C–8156	Sub. Code
	91412

B.Sc. DEGREE EXAMINATION, APRIL 2023

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 the functions of isophagus.
2. Name the layers of Arteries wall.
3. Name three digestive enzymes.
4. What is cardiac output?
5. What is surfactant?
6. Enlist the parts of Neuron.
7. Enumerate the functions of nephrons.
8. Write the parts of uterus.
9. Functions of endoplasmic reticulum.
10. Write the role of Diaphragm.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Neatly label the diagram of respiratory system.

Or

(b) Explain coronary circulation.

12. (a) Write briefly on transport of gases.

Or

(b) Write on functions of cerebellum.

13. (a) Structure of skeletal muscle. Explain.

Or

(b) Explain Hypotension.

14. (a) Name the cranial nerves.

Or

(b) Label the parts of pancreas and list its functions.

15. (a) Pain pathway – Explain.

Or

(b) What are the types and classification of joints?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the anatomy of spleen. Add a note on its functions.

Or

(b) Explain lacrimal apparatus.

17. (a) Describe liver in detail with its functions.

Or

(b) Name the structures included in upper and lower respiratory tract. Add a note on its blood supply.

18. (a) Explain in detail about lactation.

Or

(b) Write in detail on synovial joints.

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C–8157	Sub. Code 91413

B.Sc. DEGREE EXAMINATION, APRIL 2023.

First Semester

Optometry

GENERAL AND OCULAR BIOCHEMISTRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define the asymmetric carbon with an example.

2. Name the ketone bodies.

3. Mention the conjugated proteins.

4. What is nyctophobia?

5. List the types of contact lense.

6. Define the refractive power.

7. List the causes of secondary cataract.

8. Outline the functions of ciliary body:

9. List the chemical composition of Benedict's reagent.

10. Name the blood groups and list the uses.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Mention the structure and chemistry of disaccharides.

Or

(b) Write about types, biological uses and reactions of glycolysis.

12. (a) Explain the mode of action of enzyme.

Or

(b) Give a note on sources, biological uses and deficiency disorder of vitamin B12 and vitamin-C.

13. (a) Give brief notes on layers of tear film.

Or

(b) Illustrate the Biochemical layers of cornea.

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

Or

(b) Elaborate the cataractogenic agents.

15. (a) Describe the measurement of clotting time and its application.

Or

(b) How do you measure the blood urea? Explain its significance.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

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

Or

(b) Give detailed notes on classification of lipids.

17. (a) Illustrate the classification of amino acids.

Or

(b) How are cornial dehydration and transparency regulated?

18. (a) Write in detail about formation and circulation of aqueous humour.

Or

(b) Elaborate the chemistry and functions of lens protein fractions and electrolytes.

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C–8158	Sub. Code
	91414

B.Sc. DEGREE EXAMINATION, APRIL 2023.

First Semester

Optometry

GEOMETRICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Define frequency of light.

2. Define wavelength.

3. What is refractive index?

4. What is critical angle?

5. Define focal point for convex surface.

6. What is magnification?

7. What are all cardinal points?

8. What is comatic aberration?

9. Define dioptic power of prism.

10. Write any two applications of fiber.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short note about Fermat's principle for reflection.

Or

(b) Briefly explain dual nature and speed of light.

12. (a) Write in detail the condition for getting total internal reflection.

Or

(b) Write the concepts of divergence equation.

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

Or

(b) Write a short note on axial magnification of lens surface.

14. (a) Explain different types of lens shapes.

Or

(b) Explain in brief chromatic aberration and distortion.

15. (a) Write short note dispersive power of prisms.

Or

(b) Explain core and cladding of optical fiber.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain fermats principle for the law refraction of light.

Or

(b) Derive the relation between U, V and R for the convex surface.

17. (a) Describe in detail classifications of optical fiber.

Or

(b) Explain in detail cardinal points and vertex power.

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

Or

(b) Describe in detail particle and wave nature, space wavelength and frequency of light.

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C–8159	Sub. Code 91415

B.Sc. DEGREE EXAMINATION, APRIL 2023.

First Semester

Optometry

NUTRITION

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define energy.

2. Enlist the symptoms of Kwashiorkor.

3. Enumerate the sources proteins.

4. Define zero birth weight.

5. What is BMR?

6. List down nutrients with Antioxidant properties.

7. Name two disaccharides.

8. Define hyper lipidemia.

9. What are body building foods?

10. Name the essential fatty acids.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write briefly on calcium deficiencies and excess.

Or

(b) How do you assess the nutritional status?

12. (a) Write on protein metabolism.

Or

(b) Classify Lipids.

13. (a) What are the effects of fat on health?

Or

(b) What are the factors affecting protein requirment?

14. (a) Write how measures affect eye?

Or

(b) Satiety value – Explain.

15. (a) Explain digestion and absorption of fat.

Or

(b) Mention the total energy requirement for children and adults.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) In detail explain PEM.

Or

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

17. (a) How obesity affects health?

Or

(b) Explain the functions and sources of vitamins.

18. (a) Nutrition as science. Explain.

Or

(b) Write about Bomb calorimeter with label.

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C–8160	Sub. Code
	91416

B.Sc. DEGREE EXAMINATION, APRIL 2023.

First Semester

Optometry

COMPUTERS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Expand the term PC.

2. What is structure of email address?

3. What is Desktop?

4. What is super computer?

5. Give two types of Main Memory.

6. What is the use of OMR?

7. What are search engines?

8. Define Bit and Byte.

9. Convert the decimal number 28.125 into Binary.

10. What is the use of Mail Merge feature?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on windows components.

Or

(b) Briefly explain Number System.

12. (a) Explain the Octal Number System.

Or

(b) How can we compose a mail?

13. (a) Perform the following :

(i) 1111 + 1111

(ii) Convert 777_8 to Decimal and Hexadecimal Number System.

Or

(b) Explain the following in MS word

(i) Saving the Documents

(ii) Cut and paste operation.

14. (a) Write the features of MS Excel.

Or

(b) Write the computer Architecture with neat diagram.

15. (a) List out the types of viruses and their nature of infection.

Or

(b) Name the output Device and explain.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) With a sketch, Explain the personal computer and its function.

Or

(b) Write details about power point presentation with an example.

17. (a) Explain the procedure convert a binary number to Octal number through an example.

Or

(b) Explain the activities that you can do on the internet.

18. (a) Explain the options in anyone Antivirus product.

Or

(b) Explain the use of variety of secondary memories.

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C–8161	Sub. Code 91422

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

Optometry

OCULAR ANATOMY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name the parts of ciliary body.
2. Which cranial nerves supply the Eye ball and its adnexa?
3. Wall of the orbit. Explain.
4. Enlist the layers of Eyelids.
5. Write on Embryology of lens.
6. Name the parts of optic nerve.
7. What is pre-corneal tear film?
8. Anterior chamber. Explain.
9. Name the parts of Lacrimal apparatus.
10. Contents of orbit. Enlist.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Neatly label the parts of cornea.

Or

(b) Write in short about structure of lens.

12. (a) Write about orbital walls.

Or

(b) Write about the surgical spaces of orbits.

13. (a) List the clinical features seen in 3rd Nerve palsy.

Or

(b) Write on nerve supply and blood supply of conjunctiva.

14. (a) Explain in short about drainage of aqueous humor.

Or

(b) Anatomy of sphincter and Dilator muscle.

15. (a) Blood and Nerve supply to the sclera and Retina.

Or

(b) Briefly write on visual cortex.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write on Extra ocular muscles - its origin, insertion and blood supply and nerve supply.

Or

(b) Draw a diagram of visual pathway. Explain about the course of visual fibers.

17. (a) Explain in detail on sclera - Anterior, posterior and middle apertures.

Or

(b) Describe blood supply and nerve supply of uveal tract.

18. (a) In detail write milestones in the development of the Eye.

Or

(b) Explain on Masses of vitreous in detail.

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C–8162	Sub. Code 91423

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Enlist the functions of tear film.
2. What are the types of vergences?
3. What is Rhodopsin? And its role in visual cycle.
4. Write on presbyopia.
5. Enlist the test to assess lacrimal Excretory function.
6. Enumerate the functions of lens.
7. List out the layers of retina.
8. Write on Lid closure reflex.
9. What are the compositions of vitreous humor?
10. What is dark adaptation?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the conventional pathway and uveo scleral aqueous drainage pathway.

Or

(b) Explain the blood retinal barriers.

12. (a) Write on different types of pupillary reflexes.

Or

(b) Write shortly on light and dark adaptation.

13. (a) Briefly write about visual cycle.

Or

(b) Describe Binocular vision.

14. (a) Explain pappiledema.

Or

(b) Write shortly on break up of tear film.

15. (a) Explain Maurice theory.

Or

(b) Write on Accommodation Reflex.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe angle of anterior chamber and maintenance of Intraocular pressure.

Or

(b) Explain detail about the secretion, circulation and drainage of aqueous humor.

17. (a) Write Elaborately on protective mechanism of eye.

Or

(b) Write on Supranuclear control of Eye movements.

18. (a) Write in detail about visual pathway.

Or

(b) Write in detail on changes in accommodation with age.

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C–8163	Sub. Code
	91424

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

Optometry

PHYSICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is wave velocity?

2. Define particle nature of light.

3. What is the condition for constructive interference?

4. Write the use of anti reflection coating.

5. Define diffraction.

6. What is grafting?

7. What is spectral resolution?

8. Define plane of polarization.

9. Write any two applications of Holography.

10. What is emission spectra?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss in detail Hygen's principle for the law of refraction.

Or

(b) Discuss in brief differential equation for simple harmonic wave.

12. (a) Write a short note on path and phase difference.

Or

(b) Explain in brief Young's double slit experiment.

13. (a) Discuss about Rayleigh's criterion.

Or

(b) Discuss the important points about diffraction due to circular aperture.

14. (a) Write a short note hall wave plate.

Or

(b) Explain how plane polarized light is produced.

15. (a) Discuss about mercury arc spectrums.

Or

(b) Write a brief note on Resolution of microscopes.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Derive a mathematical representation of simple harmonic motion.

Or

(b) Determine the velocity of light by any one method and explain its working procedure.

17. (a) Explain in detail theory of Newton's ring experiment.

Or

(b) Describe in detail the working of Freshnel's biprism.

18. (a) Discuss in detail the basic principle of lasers with neat diagram.

Or

(b) Explain construction and reconstruction of Hologram and mention some applications.

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C–8164	Sub. Code 91425

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Optometry

MICROBIOLOGY AND PATHOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Mention the applications of KOH mount.
2. Differentiate the antiseptic and disinfectant.
3. List the pathophysiology of pneumonia.
4. What is river blindness?
5. List the examples of DNA viruses.
6. Name any two antifungal agents.
7. What is the phacytic activity?
8. Outline the tissue ciment substance.
9. Define cancer.
10. State the characteristics of chalazion.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Mention the ocular normal flora.

Or

(b) Sketch the steps involved in acid-staining with its result.

12. (a) Explain the pathology, ocular lesions, diagnosis and treatment of meningococci.

Or

(b) Give a note on pathology and ocular lesions of *Corynebacterium diphtheriae* and C. *xerosis*.

13. (a) Give brief notes on filariasis.

Or

(b) Illustrate the pathophysiology of retro virus.

14. (a) Write briefly on acute and chronic inflammatoric reaction.

Or

(b) Elaborate the role of vascular components in healing and repair mechanism of injury.

15. (a) Describe the bacterial conjunctivitis.

Or

(b) Discuss briefly on lens induced glaucoma and uveitis.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Write in detail about the sterilization methods.

Or

(b) Give detailed notes on morphology, pathology and ocular lesions of mycobacteria.

17. (a) Illustrate the classification and characteristics of hyper sensitivity reaction.

Or

(b) Explain the pathology, ocular lesions and treatment of mucor and candida.

18. (a) Write in detail about corneal pathology.

Or

(b) Elaborate the clinical characteristics of retinoblastoma.

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C–8165	Sub. Code
	91434

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Third Semester

Optometry

OPTOMETRIC INSTRUMENTS I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are Optotypes?
2. Write about illumination in the consulting room.
3. How is spatial frequency measured?
4. What is Dynamic Retinoscopy?
5. Name two instruments used to measure squint.
6. Give uses of Abberometer.
7. Principle of Pachymetry
8. Write about Schiotz Tonometer
9. Write notes on Farnsworth 100 hue test.
10. Short notes on yag laser.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about pupillometer.

Or

(b) Write about Pediatric vision chart.

12. (a) Differentiate Shellen and log mar chart.

Or

(b) Explain Amsler grid.

13. (a) Difference between Direct and Indirect Ophthelmo scope.

Or

(b) Write about Obscrn.

14. (a) Write about Potential Amity meter.

Or

(b) Write about Applanation Tonometry.

15. (a) Write short notes on Auto Reflacto meter.

Or

(b) Write about Compound Microscope.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write essay about Slit Lamp.

Or

(b) Write essay about Tonometer.

17. (a) Write in details about Trail sets.

Or

(b) Write about Optometer Devices.

18. (a) Explain ophthalmic application of Laser.

Or

(b) Explain Corneal Topography.

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C–8166	Sub. Code
	91435

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Third Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer all the questions.

1. Mention the role of Vit – C in absorption of iron.

2. Describe the blood – brain barrier.

3. What you meant by Therapeutic index?

4. Write short notes on Universal Antidote.

5. Differentiate narcotic and non – narcotic analgesic.

6. Name any two CNS Stimulants.

7. Mention the types and sites of muscarnic receptor.

8. Relate the advenergic drug and glaucoma.

9. Mention the preservatives of eye drops.

10. List out the ocular penetration enhancer.

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

Answer all the questions.

11. (a) Describe the factors effecting drug distribution.

Or

(b) Elaborate the conjugation reactions of drug metabolism.

12. (a) Elaborate on drug – dose relationship study.

Or

(b) Write on the mechanism of G – protein coupled and enzymatic receptor.

13. (a) How do you treat convulsive disorder?

Or

(b) Elaborate on the analgesic.

14. (a) Explain the direct acting advenergic agonist.

Or

(b) What are cholinergic blocking agents? Explain their therapeutic uses.

15. (a) Mention the forms of drug available to apply for ocular diseases.

Or

(b) Illustrate the composition and therapeutic uses of viscoelastic agents.

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

Answer all questions.

16. (a) Elaborate the novel drug delivery system for eye.

Or

(b) Illustrate the structure activity relationship study and their application.

17. (a) Describe the actions and therapeutic uses of general anesthetics.

Or

(b) How are drug excreted from our body? Explain.

18. (a) Elaborate the corticosteroids used in the treatment of ocular diseases.

Or

(b) Explain the drugs used to central nerves system stimulation with examples.

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C–8167	Sub. Code 91442

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Optometry

OPTOMETRIC OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the defects of glasses?

2. Sag formula

3. Define light

4. What is rotation test?

5. ARC

6. What is periscopic lens?

7. Types of glazing.

8. Back vertex distance.

9. What is Ghost Image?

10. Calculation of Refractive Index.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Definition of Prism, unit of prism power, rotation and uses of prism.

Or

(b) Short notes on photo chrome lenses.

12. (a) History of ophthelmic lenses

Or

(b) Law of reflection and law of refraction.

13. (a) Properties of lens materials.

Or

(b) Define with diagrams

(i) Segment height

(ii) Segment depth

(iii) Segment drops

14. (a) List the properties of cross cylinder.

Or

(b) Explain prismatic effect and parentice's rule.

15. (a) Definition and characteristics of glasses and plastic lenses.

Or

(b) Notes on triology and poly carbonate.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Terminology used in lens workshops and manufacturing.

Or

(b) Toric transposition

$(+1.0|+2.0\times16\,s)$ *Base curve* $\overline{6}\,0$

17. (a) Types of frames and its constructions.

Or

(b) Aberrations in Ophthelmic lens in details.

18. (a) Details the optical requirements of bifocals.

Or

(b) Details the different types of Absorption of glasses.

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C–8168	Sub. Code
	91443

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Optometry

OCULAR DISEASE II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Two signs of Marfan's syndrome.

2. Define Cherry Red spot.

3. Asteroid hyalosis.

4. First aid for Acute Retinal Artery Occlusion.

5. Define RAPD

6. Two causes of infections in Optic Neuritis.

7. Tests for Malingering

8. Lattice degeneration

9. Presbyopia

10. Albinisam

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Short notes on BRVO

Or

(b) Congenital night blindness.

12. (a) Explain Aniscoria

Or

(b) Retro bulbar Optic Neuritis

13. (a) Alcohol tobacco Amblyopia

Or

(b) Classification of Optic Neuritis

14. (a) Stages of Retinopathy of Pre-Maturity.

Or

(b) Tabulate the difference between Papilledema and Papillitis.

15. (a) Explain Exudates RD

Or

(b) Explain and management about PVD

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write about conditions affecting the Optic Nerve.

Or

(b) Write in details about macular degeneration.

17. (a) IIIrd Nerve palsy

Or

(b) IV th Nerve palsy

18. (a) Diabetic retinopathy causes and management

Or

(b) Hyper tensive retinopathy causes and management.

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C–8169	Sub. Code
	91444

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTS II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Short notes on ERG.

2. Types of Tonometer.

3. Give three uses of keratometry.

4. Define fixation loss and False Negative.

5. State the principle of A Scan.

6. Define Pachymetry.

7. Uses of Pupillometer

8. Principle of Snellen's Acuity chart.

9. Astigmatic fan test.

10. Define detailed about Direct Ophthalmoscopy

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Visual Evoked Potential.

Or

(b) Notes on Exophthalmometer.

12. (a) Brightness Acuity test.

Or

(b) Write about B'Scan.

13. (a) Write details about indirect Ophthalmoscope.

Or

(b) Explain adaptation and Adoptometry.

14. (a) Explain photo coagalation.

Or

(b) Notes on Gonio scopy.

15. (a) Explain PH test and Schimer's test.

Or

(b) Automated Perimetry.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write details on Fundus Fluorescin Angiography.

Or

(b) Write about specular Microscopy.

17. (a) Describe optic and instrumentation of Direct and Indirect ophthalmoscope.

Or

(b) Explain Tonometer and Tonometry.

18. (a) Write notes on Auto Refractometer.

Or

(b) Write about Trial set.

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C–8170	Sub. Code
	91451

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Optometry

CONTACT LENS – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. HVID – abbreviation and normal values.

2. Protein deposits.

3. CLARE.

4. Silicone Hydrogels – Advantages.

5. Uses of AS OCT in contact Lens fitting.

6. What are mini sclerals?

7. Dk/T.

8. Group three fDA classification of CL materials.

9. Diameter of soft CL.

10. DMMA and CAB.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Give a brief account of recent advancements in contact lenses.

Or

(b) Anatomy of cornea with diagram.

12. (a) Explain how the quality checking for contact lenses in done is factories?

Or

(b) Advantages of molding technique.

13. (a) Advantages and disadvantages of manual keratometry.

Or

(b) Discuss in brief about corneal topography mapping with the help of diagrams.

14. (a) A spectacle wearing myope of –5.00DS is to be fitted with contact lenses. Give the correct formula and explain the calculation.

Or

(b) Explain Knapp's law and its relevance in contact lens fitting.

15. (a) Write the FDA classification of contact lenses.

Or

(b) Give a brief account on cleaning lens deposits.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about Tear film evaluation.

Or

(b) Explain about physiological properties of contact lens materials elaborately.

17. (a) Discuss about spectacle magnification relative spectacle magnification and contact lens magnification.

Or

(b) Discuss in detail about the impact of contact lenses on accommodation and convergence in a spectacle wearer.

18. (a) Static and Dynamic fit assessment of RGP lenses.

Or

(b) Discuss the type of fit-steep, flat, optimum –on tonic corneas with spherical lenses.

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C–8171	Sub. Code
	91452

B.Sc. DEGREE EXAMINATION, APRIL 2023.

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 lang's test.
2. Define Optical Penalization.
3. Sherrington's law.
4. What is Degree and Prism Diaptore.
5. What is Obligatory Suppression.
6. Explain Motor Fusion.
7. Define NRC.
8. Worth four dot test.
9. Types of occlusions.
10. Define Suppression.

Part B

$(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Grades of Binocular Single Vision.

Or

(b) Psuedo Strabismus.

12. (a) Explain Anomalies of Auomodrtion.

Or

(b) Eccentric fixation evaluation and clinical importance.

13. (a) Ductions and versions.

Or

(b) Anomalous Retial correspondance.

14. (a) Bagolini striated Glass tests.

Or

(b) Maddox rod and Maddox wing test.

15. (a) Write details about field of fixation.

Or

(b) Explain types Mechanism, Definition and components of convergence.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Non Surgical Management of Strabismus.

Or

(b) Theories of Binocular vision.

17. (a) Write about actions of EOM.

Or

(b) Explain types of Suppression.

18. (a) Explain occlusion therapy.

Or

(b) Amblyopia classification, investigation and treatment.

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C–8172	Sub. Code
	91453

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Optometry

PEDIATRIC AND GERIATIC OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Normal Birth weight according to WHO standards.

2. Ocular complications that occur due to photo therapy in new borns.

3. Any two ocular signs in Marfan's syndrome.

4. Average corneal diameter at birth is _____ mm & in adults, it is _____ mm.

5. Any two signs of school Myopia.

6. Mention any two congenital Retinal disorders.

7. Any two symptoms of Anridia.

8. Contraindications for using cyclopentolate in children.

9. 1mm of increase in AXL corresponds to _____ D of myopia.

10. If distance refraction of aphakic child is 24.00Ds, what will be the final R_x?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Important points in Birth History.

Or

(b) Give notes on ptosis History.

12. (a) Notes on congenital myopia.

Or

(b) Classification of Amblyopia.

13. (a) Types of latent deviations.

Or

(b) Give short notes on Brown's syndrome.

14. (a) Dispensing guideline for pediatrics.

Or

(b) Brief on precautions for CL fitting in children.

15. (a) List some of the aging changes of Lid & cornea.

Or

(b) Enumerate the Retinal complications in vascular diseases of geriatric.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the development of eye in fetus.

Or

(b) Write about visual acuity assessment in newborns and toddlers.

17. (a) Give detailed notes on refraction in pediatric myopia. Also give highlights on prescribing guidelines.

Or

(b) Write in detail about Nystagmus in children.

18. (a) Discuss about Retionapathy of Prematurity.

Or

(b) Explain about Diabetic Retinopathy.

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C–8173	Sub. Code
	91454

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Optometry

DISPENSING OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Advantages of high Index Lenses.

2. Name some Frame Materials.

3. Transpose $-6.0 / -3.0 \times 90^{o}$ into other cylinder and give its spherical equivalent.

4. Define Maintenances of Spectacles.

5. What is Face Form?

6. Write three Frame adjustment.

7. What is IPD and Back Vertex.

8. What is Gradient tint?

9. What is keyhole bridge?

10. Names of Special purposes frame.

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

Answer **all** questions

11. (a) Explain different parts of Frame with Diagram.

Or

(b) How to measure inter pupillary distance for Distance, Near and Bifocal height.

12. (a) Write about Aspherical lens.

Or

(b) Indication and Contra indication of PAL's.

13. (a) ANSI Standards for Single vision lenses.

Or

(b) Compare between boxing system and Datum system.

14. (a) What are the Accessories which include maintenance of Spectacles?

Or

(b) Anaisokonic lens.

15. (a) Write the properties of gold and titanium materials.

Or

(b) Pentascopic Gilt in details.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) What is Pediatric Dispensing, Write down the Frame and Lens Section Criteria of pediatric.

Or

(b) Describe the different types of Multifocal lenses with suitable examples. Describe with the help of suitable diagrams dimension of Bifocal and Trifocal segments.

17. (a) Explain about Recording and Ordering of lens.

Or

(b) Explain Toric transposition with example.

18. (a) Give details about Photo Chromatic lens.

Or

(b) Classification of Frames and their Materials in details.

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C–8174	Sub. Code 91455

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Optometry

PUBLIC HEALTH AND COMMUNITY OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define preventable blindness. Give an example.

2. What is Madras Eye?

3. According to WHO, vision less than ———— is called Low vision and vision < ———— is blindness.

4. Role of WHO in avoiding infectious eye diseases.

5. Any two objectives of NPCB.

6. Define Health.

7. What is mortality rate?

8. What is pandemic?

9. Any two complications of childhood obesity.

10. Complications of protein deficiency in children.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Give a brief account on epidemiology of blindness in India.

Or

(b) Explain in brief about untreated Refractive errors in School Children and how to address them.

12. (a) Explain in brief about education and awareness in health care.

Or

(b) Nutritional blindness.

13. (a) What are the common eye diseases in underdeveloped countries? Brief on modes of prevention.

Or

(b) Why is cataract still a top most cause of blindness in India?

14. (a) Mention any one eye care program that you have actively participated. Discuss the final outcomes of the same.

Or

(b) Discuss recent trends of increasing prevalence of school myopia.

15. (a) Role of optometrist in public health.

Or

(b) Importance of communication in eye care program.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write in detail about contribution of State Govt. of Tamilnadu in eradicating treatable blindness. Comment on responsibilities of RIO.

Or

(b) School eye screening protocol and outcome.

17. (a) Detailed discussion on levels of health care patterns in India.

Or

(b) Write in detail about cost effectiveness analysis and cost benefit analysis in treating a patient.

18. (a) Enlist the diseases that cause loss of visual fields. Discuss their psychological impact on individual and family.

Or

(b) Social and economic impacts caused by Diabetes Mellitus.

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C–8175	Sub. Code
	91456

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Optometry

BIO-STATISTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write infant mortality rate formula.

2. List out probability sampling methods.

3. Define type I error

4. Define mode.

5. What are the absolute measures of dispersion?

6. Write the types of correlation.

7. Write the density function for binomial distribution.

8. List out any two properties of Normal distribution.

9. Write the formula for bed occupancy rate.

10. What are the uses of hospital statistics?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain biostatistics.

Or

(b) Explain about perinatal mortality rate.

12. (a) Write the hypothesis testing procedure.

Or

(b) What is stratified random sampling.

13. (a) What are the sources of secondary data with an example.

Or

(b) Calculate median for the following data.

Weight (in kg)	45	50	55	60	65
No. of persons	12	18	10	5	5

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

Or

(b) Explain about normal distribution in detail.

15. (a) Explain about bed turnover rate.

Or

(b) In the month of June 4,000 inpatients days were served in a hospital with 150 beds. Calculate the percentage of inpatient occupancy rate.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain probability sampling in detail.

Or

(b) Calculate mean and standard deviation for the following data.

Weight (in kg)	155-160	160-165	165-170	170-175
No. of students	10	17	28	20

17. (a) Derive X on Y regression equation for the following data.

x	10	15	20	25	30
y	7	14	21	28	35

Or

(b) Explain scatter diagram in detail.

18. (a) Prove addition theorem of probability when the two events A and B are necessarily mutually exercise events.

Or

(b) The number of boys and girls who are regular in their physical exercise is distributed as given below.

Habit	boys	girls.
Exercise regularly	30	50
Do not exercise regularly	70	45

Use chi- square test to check whether association between boys and girls the habit of exercises.

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C–8176	Sub. Code
	91461

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Optometry

CONTACT LENS – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

True or False. Justify your answer :

1. RGP lenses are meant for dry storage.

2. Dry eye is an indication for fitting CLs.

3. Toric CLs are very useful in oblique astigmatism.

4. AS OCT is a requirement for fitting scleral lenses.

5. Keratometry is not reliable in keratoconic corneas with curvature < 50 D.

6. Flat fit in Keratoconus can cause corneal scarring

7. Type A prosthetic CL comes with opaque pupil and is used for occlusion.

8. Spectacle power of < 5.00 DS need not be vertex corrected.

9. Knapp's law states axial anisometropia does better with contact lenses.

10. Spectacle magnification is comparison of the magnification of ametropic eye to emmetropic.

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

Answer **all** the questions.

11. (a) Discuss on SCL materials.

Or

(b) Comment on the availability of multifocal contact lenses and its advantages.

12. (a) How do you select parameters for a toric SCL? Give notes on vertex correction of cylinder power.

Or

(b) Explain 3 point touch in keratoconic eyes with RGPs.

13. (a) List the CL solutions available in market. Discuss their pros and cons.

Or

(b) Discuss the disinfecting agents in the CL solution and their importance.

14. (a) Brief on the procedure to be followed for fitting prosthetic shells.

Or

(b) Fitting CLs in High Myopia.

15. (a) Elaborate on semisclerals and their advantages over regular soft lenses.

Or

(b) Common complications of using SCLs.

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

Answer **all** the questions.

16. (a) Explain in detail about available CL fitting options in pediatric Aphakia.

Or

(b) Write in detail about fitting procedure of Scleral lenses and assessment.

17. (a) Give detailed notes on fitting assessment of soft toric lenses.

Or

(b) Explain the indications for fitting prosthetic contact lenses.

18. (a) Discuss in detail about CL fitting in overly flat corneas that result due to refractive surgeries.

Or

(b) Give a broad classification of SCL Vs RGP contact lenses.

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C–8177	Sub. Code 91462

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Optometry

BINOCULAR VISION – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Action of Inferior obliques.

2. Define Hess chart.

3. Cover and uncover test.

4. Write about Brown Syndrome.

5. Define negative angle Kappa.

6. Physiological Diplopia

7. Accommodation Easotropia

8. Define Empiricalcues.

9. Diplopia tests

10. Steropsis

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Worth four dot tests.

Or

(b) Version types.

12. (a) Motor signs in squint.

Or

(b) Explain ocular motility status.

13. (a) After image test.

Or

(b) Symptoms and sign of converging insuffiency.

14. (a) Exophoria

Or

(b) Exotropia

15. (a) Clinical characteristics of Paralytic Squint.

Or

(b) Diplopia charting

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Define nystagmus with its etiology, types and management.

Or

(b) Write an BSR-grading and management.

17. (a) Explain orthopetic treatment.

Or

(b) Explain orthopetic instruments.

18. (a) Detail notes on paralytic squnt.

Or

(b) Describe the Ambloypia and management.

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C–8178	Sub. Code 91463

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Optometry

LOW VISION AID

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define legal blindness.

2. List out the common low vision disorders leading to peripheral vision loss.

3. Bioptic Telescope.

4. Define low vision according to WHO.

5. Three differences between galilean and Keplerian Telescope.

6. Relative distance magnification.

7. Any two signs of retinitis pigmentosa.

8. Mention any two congenital retinal disorders.

9. Any two symptoms of ocular Albinism.

10. Mention the travel concessions available.

Part B (5 × 5 = 25)

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

11. (a) Classification of low vision.

Or

(b) List the psychological stages that follow sudden and acquired vision loss.

12. (a) Give short notes on optics of keplerian telescope.

Or

(b) Advantages and disadvantages of hand magnifier.

13. (a) Vision testing in low vision patients.

Or

(b) Typoscope.

14. (a) Give notes on vocational guidance in low vision patients.

Or

(b) Brief on visual precautions for color blindness.

15. (a) Give notes on retinal complications in pathological myopia.

Or

(b) List out the causes of low vision in elderly.

Part C (3 × 10 = 30)

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

16. (a) Explain in detail about epidemiology of low vision model.

Or

(b) Write elaborately on prescribing of telescopes in low vision patients.

17. (a) Give detailed notes on optics of spectacle magnifier with the help of diagrams.

Or

(b) Write in detail on causes of low vision in children.

18. (a) Discuss in detail about signs, clinical features and management of retinitis pigmentosa.

Or

(b) Explain about non optical and electronic low vision aids.

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C–8179	Sub. Code 91464

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Optometry

OCCUPATIONAL OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Any two objectives of ILO.

2. Role of WHO in occupational health.

3. Ill effects of Infra red radiation.

4. PPE used by nurses. Give two examples.

5. Vision standards for passing driving licence.

6. Mention any four ergonomic requirements in schools.

7. Role of contact lens in sports players.

8. Comment on helmet design of civil engineers.

9. Any two ill effects of LASER.

10. PPE for housekeeping personnel.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Give notes on occupational health standards.

Or

(b) What is occupational hygiene? Explain in brief.

12. (a) List down the objectives of ILO.

Or

(b) Harmful effects of UV radiation and ways of protection from same.

13. (a) Discuss the occupational health hazards in sanitation workers.

Or

(b) Occupational health hazards faced by paramedics in general.

14. (a) What is computer vision syndrome? Discuss the clinical assessment involved.

Or

(b) What are the occupations that cause dry eye? How to manage the same?

15. (a) Infectious disease in workplace. Discuss.

Or

(b) Write brief notes on visual task analysis.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Write note on factories Act, WCA and ESI Act. How do they improve occupational health?

Or

(b) Write about visual display units and their impact on eye health.

17. (a) Write about Electromagnetic radiation and its effect on eye.

Or

(b) Write in detail about occupational hazards of any three chosen occupations.

18. (a) How will you plan and conduct an industrial vision screening in your locality?

Or

(b) Vision standards used in Railways, Roadways, Navy and Airlines.

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C–8180	Sub. Code 91465

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Optometry

SYSTEMIC DISEASES AFFECTING THE EYE

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Enlist the four gradings of Hypertensive Retinopathy.

2. Write down the risk factors for type two Diabetes Mellitus.

3. What is sydenhans chorca in Rheumatic fever?

4. In short write about stickler syndrome.

5. Define Kerato conjunctivitis sicca.

6. What are carcinomas?

7. List down the ocular in involvement of Thyroid disease.

8. What is Autsomal Recessive inheritance pattern?

9. Enlist the ocular manifestations of Dane Peters Anomaly.

10. Write the treatment modalities of Leprosy.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write shortly on Rheumatic fever and its effect on eye.

Or

(b) Briefly write grading and staging of Neoplasm's.

12. (a) In short write on syphylis and its ocular involvement.

Or

(b) Briefly Dan write on Multiple Scluosis.

13. (a) Shortly Explain Retinoblastoma.

Or

(b) Write short notes on Optic Neuritis.

14. (a) Enlist the ocular manifestation of Tuberculosis.

Or

(b) Explain Exophthalmos.

15. (a) Write the clinical sings of Thyroid Eye disease.

Or

(b) In short write on risk factors of Diabete Retinopathy.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain in detail about Diabetic Retinopathy.

Or

(b) Describe the Effects of Syphilis on Eye.

17. (a) Enlist and explain the ocular manifestations of vitamin deficiency.

Or

(b) Explain Malaria in detail with it is Effects on eye.

18. (a) Write in detail about Rheumatoid Arthritis and Eye.

Or

(b) Write on Retinits Pigmentosa in detail.

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C–8183	Sub. Code
	91433

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Optometry

OCULAR DISEASE - I

(Upto 2015 Batch)

Duration : 3 Hours Maximum : 70 Marks

Part A (5 × 6 = 30)

Answer any **five** questions.

1. Ocular Hypertension

2. Trachoma

3. Formation of Aqueous Humor

4. Peripheral Iridectomy

5. Tumours of Iris

6. Eviseration

7. Staphyloma and its types

8. Trichiasis

Part B (4 × 10 = 40)

Answer any **four** questions

9. Primary open angle Glaucoma.

10. Anterior Uveitis.

11. Nuclear Cataract

12. Keratoconus, investigations and its treatment.

13. Degenerations of Conjunctiva.

14. Photo Opthalmia.

15. Congenital anomalies of lens.

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C–8185	Sub. Code
	91443

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Optometry

CLINICAL REFRACTION – II

(Upto 2015 Batch)

Duration : 3 Hours Maximum : 70 Marks

Part A ($5 \times 6 = 30$)

Answer any **five** questions.

1. What are the various ways by which you can assess the vision of a preverbal child?

2. What Ocular problems do you expect in a child with cerebral palsy and what special tests would you perform?

3. Treatment and problems encountered in anisometropia.

4. VER – Explain.

5. Binocular balance in detail.

6. Dyslexia and its diagnosis and management.

7. Write short notes on

   (a) Dermatochalasis

   (b) Xanthelesma

8. List five conditions where the retinoscopic reflex is expected to be dull / disorted and reasons for it.

Part B (4 × 10 = 40)

Answer any **four** questions.

9. Describe the types of strabismus, its evaluation, diagnostic tests and management.

10. Describe the use of prisms in neuro-optometric rehabilitation with examples for each.

11. Explain refractive changes in elderly.

12. What is nystagmus? Write in detail about refraction in nystagmus.

13. What is low vision? Explain about various optical and non optical aids.

14. Describe how you would manage a patient who has Retinitis pigmentosa in your low vision setup. Mention all the details about history, diagnostic tests, management and counseling.

15. List the types of amblyopia and its management.

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