C–0366	Sub. Code
	91412

B.Sc. DEGREE EXAMINATION, NOVEMBER 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 Saliva.

2. Name the parts of small intestine and large intestine.

3. Name the bones of the skull.

4. What are heart sounds?

5. Define Hypoxia.

6. What are bile pigments?

7. Name voluntary and involuntary muscles.

8. Write the parts of sperm.

9. Write on composition of lymph.

10. List the functions of bone.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Label the diagram of urinary system.

Or

(b) Explain conduction system of the heart.

12. (a) Write briefly on mechanism of respiration.

Or

(b) Write on functions of cortex.

13. (a) Explain hypertension.

Or

(b) Structure of cardiac muscle. Explain.

14. (a) Enumerate the functions of CSF.

Or

(b) Enlist the layers of retina.

15. (a) Neuromuscular junction. Explain.

Or

(b) Write about menstrual cycle.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What is cardiac cycle?

Or

(b) Give an account of Anatomy of lungs. Add a note on its functions.

17. (a) Describe Heart in detail with its parts.

Or

(b) Draw and label the parts of Digestive System.

18. (a) Explain detail about the parts of testis with its covering. Add a note on its functions.

Or

(b) Write in detail on Myasthenia gravis.

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C–0367	Sub. Code
	91413

B.Sc. DEGREE EXAMINATION, NOVEMBER 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. Write briefly on the mutarotation.

2. What is an essential fatty acid? Give the examples.

3. Mention the sulphur containing amino acids.

4. Write the characteristics of scurvy.

5. What you meant by preocular layer?

6. List the chemical composition of cornial stroma.

7. Outline the types of lens protein.

8. What is the result of lens hydration?

9. How would you interpret the result of Benedict's test?

10. What you meant by clotting time? Explain the normal value.

Part B (5 × 5 = 25)

Answer **all** the questions

11. (a) Give a note on structure and chemistry of Starch.

Or

(b) Write about the pathology of atherosclerosis and its consequences.

12. (a) Mention the sources, chemistry, biological uses and deficiency disorder of vitamin-A.

Or

(b) Write briefly on the factors affecting enzyme action.

13. (a) Give brief notes on changes in tear film when contact lens wear.

Or

(b) Explain briefly on the water, electrolyte and protein concentration of cornea.

14. (a) Draw a neat structure of ciliary processes and label it.

Or

(b) Give an account on diabetic cataract.

15. (a) Describe the assay and normal values of blood sugar.

Or

(b) Explain the blood grouping and its clinical uses.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Write in detail about the structure chemistry and biological uses of hetero polysaccharides.

Or

(b) Give detailed notes on types, structure and chemistry of phospholipids.

17. (a) Illustrate the classification of structure of protein.

Or

(b) Elaborate the formation of tear film.

18. (a) How are dehydration and transparency of lens maintained?

Or

(b) Outline the chemical composition and abnormalities of aqueous humor.

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C–0368	Sub. Code
	91414

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

First Semester

Optometry

GEOMETRICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define speed.

2. Define wavefront.

3. Define optical path length.

4. State the snell's law of refraction.

5. Define vergence.

6. Define velocity.

7. Define lateral magnification.

8. Define focal length and focal point

9. Define refraction.

10. List out the types of monochromatic aberrations.

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Write in detail about the dual nature of light

Or

(b) Derive vergence equation.

12. (a) Write about the refraction by plane parallel glass slab.

Or

(b) Write about chromatic aberrations.

13. (a) Explain lateral and axial magnification.

Or

(b) Explain about the refraction by spherical convex surface.

14. (a) Explain about the fermat's principle–law of reflection.

Or

(b) Write about cardinal points and planes.

15. (a) Write about reflecting prisms.

Or

(b) Write about the uses of optical fibers.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about the fermats principle—law of reflection and refraction.

Or

(b) Write about dispersion of prism and prism diopter.

17. (a) Write in detail about monochromatic aberrations.

Or

(b) Explain the geometrical theory of optical fibers also write about the uses of optical fibers.

18. (a) Write in detail about the Total internal reflection.

Or

(b) Derive the equivalent focal length of two thin lenses separated by a distance.

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C–0369	Sub. Code
	91415

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

First Semester

Optometry

NUTRITION

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define nitrogen balance.
2. Write an antioxidants with examples.
3. Enumerate vitamin 'A' deficiency disorders.
4. Write on satiety value.
5. Shortly write on non-essential amino acids.
6. What are the functions of miners? List out
7. Define xerophthalmia.
8. Write on RDA.
9. Define BMI.
10. Write about Anemia.

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

Answer **all** questions.

11. (a) Nutrition as science. Explain.

Or

(b) Nitrogen balance.

12. (a) Write on Atherosclerosis.

Or

(b) Determination of energy value of foods.

13. (a) Define and classify fats.

Or

(b) List out functions of proteins and protein requirements.

14. (a) What food and food groups?

Or

(b) Write on macro minerals associated with eye.

15. (a) Brief on sources and functions of proteins.

Or

(b) Write the difference between complete and incomplete proteins.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write in detail on extremely low birth weight babies.

Or

(b) Explain in detail about Vitamin 'A' deficiency discuss.

17. (a) Discuss in detail on fats and its association with eye.

Or

(b) Describe in detail on microminerals associated with eye.

18. (a) Discuss in detail about Bomb caloriemetry.

Or

(b) Write in detail on excess of lipids on Eye.

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C–0370	Sub. Code
	91416

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

First Semester

Optometry

COMPUTER

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is called data?

2. Define the term software.

3. Convert the following decimal number to octal and hexadecimal 8762.

4. What is browsing?

5. Define the term internet.

6. What do you mean by primary memory?

7. Name any two peripheral devices.

8. What is slide transition?

9. What is micro computer?

10. What is URL?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) How computer performs subtraction arithmetic? Illustrate.

Or

(b) Explain the elements of anyone windows application.

12. (a) Describe octal number system and explain the conversion to binary from it.

Or

(b) Write the procedure to set header and footer in a document.

13. (a) Write the advantages and disadvantages of e-mail.

Or

(b) What are the steps to open the following accessories and write their uses?

(i) Note pad

(ii) Paint.

14. (a) How can you create and close a presentation?

Or

(b) Explain binary number system.

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

Or

(b) Write a note on "My computer".

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) What is mail merge? Explain.

Or

(b) Explain custom animation and slide transition in power point.

17. (a) Explain the structure of an e-mail address. How can you compose and forward an e-mail message?

Or

(b) Describe the uses of any four accessories.

18. (a) Describe the different ways to edit a document.

Or

(b) Name the four basic icons present on the desktop and explain.

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C–0371	Sub. Code 91422

B.Sc. DEGREE EXAMINATION, NOVEMBER 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 Urea.

2. Name the structures derived from Ectoderm in the development of Eye.

3. Explain the layers of cornea.

4. What is macula lutea?

5. Write on Orbicularis Oculi.

6. Name the components of aqueous humor.

7. Posterior chamber. Explain.

8. Enumerate Intra ocular muscles.

9. Write on Angle of Anterior chamber.

10. List out the Muscles of the Iris.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Neatly label the parts of Eye lids.

Or

(b) Write in short about conjunctive.

12. (a) Briefly write on extra ocular muscles – its origin, its insertion and its nerve supply.

Or

(b) Write about Apex of orbit.

13. (a) Structure of choroid and its blood supply.

Or

(b) Write on glands of the Eye lids.

14. (a) In short write about development of accessory structures of Eyeball.

Or

(b) Briefly explain ciliary zonules.

15. (a) Write in short about glands of conjunctive.

Or

(b) Briefly write blood retinal barrier.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Write Anatomy of retina with its blood supply.

Or

(b) Explain in detail about the secretion. Circulation and drainage of aqueous humor with diagram.

17. (a) Draw a diagram of crystallins lens and discuss about its anatomy.

Or

(b) Describe in detail about angle of anterior chamber.

18. (a) Write in detail about the contents of orbit.

Or

(b) Write on corneal transparency.

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C–0372	Sub. Code
	91423

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write on compounds of accomodation.

2. What is pre-corneal tear film?

3. Enlist the various test for colour vision.

4. Enumerate the factors affecting visual acuity.

5. Write the theories of colour vision.

6. Write the actions of orbicularis oculi, levator palpebrae and Muller's muscle.

7. List out the functions of aqueous humor.

8. What are the stimulus for accomodation?

9. Schirmer's test. Define.

10. What are the normal color attributes?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain the factors responsible for corneal transparency.

Or

(b) Explain arc of contact, muscle picone and axis of rotation.

12. (a) What is presbyopia? Explain its types and signs.

Or

(b) Write on physiology of optic nerve.

13. (a) Explain about maintenance of India ocular pressure.

Or

(b) Write basic kinematics and physiology of right superior rectus muscle.

14. (a) Explain blood aqueous barriers.

Or

(b) Write on optic atrophy.

15. (a) Explain monocular vision.

Or

(b) Write shortly on pupillary reflex.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe extraocular muscles – its origin, insertion, never supply and action.

Or

(b) Explain in detail about the normal and applied anatomy of lacrimal system and tear drainage.

17. (a) Write in detail about different types of pupillary defects.

Or

(b) Explain the changes in lens during ageing process.

18. (a) Explain color vision in detail.

Or

(b) Write in detail about physiology of ocular movements.

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C–0373	Sub. Code
	91424

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Second Semester

Optometry

PHYSICAL OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define nature of light.

2. What is simple harmonic motion?

3. Define interference.

4. What is path difference?

5. Define diffraction.

6. What is dispensive power of gratting?

7. Write the native of polarization.

8. What is birefringence?

9. Write any two advantages of Laser.

10. Define radiometry.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on Hygen's law of reflection.

Or

(b) Discuss the importance of group velocity.

12. (a) Write a brief note about Leoy'd single mirror experiment.

Or

(b) Describe in detail young's double slit experiment.

13. (a) Discuss some important points about transmission gratting.

Or

(b) Write some important points about resolution of circular apertures.

14. (a) Discuss about different types of polarized light.

Or

(b) How the nicol prism act as polarizer, explain.

15. (a) Explain the principle and working of sodium lamp.

Or

(b) Write some important points on binocular.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Derive a mathematical equation for simple harmonic motion.

Or

(b) Write in detail anyone method to find the velocity of light.

17. (a) Explain the principal, concept and construction of Freshnels biprism.

Or

(b) Describe in detail diffraction due to double slit.

18. (a) Discuss in detail Quarter and half wave plate working principle.

Or

(b) Explain in detail construction and reconstruction of Hologram.

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C–0374	Sub. Code
	91425

B.Sc. DEGREE EXAMINATION, NOVEMBER 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. Write the applications of Giemsa staining.

2. Mention the primary and secondary stains of acid-fast staining.

3. Mention the ocular lesions of leptospira.

4. Write the characteristics of scurvy.

5. List the examples of RNA viruses.

6. Draw the structure of yeast and label it.

7. Outline the scar.

8. What is fibroblast?

9. Mention the pseudotumors.

10. Define the keratoconnus.

Part B (5 × 5 = 25)

Answer **all** the questions

11. (a) Give a note on techniques of ocular specimen collection.

Or

(b) Sketch the steps involved in Gram's staining with its result.

12. (a) Mention the pathology, ocular lesions and treatment of streptococci.

Or

(b) Write briefly on the pathology and treatment of tuberculosis.

13. (a) Give brief notes on clinical features, ocular lesions and treatment of fusarium.

Or

(b) Explain briefly on the antibody and cell mediated hypersensitivity reaction with an example.

14. (a) Illustrate the agents causing tissue injury.

Or

(b) Give an account on the role of cellular components in healing and repair process of injury.

15. (a) Describe the allergic conjuctivitis.

Or

(b) Explain the types characteristics of hordeolum of eye lid.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions

16. (a) Write in detail about the culture and antibiotic sensitivity test.

Or

(b) Give detailed notes on types, pathology and ocular lesions of enterobacteria.

17. (a) Illustrate the clinical features, ocular lesions and treatment of pox and rubella virus.

Or

(b) Elaborate the pathology, ocular lesions and treatment of acantameoba and echinococcus.

18. (a) Discuss in detail on cataract and diabetic cataract.

Or

(b) Outline the pathology of kalignant melanoma and orbital tumor.

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C–0375	Sub. Code
	91432

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Third Semester

Optometry

VISUAL OPTICS

(2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Refractive indices of Cornea, Lens and Aqueous Humor.

2. Functions of Pupil.

3. What is Angle Kappa?

4. What is Visual Axis?

5. What is Second Sight?

6. Define Anisometropia.

7. Define spectacle Magnification.

8. What is NRA?

9. What are Distortions?

10. Define depth of field.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Optical functions of Cornea.

Or

(b) Donder's reduced eye model.

12. (a) Write notes on Congenital Myopia.

Or

(b) Write notes on Irregular Astigmatism.

13. (a) Write notes on ocular refraction and spectacle refraction.

Or

(b) Write notes on Retinal image size calculation.

14. (a) Procedure of using a Retinoscope.

Or

(b) How to use a JCC?

15. (a) What are the uses of Prisms in clinical optometry?

Or

(b) List the difficulties in doing subjective refraction.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write in detail about Aberrations of the eye.

Or

(b) Explain about contrast sensitivity.

17. (a) Write detailed notes on subjective refraction.

Or

(b) Explain with example, the effect of vertex distance change in spectacle refraction.

18. (a) Write in detail about assessment of Accommodation.

Or

(b) Give a brief note on Aphakia.

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C–0376	Sub. Code 91433

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Optometry

OCULAR DISEASE – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Dry Eyes.
2. Explain Normal tension Glaucoma.
3. Define symblepharon.
4. What is Descematocele.
5. Explain Dendritic Ulcer.
6. WHO grading of Trachoma.
7. What is Arcus senilis and Arcus Juvenilis.
8. Explain Megrlo Corner.
9. Short Notes about congenital lamellar cataract.
10. What is Hyphema?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe Orbital Cellulitis.

Or

(b) Discuss scleritis.

12. (a) Explain Pterigium.

Or

(b) Explain Ptosis.

13. (a) Vitamin Deficiency.

Or

(b) Bacterial conjunctivitis.

14. (a) Congenital Coloboma.

Or

(b) Congenital Anomalies

15. (a) Clinical features of Anterior Uveitis.

Or

(b) Corneal Opacity and its types.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Senile cataract.

Or

(b) Primary Open Angle Glaucoma.

17. (a) Acute and chronic Dacryocystitis.

Or

(b) Anterior Uveitis. Explain Clinical features symptoms. sign complication and Management.

18. (a) Describe the pathophysiology and signs, of Grave's eye Disease.

Or

(b) Explain Secondary Glaucoma, Clinical features and Management.

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C–0377	Sub. Code
	91434

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Third Semester

Optometry

OPTOMETRIC INSTRUMENTS — I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Any two uses of simple microscope.

2. What is an objective lens?

3. What is the optical principle of radioscope?

4. Any two advantages of Snellen chart

5. What is a phoropter?

6. What is stenopic slit?

7. Any two uses of vision analyzer.

8. Names of contrast sensitivity test charts.

9. What is the use of red free filter in slit lamp?

10. Expand LASER.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Construction of a simple microscope.

Or

(b) Write in brief about spectrometer.

12. (a) Construction of a Snellen chart.

Or

(b) Uses of different optotypes in vision testing.

13. (a) Write in brief about pupilometer.

Or

(b) Write notes on advantages of direct opthalmoscope.

14. (a) Write a brief account on subjective optometers.

Or

(b) Techniques of using a retinoscope.

15. (a) Write a note on corneal topography.

Or

(b) Uses of LASER in ophthalmology.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Detailed notes on construction of a radioscope and its uses.

Or

(b) Construction of a LogMAR chart.

17. (a) Give detailed account on principle, parts and procedure of using a retinoscope.

Or

(b) Give a detailed account on direct ophthalmoscopes.

18. (a) Instrumentation of slit lamp Biomicroscopy-Explain.

Or

(b) Construction of potential acuity meter and its uses - Discuss.

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C–0378	Sub. Code
	91435

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the forms of ocular anesthetics.

2. Lipophilic drugs are have the longer action. Why?

3. Define Lead compound.

4. Mention the drugs action through non-drug receptor function.

5. Write short notes on action potential.

6. Name few antipyretics.

7. Mention the agonist.

8. Define Synopsis.

9. What is the base to prepare ointment?

10. List the advers reactions of corticosteroid in ocular tissue.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short note on enteral route of drug administration.

Or

(b) Illustrate the colloidal systems in ocular drugs.

12. (a) What are the manifestation of ADR? How will you treat it?

Or

(b) Briefly write on drug–dose response relationship study.

13. (a) Compare the opioid and non-opioid analgesics.

Or

(b) Name the drugs used to treat insominia and explain any two.

14. (a) Classify the adrenergic receptor and explain.

Or

(b) What are anticholinergic drugs? Explain this drug used in treating ocular disease.

15. (a) Describe the ocular drug penetration enhancers.

Or

(b) Discuss briefly on viscoelastic agents.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Describe the metabolism of drug.

Or

(b) Mention the factors influencing drug distribution.

17. (a) Classify the drug receptors and explain the action of any two receptor.

Or

(b) Elaborate the local anesthetics including ocular topical anesthetics.

18. (a) Give an account on role of adrenergic drugs in treatment of ocular disease.

Or

(b) How would you treat glaucoma? Explain.

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C–0379	Sub. Code
	91436

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Optometry

CLINICAL EXAMINATION OF VISUAL SYSTEM

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. History of abnormal Head posture.

2. What is ran Herrick grading?

3. Any two uses of conical beam in slit lamp.

4. What is MEM method?

5. Against movement in retinoscopy is indicative of ———— and ———— lenses are to be used.

6. What is the endpoint of Bichrome test?

7. What is Borish delay?

8. How to test EOM?

9. Indications of Amsler Test.

10. How to assess NRA?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Visual acuity assessment using Snellen chart.

Or

(b) Give short notes on confrontation test.

12. (a) Optics of Retinoscopy.

Or

(b) Limitations of Auto Keratometer.

13. (a) How to use JCC?

Or

(b) Procedure of using Astigmatic Dial.

14. (a) Write short notes on Cycloplegic refraction.

Or

(b) Describe pinhole estimation of Refractive error.

15. (a) How to calculate Tentative add for presbyopia?

Or

(b) Give notes on Hirschberg test with diagram.

Part C (3 × 10 = 30)

Answer **all** questions.

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

Or

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

17. (a) What are the different methods of dynamic Retinoscopy?

Or

(b) Explain in detail about refinement of spherical power in subjective refraction.

18. (a) Elaborate about prescribing adds using different methods of tentative presbyopic addition.

Or

(b) Write in elaborate about measurement of IPD and its significance.

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C–0380	Sub. Code
	91442

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fourth Semester

Optometry

OPTOMETRIC OPTICS

(2016 onwards)

Duration: 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is Refractive Index?
2. Define Optic center.
3. Transpose the following prescription :
   $+2.0/\overline{3}.0\times100°$
4. Properties of Cross cylinder.
5. Name the material used in making of frames.
6. Define Base curve.
7. What is Abbe value?
8. Explain Absorption.
9. What are Transverse Movement?
10. Designs of Bifocals.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Draw the frame and marks the parts. Mention the types.

Or

(b) How do inspect quality of lens?

12. (a) Explain interpupillary distance vertex distance and vertex power.

Or

(b) Factors influencing photo chromatic effects of lens.

13. (a) Terminology used in Lens workshops.

Or

(b) Drop bell test explain.

14. (a) Freshel's prison.

Or

(b) Rotatory prison.

15. (a) Give notes on Allyldiglycol carbonate.

Or

(b) Write short notes on surfacing process from Blank to lenses.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain Multifocal lens.

Or

(b) PAL in details.

17. (a) Explain principle of ARC, How could you check that the path condition has been fulfilled.

Or

(b) Discuss the different types of absorptive glassess.

18. (a) Explain in detail the process of surfacing.

Or

(b) Describe the process of Manufacturing of glasses.

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C–0381	Sub. Code
	91443

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fourth Semester

Optometry

OCULAR DISEASE – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Lenticonus.
2. What is Nystagmus?
3. Retino blastoma.
4. Mollusum contagiasom.
5. Define Degeneration and Dystrophy.
6. Oscillopsia
7. Berlin's odema
8. Dales Disease
9. What is Meta Morphosia?
10. Preseptal cellulitis.

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Rhegmatogenous Retinal Detachment.

Or

(b) Optic disc coloboma.

12. (a) Amblyopia.

Or

(b) Kier syndrome.

13. (a) Explain Scotoma.

Or

(b) Shorts notes on panophthalmitis and parsplanitis.

14. (a) Intra ocular foreign bodies and Management.

Or

(b) Systemic features of multiple sclerosis.

15. (a) Diabetic Retinopathy.

Or

(b) Hypertensive Retinopathy.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Clinical features and Management of BRVO and CRVO.

Or

(b) Notes on Night blind nets.

17. (a) Explain Nystagmus.

Or

(b) Sixth Nerve palsy.

18. (a) Write about Different types of cataract.

Or

(b) Write in Details about pupil Anomalies.

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C–0382	Sub. Code
	91444

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTS – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Uses of Pinhole.

2. Red and Green filters.

3. Slit Lamp Accessories.

4. Define OCT.

5. Write about Prime bar.

6. Define Schimer's test.

7. What is syringing?

8. What is Diathermy?

9. Parts of Schiotz Tonometer.

10. Shorts notes on Lensometer.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Ishihara Colour Plates.

Or

(b) Explain keratometry.

12. (a) Write about Jackson Cross Cylinder.

Or

(b) Notes on EMG and ENG.

13. (a) Types of Perimetry.

Or

(b) Explain Gonioscopy.

14. (a) Explain Ultrasound Pachymetry.

Or

(b) Write about Auto Refractometer.

15. (a) Vision Drum description and use.

Or

(b) Interpretation of Normal Glaucoma in Automated perimetry.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain Distance and Near charts.

Or

(b) Detailed notes about Retinoscopy.

17. (a) Details of Fundus Fluoresin Angiography.

Or

(b) Explain A'scan and B'scan.

18. (a) Detailed notes on photo coagulations.

Or

(b) Glaucoma evaluation instruments.

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C–0383	Sub. Code
	91451

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

Optometry

CONTACT LENS – I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. BOZR

2. Uses of Retro illumination in slit lamp.

3. Signs of GPC.

4. Corneal warpage.

5. Uses of red free filter in slit lamp.

6. Flat corneas are found in ———— and ————.

7. Sebaceous glands of Eyelid.

8. Oxygen transmissibility.

9. Uses of RGP lenses. Any two.

10. Any two advantages of Hydrogels.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Glands present in eyelid and conjunctiva and their functions.

Or

(b) Enumerate the clinical signs of dry eye.

12. (a) List the advantages of Toric lenses over soft sphericals in Astigmatism.

Or

(b) Compare low Vs high water content materials.

13. (a) Write notes on advantages of topography over keratometry. Give the features of flat corneal map.

Or

(b) Classify CLs based on wearing modality and disposability.

14. (a) Write notes on Oxygen permeability.

Or

(b) Selection of SCL based on ocular parameters. Give example.

15. (a) What are the desired optical properties of CL materials?

Or

(b) Do's and Don'ts with contact lenses.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) List out the indications for CL fitting.

Or

(b) Vertex power calculations for 14 mm vertex distance in (i) –10.00 Ds myope (ii) +12.00 DS hyperope (iii) –5.50 DS myope (iv) + 5.50 DS hyperope.

17. (a) Give detailed notes on RGP CL materials and SCL materials.

Or

(b) In office modifications of contact lenses.

18. (a) Explain in detail about CL solutions.

Or

(b) Explain about a flat fit, optimum fit and steep fit RGP characteristics with the help of diagrams.

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C–0384

Sub. Code
91452

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

Optometry

BINOCULAR VISION — I

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Panum's area.
2. Explain head posture components.
3. What is Fick's axes?
4. What is Pseudo strabismus?
5. Explain eccentric fixation.
6. Types of amblyopia.
7. Uses of Maddox wing and Maddox rod.
8. What is Hering's law?
9. Define horopter.
10. Types of accomodation.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Nystagmus definition and types.

Or

(b) Supra nuclear eye movement.

12. (a) A and V pattern heterophoria.

Or

(b) EOM orgin insertion and nerve supply.

13. (a) Hirschberg corneal test.

Or

(b) Diplopia charting.

14. (a) Versions types.

Or

(b) Visual directions, localization and correspondence point.

15. (a) Visually guided behaviour.

Or

(b) Prism cover test bar.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Neural aspects of binocular single vision.

Or

(b) Evaluation of strabismus.

17. (a) ESO deviation, clinical examination, classification and management.

Or

(b) Anomalies of convergence aetiology and management.

18. (a) Laws of ocular motility.

Or

(b) Explain supra nuclear control of eye movements.

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C–0385

Sub. Code
91453

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

Optometry

PEDIATRIC AND GERIATRIC OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. APGAR score.

2. Ocular complications in premature babies.

3. Any two ocular signs in downs syndrome.

4. Corneal power at birth is ———— D and axial length is ———— mm.

5. Any two signs of Amblyopia.

6. Any two congenital lens disorders.

7. Any two symptoms of ocular Albinism.

8. Contra indications for using Atropine.

9. Arcus senilis.

10. Entropion.

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

Answer **all** questions.

11. (a) Important points in pediatric History taking.

Or

(b) Give notes on Lea symbols.

12. (a) Write short note on congenital ptosis.

Or

(b) Classification of Astigmatism.

13. (a) Sensory tests for children.

Or

(b) Duane's syndrome.

14. (a) Diagnosis and management of microphthalmia.

Or

(b) Brief visual precautions for usage of smart gadgets by children.

15. (a) Give notes on cycloplegic refraction.

Or

(b) Causes of low vision in elderly.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about visual acuity charts and vision testing methods for children below 5 years.

Or

(b) Write elaborately on structural abnormalities of eyelid and adnexa in children.

17. (a) Give detailed notes on clinical features of childhood hyperopia and enlist the prescribing guidelines.

Or

(b) Causes of amblyopia in children.

18. (a) Discuss in detail about signs, clinical features and treatment of retinoblastoma.

Or

(b) Explain about the low vision management in elderly patients.

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C–0386	Sub. Code
	91454

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Optometry

DISPENSING OPTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Advantages of Tinted lenses.

2. What are the expected faults in Spectacles?

3. What is neutralization.

4. How to identify polarized lens.

5. What is Pentascopic tilt.

6. Find out Add for a patient having acceptance of $-3.0/\overline{2}.0\times180^{\circ}$ and Near vision $-2.5/\overline{2}.0\times90^{\circ}$.

7. Define Refractive Index.

8. ARC principle.

9. What is Saddle Nose bridge.

10. What is Risley Prism.

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) ANSI Students for single vision Lenses.

Or

(b) Advantages of progressive addition lenses.

12. (a) Explain Poly carbonate lens.

Or

(b) Explain Trivex lenses.

13. (a) Safety wear.

Or

(b) Errors Seen in power of lenses.

14. (a) Optical Center Marking.

Or

(b) Special purposes frame.

15. (a) Explain spectacle repair tools.

Or

(b) Spectacles Neutralisation.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the disadvantages of ordinary aphakic glass lens. What are the other options for Aphakic lenses.

Or

(b) Defects occuring Spex Manufacturing Process.

17. (a) Describe the various parts of Frame with the help of a diagram and various types.

Or

(b) Describe the various types of prisms.

18. (a) Explain transposition and components of spectacles prescription in details.

Or

(b) What are Absorptive lenses. Explain different method of tinting and its advantages and disadvantages.

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C–0387	Sub. Code 91455

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

Optometry

PUBLIC HEALTH AND COMMUNITY OPTOMETRY

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define avoidable blindness. Give example.

2. Cataract is an example of avoidable blindness. True or false. Justify.

3. Prevalence of DR in India.

4. Braille system.

5. What is MMR?

6. Vision < 6/60 is termed as social blindness. True or false. Justify your answer.

7. Significance of birth weight.

8. Vitamin A deficiency.

9. Expand TORCH.

10. Presence of Syphilis in mother can cause _____ in newborn.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Causes of blindness in India.

Or

(b) What are the indicators of health?

12. (a) How to calculate incidence and prevalence for a disease? Explain with example.

Or

(b) Discuss about Retinopathy of prematurity.

13. (a) Give brief notes on NPCB and its role on community eye health.

Or

(b) What are the tangible and intangible costs involved in a cataract surgery?

14. (a) Vision 2020. Aim and objectives.

Or

(b) Write notes about school vision screening.

15. (a) Importance of Teleoptometry in India.

Or

(b) Screening protocol for DR.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Discuss about dimensions of health and determinants of Health.

Or

(b) Childhood blindness. List the causes and remedies.

17. (a) Write in detail about eye banking.

Or

(b) Write in detail about benefits of public relations.

18. (a) Complication in eye health caused by Diabetes Mellitus.

Or

(b) Rehabilitation services for blind.

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C–0388	Sub. Code 91456

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Optometry

BIO-STATISTICS

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define crude mortality rate.

2. What is infant mortality rate?

3. What is type I error?

4. Define composite hypothesis.

5. Write the formula of median for continuous series.

6. Define regression.

7. Write the formula of binomial distribution

8. What is mean and variance of binomial distribution.

9. Write the formula of bed turnover rate.

10. Write any two uses of hospital statistics.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain systematic sampling method in detail.

Or

(b) Explain neonatal mortality rate.

12. (a) What is complete enumeration method?

Or

(b) What is large sample test explain in detail.

13. (a) What are the one-dimensional diagrams?

Or

(b) Prove additional theorem of probability when two events are not mutually exclusive.

14. (a) Explain binomial distribution in detail.

Or

(b) Write the properties of normal distribution.

15. (a) A hospital with 210 available beds rendered 4780 patient days in June. June has 30 days, calculate percentage of occupancy for the hospital in June.

Or

(b) How to collect hospital statistics data explain in details.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain nonprobability sampling methods in detail.

Or

(b) Calculate mean, median and mode for the following data.

Heights (cm)	100-110	110-120	120-130	130-140	140-150
No. of children	5	26	47	18	10

17. (a) Calculate Standard Deviation for the following data

Score	50-55	55-60	60-65	65-70	70-75	75-80	80-85
No. of persons	20	37	48	21	15	10	5

Or

(b) What are the properties of regression in statistics?

18. (a) Write the common steps involved in testing of hypothesis.

Or

(b) In a coeducational institution, out of 200 students 150 were boys. They took an examination and it was found that 120 passed, 10 girls had failed. Is there any association between sex and success in the examination?

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C–0389	Sub. Code 91461

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Optometry

CONTACT LENS – II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the following.

1. What is CAAS Rule?

2. Apical touch is found in ——————— fit in ——————— corneas.

3. A ———————mm change in BC demands a change of TD by ——————— mm.

4. If a – 3.00 $DC \times 10$ toric CL rotates 5 degree nasally. What will be the final ax is of Rx?

5. Recent History of Hepatitis infection is a contraindication for CL use. Why?

6. Silicone Hydrogels are low in dK yet used as Extended wear lenses. How?

7. 1 mm of increased AXL corresponds to ——————— D of Myopia.

8. Disadvantage of piggyback lenses.

9. Type A prosthetic CL is used for ———————— and ———————— conditions.

10. Why near correction should always be prescribed in CLs for pediatric Aphakia?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Advantages of SCL lenses.

Or

(b) Give notes on disposable lenses.

12. (a) Give brief notes on extended wear lenses.

Or

(b) Fitting RGPs in keratoconus.

13. (a) What is LARS Rule? Define its application.

Or

(b) Give notes on indications of therapeutic CLs.

14. (a) CL fitting in post refractive surgeries.

Or

(b) Precautions for fitting CLs in pediatric patients.

15. (a) List the contact Lens associated corneal complications.

Or

(b) Enumerate the common cleaning and Lubricating agents used in CL solutions.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about about scleral and mini scleral lenses.

Or

(b) Write elaborately on fitting contact lenses in pediatric Aphakia.

17. (a) Give notes on fitting contact lenses in presbyopia.

Or

(b) Write about prosthetic shell fitting and assessment.

18. (a) Discuss in detail about RGP CL materials and their properties.

Or

(b) Explain contact lens fitting norms in corneal Ectasias.

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C–0390	Sub. Code 91462

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Optometry

BINOCULAR VISION II

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Uses of Atropine Refraction.
2. Define Binocular fusion.
3. Define RAF ruler.
4. What is Bielschowskys Head tilt list?
5. Uses of Maddox wing.
6. Define Anisometropia.
7. Short Notes on Nystagmus.
8. What is Retinal Rivalry?
9. Define cyclophoria.
10. Red and green Goggles.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Paralytic squint.

Or

(b) Explain Hess chart.

12. (a) Diplopia and Evaluation.

Or

(b) Motor imbalance Nystagmus.

13. (a) Non accommodative convergent squint.

Or

(b) Accommodative convergent squint.

14. (a) How we Assess Degree of squint?

Or

(b) Treatment of Amblyopia.

15. (a) Eccentric Fixation.

Or

(b) Ocular Motility Assessment.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Binocular single vision grading and Abnormalities.

Or

(b) Investigation of strabismus.

17. (a) Usages of Prism Bar.

Or

(b) Uses of Synaptophore.

18. (a) Explain Paralytic squint.

Or

(b) Vision therapy in orthoptic management.

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