation related eye diseases.

5. Define occupational health.

6. Lis tout any three chemical agents causing occupation related diseases.

7. Define color.

8. Define light with its units used.

9. Define task analysis.

10. List out any three sources of light.

Part B (5 × 5 = 25)

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

11. (a) Write about the various acts and rules involved in occupational health.

Or

(b) Write about occupational hazards.

12. (a) Write in about colour coding and colour theory.

Or

(b) Write about the clinical features of computer vision syndrome.

13. (a) Write about various sources of light.

Or

(b) Write about the indications and contraindications of contact lens in various occupations.

14. (a) Write about the preventive methods of occupational hazards.

Or

(b) Write about the role of national bodies in occupational health.

15. (a) Write about the effects of visual display units on eye.

Or

(b) Write about the spectrum of electromagnetic radiations.

Part C (3 × 10 = 30)

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

16. (a) Write in detail on physical, chemical and biological agents causing occupation related diseases.

Or

(b) Write in detail on visual task analysis.

17. (a) Explain in detail on the effect of electromagnetic radiations on eye.

Or

(b) Write in detail on vision standards in railways, roadways and airlines.

18. (a) Write in detail on industrial vision screening.

Or

(b) Write about colour vision tests.

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C–4861	Sub. Code
	91465

B.Sc. DEGREE EXAMINATION, APRIL 2025

Sixth Semester

Optometry

SYSTEMIC DISEASES AFFECTING THE EYE

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Roth's spot.
2. What are the four species of malaria parasites?
3. What is the normal level of systolic and diastolic blood pressure, also write the normal range of RBS?
4. Define Bonnet sign.
5. List out the retinal tumours.
6. What are the types of tuberculosis?
7. List out any three ocular manifestations of diabetes.
8. What is Argyll Robertson pupil?
9. What is Mantoux test?
10. List the three ophthalmoscopic classification of optic neuritis.

Part B (5 × 5 = 25)

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

11. (a) Write about the ocular manifestation of sub-acute bacterial endocarditis.

Or

(b) Write about Vitamin A deficiency.

12. (a) Write about the ocular manifestations of tuberculosis.

Or

(b) Explain about papilledema.

13. (a) Write about the ocular manifestations of leprosy.

Or

(b) Write about the clinical features and diagnosis of thyroid disease.

14. (a) Explain the characteristics of benign and malignant neoplasms.

Or

(b) Explain the classification and clinical features of optic neuritis.

15. (a) Write about the pathology and clinical features of malaria.

Or

(b) Write about the tumours of eyelid.

Part C (3 × 10 = 30)

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

16. (a) Diabetes Mellitus – Definition, Classification, Pathophysiology, Clinical characteristics Diagnosis and Management.

Or

(b) Write about the systemic and ocular manifestations of syphilis.

17. (a) Explain in detail about visual pathway lesions with neat diagram.

Or

(b) Write about the grading and staging of cancer, diagnosis and principles of treatment.

18. (a) Write about the ocular manifestations of hypertension.

Or

(b) Write about the etiology, pathology, clinical features, diagnosis and treatment of Tuberculosis.

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