

C-4780

Sub. Code

91412

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Optometry

GENERAL ANATOMY AND PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Alveoli?
2. Placenta
3. Surfactant
4. Foramen Magnum
5. Agglutination
6. Neuromuscular junction
7. Synovial fluid
8. Pancreatic juice
9. What is reflex arc?
10. Goblet cells

Part B

(5 × 5 = 25)

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

11. (a) Explain pituitary gland and the functions of hormones it secretes.

Or

- (b) Composition of blood.

12. (a) Hearing mechanism.

Or

- (b) Write a note on Glomerular Filtration Rate (GFR)

13. (a) Blood Grouping System

Or

- (b) Write in detail about skeletal and smooth muscles.

14. (a) Myasthenia gravis.

Or

- (b) Draw a labelled diagram of kidney and describe the functions of kidney.

15. (a) Endometrial cycle.

Or

- (b) Spermatogenesis

Part C

(3 × 10 = 30)

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

16. (a) What is endocrine system? Explain the glands and functions.

Or

- (b) Write in detail about movable and immovable bones of the skull.

17. (a) Female reproductive system.

Or

- (b) Autonomic Nervous system.

18. (a) Describe the anatomy of human brain.

Or

- (b) Mechanism of respiration.

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Sub. Code

91413

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Optometry

GENERAL AND OCULAR BIOCHEMISTRY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Mutarotation
2. Define Coenzyme
3. Draw the structure of keratan sulphate
4. Name the ketone bodies
5. Name the layers of tear film
6. Nyctalopia
7. Define diabetic cataract
8. Write the Interpretation of urine sugar.
9. What is the immunoglobulin present in tear film?
10. Define Atherosclerosis.

Part B

(5 × 5 = 25)

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

11. (a) Glycolysis.

Or

(b) Explain clotting time.

12. (a) Biochemical composition of lens.

Or

(b) Michael menton's equation and its importance.

13. (a) Classify Lipids.

Or

(b) Write the abnormalities of aqueous humor in contact lens wearer.

14. (a) Write about the properties and function of proteins.

Or

(b) Diabetes Mellitus types and management.

15. (a) Role of Retinol in vision.

Or

(b) Write the estimation of serum cholesterol.

Part C

(3 × 10 = 30)

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

16. (a) Write the different classifications of Aminoacids.

Or

(b) Add a detailed note on B-oxidation of fatty acids.

17. (a) Write in detail about the biochemical composition of the cornea.

Or

(b) Add a note on disease manifestations and biological function of fatsoluble vitamins.

18. (a) Write in detail about the Krebs cycle with its energetics.

Or

(b) Brief about the estimation of blood sugar and urine sugar.

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Sub. Code

91414

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Optometry

GEOMETRICAL OPTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define wavefront.
2. Define critical angle.
3. List the properties of light.
4. Draw diagram to show spherical abberation.
5. Give the formula to calculate the power of equivalent lens placed in contact.
6. Mention the laws of reflection and refraction.
7. Explain principle of optical fibre.
8. Define first focal point.
9. What are sign convention.
10. Define wavelength.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write note on Geometrical and optical path length with an example.

Or

- (b) Explain concept of Wavefront and Rays.

12. (a) Write note on different types of prism.

Or

- (b) Derive lens makers formula.

13. (a) Write in detail about chromatic aberration with diagram.

Or

- (b) Write note on axial magnification.

14. (a) Discuss Snells law.

Or

- (b) Explain refraction by concave spherical surface.

15. (a) Explain matrix theory.

Or

- (b) Derive law of reflection using Fermat's principle.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about refraction by plane parallel glass slab.

Or

- (b) Derive vergence equation.

17. (a) Write note on cardinal points and planes.

Or

- (b) Write in detail about Abberation and its types.

18. (a) Write in detail about optical fibers and its uses.

Or

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

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Sub. Code

91415

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Optometry

NUTRITION

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Nitrogen balance
2. Sources of Vitamin C
3. Name 2 MUFA and 2 PUFA
4. Anthropometry
5. Energy value of food
6. Name few non essential amino acids
7. Draw Wald's visual cycle
8. Any four functions of Potassium
9. Forms of Vitamin D
10. Pellagra.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write about Vitamin E.

Or

- (b) Explain Diet planning for lactating mothers.

12. (a) Write about Iron as a mineral.

Or

- (b) Write about Lipids function and classification.

13. (a) Write in detail about megaloblastic anaemia

Or

- (b) Explain the functions and sources of proteins.

14. (a) Write about Energy and its units.

Or

- (b) Write about Recommended dietary Allowances.

15. (a) Write about Energy Balance.

Or

- (b) Write about Amino acids, complete and incomplete proteins.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write about Food groups in detail.

Or

- (b) Explain Protein energy malnutrition.

17. (a) Write about Energy expenditure.

Or

(b) Explain the water soluble vitamins

18. (a) Write about atherosclerosis and its ocular complications.

Or

(b) Write about Vitamin D and K

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91416

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Optometry

COMPUTERS

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is a computer?
2. Identify four categories of computer hardware.
3. Define bit and byte.
4. What are 1's and 2's complement?
5. List the primary function of operating system.
6. How can you change the desktop wall paper?
7. Write the uses of MS-word.
8. What is Undo and Redo?
9. Write any two Web browser.
10. What can a virus do?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Draw and explain the block diagram of PC.

Or

- (b) Explain a few of the different ways in which computer can be categorized.

12. (a) Write the difference between data and information.

Or

- (b) How does computer represent data?

13. (a) Briefly explain the types of operating system.

Or

- (b) Write a note on desktop icons.

14. (a) Discuss about the different options available in word for formatting paragraphs.

Or

- (b) Write the features of MS-Excel.

15. (a) Discuss the basic concepts of Internet.

Or

- (b) Give a brief on the prevention of virus infection.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) List the peripheral devices of PC and explain any two.

Or

- (b) Perform the following :

- (i) 451_{10} to Binary
- (ii) 11101_2 to Decimal
- (iii) 512_8 to Binary
- (iv) $110110_2 + 100110_2$
- (v) $1101_2 - 1100_2$

17. (a) Explain about windows and its components.

Or

- (b) What is Mail Merge? Explain.

18. (a) Explain custom animation and slide Transition in power point.

Or

- (b) Discuss in detail on sending and receiving email.

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91422

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Optometry

OCULAR ANATOMY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Caruncle
2. Apertures of sclera
3. Dimensions Optic nerve.
4. Types of zonules.
5. Nerve supply of cornea.
6. Tracts of vitreous.
7. Sphincter pupillae muscles.
8. Parts of conjunctive.
9. Glands of Manz.
10. Radius of curvature of cornea (anterior and posterior).

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write about anatomy of vitreous.
Or
(b) Explain anatomy of lacrimal gland.
12. (a) Write about sclera.
Or
(b) Write about anatomy of conjunctiva.
13. (a) Write in detail about photoreceptors.
Or
(b) Explain Base of the orbit.
14. (a) Write about anatomy of choroid.
Or
(b) Explain nerve arrangement of retina.
15. (a) Write about Trochlear nerve.
Or
(b) Write about ciliary muscles.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Write about anatomy of visual pathway.
Or
(b) Explain blood supply of uvea.

17. (a) Write about anatomy of cornea.

Or

(b) Explain the walls of the orbit.

18. (a) Write about the structure of eyelids.

Or

(b) Explain Extra ocular muscles.

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91423

B.Sc., DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Optometry

OCULAR PHYSIOLOGY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Far point
2. Polyopia
3. Layers of cornea
4. What is Hering's law?
5. What is presbyopia?
6. What is Cataractogenesis?
7. Mention the Theories of colour vision.
8. What is Friedenwald nomogram?
9. What is consensual light reflex?
10. What are the 3 classes of cone pigments?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write a note on functions of aqueous humor.

Or

- (b) Function of tears.

12. (a) Explain physiology of optic nerve and optic atrophy.

Or

- (b) Blood ocular barrier.

13. (a) Gullstrand mechanical model of accommodation.

Or

- (b) Types of colour vision defects.

14. (a) Write a note on visual acuity.

Or

- (b) Contrast sensitivity.

15. (a) Advantages of binocular vision and Hopter.

Or

- (b) ERG and EOG.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write in detail about factors affecting corneal transparency.

Or

- (b) Physiology and function of vitreous humor.

17. (a) Tear film dynamics.

Or

- (b) Monocular and binocular eye movements.

18. (a) Pupillary light reflex.

Or

- (b) Factors influencing IOP and measurement of IOP.

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91424

B.Sc., DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Optometry

PHYSICAL OPTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is simple harmonic motion?
2. State Hygen's law of reflection.
3. What is coherence?
4. Define Newton's ring's.
5. Define diffraction.
6. State Rayleigh's Criterion.
7. What is plane polarized light?
8. What is plane of Vibration?
9. What is the use of wave plate?
10. Write the range of visible and ultraviolet spectrum.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) State and explain the Law of reflection at a plane surface.

Or

- (b) Explain in brief wave velocity and group velocity.

12. (a) Explain the working of Fresnel's biprism.

Or

- (b) Write a short note on thin film anti reflection coating.

13. (a) Write in brief resolution of circular aperture.

Or

- (b) Explain with a neat diagram the diffraction due to single slit.

14. (a) Write a short on Nicol prism act as a polarizer.

Or

- (b) Explain with a neat diagram the working of quarter wave plate.

15. (a) Explain in brief the construction and working of sodium vapour lamp.

Or

- (b) Give a brief account on infrared spectrum.

Part C $(3 \times 10 = 30)$ Answer **all** questions.

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

Or

- (b) How to determine the velocity of light explain with anyone method?

17. (a) Give the theory of diffraction due to double slit.

Or

- (b) Explain with neat diagram production of circular and elliptical polarized light.

18. (a) Explain in detail the principle and characterization of LASER.

Or

- (b) Give a brief account on resolution of optometric instruments.

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91425

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Optometry

MICROBIOLOGY AND PATHOLOGY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define negative staining.
2. Define Mantoux test.
3. Give two examples of transport media.
4. What is pasturisation?
5. Name any three methods of dry heat sterilization.
6. Name two bacteria causing food poison.
7. Write any two treatment of pseudohumors.
8. What is a Style?
9. What is Anaphylaxis?
10. Define Mycology.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write the procedure of potassium hydroxide mount.

Or

- (b) Write about the ocular lesion of negative bacilli.

12. (a) Write a short note on ocular virology.

Or

- (b) Write a note on Type II Hypersensitivity.

13. (a) What is vascular all component? Explain.

Or

- (b) Write short notes on Lacrimal gland tumors.

14. (a) Write about the structure and functions of immunoglobulins.

Or

- (b) Brief about pathology of cataract.

15. (a) Differentiate between sterilization and disinfection.

Or

- (b) Write the procedure of corneal scraping.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Brief about the clinical importance, diagnosis and treatment of ocular parasites.

Or

- (b) Write a detailed note on culture media.

17. (a) What is a Tissue injury add a detailed note on Tissue inflammatory pathway.

Or

- (b) Write about the clinical importance, diagnosis and treatment of Mycobacteria.

18. (a) Write a detailed note on Ritinoblastoma

Or

- (b) What is microscopy explain.
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91432

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Third Semester

Optometry

VISUAL OPTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Magnification?
2. Define Anisometropia.
3. Uses of Pinhole.
4. Uses of Cross Cylinder.
5. Far point of the eye.
6. Identification of spherical lens and its power.
7. Angle alpha - define.
8. Facultative Hypermetropia.
9. Refractive index of the crystalline lens.
10. Binocular refraction.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write about cardinal points of the eye.
Or
(b) Brief on the growth of the eye in relation to refractive errors.
12. (a) Components of optical system.
Or
(b) Factors affecting visual acuity.
13. (a) Presbyopia in detail.
Or
(b) Components of Hypermetropia.
14. (a) Mechanism of Accommodation.
Or
(b) Scientific estimation of NV add.
15. (a) Measurement of Corneal thickness.
Or
(b) Uses of prism in ophthalmology.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Briefly on the relationship between ocular refraction and spectacle refraction.
Or
(b) Optics, types, clinical features and management of astigmatism.

17. (a) Principle and techniques of retinoscopy.

Or

(b) AC/A and anomalies of accommodation.

18. (a) Contrast sensitivity in detail.

Or

(b) Subjective methods of refraction in detail.

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91433

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Optometry

OCULAR DISEASE - I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Trachoma?
2. Mention some types of allergic conjunctivitis.
3. What is Descemetocoele?
4. Blue sclera.
5. Arcus senilis.
6. Blood supply to the uveal tract.
7. Transparency of crystalline lens.
8. What is lenticonus?
9. Explain symblepharon.
10. Ocular hypertension.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Peripheral Iridectomy.

Or

(b) Formation of aqueous humor.

12. (a) Congenital anomalies of lens.

Or

(b) Tumours of iris.

13. (a) Eviseration.

Or

(b) Congenital coloboma.

14. (a) Staphylomas.

Or

(b) Photo ophthalmia..

15. (a) Enophthalmos.

Or

(b) Trichiasis.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Trabeculectomy.

Or

(b) Primary open angle glaucoma.

17. (a) Senile cataract,

Or

(b) Anterior uveitis.

18. (a) Anatomy of sclera.

Or

(b) Keratoconus.

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91434

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Optometry

OPTOMETRIC INSTRUMENTS – I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Principle of Retino Scopy.
2. Write on Sclerotic Scatter in Slit Lamp illumination.
3. Principle of Applanation Tonometer.
4. Draw optical system of Bausch and Lomb Keratometer.
5. Write on Nagel's anamalo scope.
6. Principle of compound microscope.
7. Mention any two uses of Spectrometer.
8. Define Visual activity.
9. Mention any two visual activity charts for pre-school Childrens.
10. Principle of ultrasonic pachymeter.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe in detail about Pupillometer.
Or
(b) Direct Ophthalmoscope.
12. (a) Write about compound microscope.
Or
(b) Elaborate the adjustments of retinoscope.
13. (a) Write on filters for ophthalmoscopy and its uses.
Or
(b) Describe illumination system in Slit Lamp.
14. (a) Write in detail about Applanation tonometer.
Or
(b) Pentacam.
15. (a) Explain about vision testing in infants.
Or
(b) Write about vision analyzer.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Corneal topography.
Or
(b) Potential Activity Meter.

17. (a) Indirect Ophthalmoscope.

Or

(b) Auto refracto meters.

18. (a) Various types of Visual Activity Charts.

Or

(b) Objective Optometers.

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91435

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Optometry

GENERAL AND OCULAR PHARMACOLOGY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Mention any four naturally occurring drugs.
2. What is liver first pass mechanism?.
3. Name any four anatomical classification of drug.
4. How do you find therapeutic index of a drug?
5. Draw a neat diagram of synopsis.
6. Mention any two hypnotic drugs and their function.
7. Write short notes on presynaptic vesicles.
8. Mention the indirect acting anticholinergic drugs.
9. Discuss briefly on any two abnormalities of ophthalmic diagnostic drugs.
10. Write the types of drug drops used to ocular system.

Part B

(5 × 5 = 25)

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

11. (a) Write the ocular route of drug administration

Or

- (b) Explain the factors influencing drug distribution.

12. (a) What is a Lead drug? How do you find a new drug?

Or

- (b) Describe the ADR in man.

13. (a) Explain on the therapeutic uses of convulsive drug.

Or

- (b) Mention the mode of action and therapeutic uses of NSAID.

14. (a) Elaborate the types and mechanism of action of cholinergic drugs.

Or

- (b) Explain the adrenergic antagonist.

15. (a) Discuss on the penetration enhancers used in ophthalmic drug.

Or

- (b) Explain the viscoelastic agents.

Part C

(3 × 10 = 30)

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

16. (a) Elaborate the metabolism of drug.

Or

- (b) Write the types and mechanisms of drug receptor.

17. (a) Describe the classification and functions of anesthetics.

Or

- (b) Discuss in detail on mode of action and therapeutic uses of adrenergic drugs.

18. (a) Elaborate on antiglaucomic drugs.

Or

- (b) Write an essay on antibiotics used to treat ocular diseases.

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91436

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Optometry

CLINICAL EXAMINATION OF VISUAL SYSTEM

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Marcuss gun jaw winking
2. Lea symbols
3. Radical retinoscopy
4. Hoffstetters formula - Average AA
5. Calculated AC/A ratio
6. NRA test and normal value
7. Use of accommodative flippers
8. Uses of conical beam
9. HVID
10. Uses of measuring IPD

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Birth history

Or

(b) Headache history

12. (a) Evaluation of Tear film

Or

(b) Ishihara colour vision chart

13. (a) Techniques to find the cylinder axis in Retinoscopy.

Or

(b) Discuss the uses of Dynamic retinoscopy.

14. (a) Discuss about improving ergonomics in Optometrists clinical setup.

Or

(b) What is visual task analysis and how is it done?

15. (a) Using astigmatic dials to refine stigmatism.

Or

(b) List the different tests for measuring the squint.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss about History taking in squint and Ptosis.

Or

(b) Write in detail about motor tests in optometry workup.

17. (a) Discuss in detail about pupillary evaluation.

Or

(b) Discuss in detail about tests for stereopsis

18. (a) List the tests for finding NSBVA and explain each of them.

Or

(b) How important is measurement of accommodation in asthenopic patients. Discuss in detail

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91442

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fourth Semester

Optometry

OPTOMETRIC OPTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Refraction.
2. Define apical angle, apex and base of the prism.
3. What is effective power?
4. Transpose the following -4.00 Dsph/ -4.00 Dcyl x 180 to two cylinder format.
5. Explain drop ball test.
6. What is difference between blank and semi - finished blank?
7. What is difference between split bifocal and executive bifocal?
8. What is high index lenses?
9. What is mirror coating and gradient tint?
10. What is dip method of hard coating?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) What are Fresnel prism and Fresnel lenses? Explain the uses of Fresnel prism in ophthalmic practice.

Or

- (b) Describe different form of lenses.
12. (a) Calculate the effective power for spectacle lenses to be fitted at a vertex distance of 15mm and refraction carried out in patient with trial frame distance at 11 mm and having a refractive error of -6.00 Dsph/- 3.00 Dcyl × 90.

Or

- (b) Find out the surface power to be generated on front and back surface of ophthalmic lenses having resultant power as - 5.00 Dsph/ -2.00 Dcyl × 90 and base curve being 5.
13. (a) Explain different characteristics of ophthalmic lenses.

Or

- (b) Explain aberration of ophthalmic lenses.
14. (a) What are trifocal lenses? Explain different type of trifocal lenses and difference between trifocal and occupational trifocal lenses.

Or

- (b) What are occupational lenses? Explain different types of occupational lenses.
15. (a) What are hard coatings? Explain different methods of hard coating.

Or

- (b) Explain the process of glazing.

Part C $(3 \times 10 = 30)$ Answer **all** questions.

16. (a) What is AR coating? Explain principle, construction, type and use of AR coating.

Or

- (b) What are PALs? Explain different types of design and dispensing procedure of PALs.

17. (a) What is surfacing? Explain the process of surfacing and faults occurring during surfacing.

Or

- (b) What are blanks, semi-finished blanks and finished single vision lenses? Explain different types of faults occurring while surfacing and the methods to encounter the faults.

18. (a) What is bifocal lens? Explain construction of bifocal lenses and advantages of bifocal lenses.

Or

- (b) What are advantages, disadvantage of progressive lenses? Draw and explain different parts on progressive lenses.
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91443

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fourth Semester

Optometry

OCULAR DISEASES – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Wolfram syndrome
2. Causes for CRAO
3. Wernicke's hemianopic pupil
4. Nystagmoid movements
5. Icepack test
6. Synchysis scintillans
7. Saccadic movements
8. Causes of hamarlopia
9. Triad of Retinitis pigmentosa
10. Pathological myopia

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write about Hypertensive Retinopathy.

Or

(b) Explain Demyelinating neuritis.

12. (a) Write about Rhegmatogenous RD.

Or

(b) Write about Light-Near dissociation.

13. (a) Write in detail about Pituitary adenoma.

Or

(b) Explain IV CN diseases.

14. (a) Write about BRVO.

Or

(b) Explain Myotonic dystrophy.

15. (a) Write about evaluation of Optic nerve diseases.

Or

(b) Write about evaluation of Color Vision.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write about Retinitis pigmentosa.

Or

(b) Explain ARMD and its types.

17. (a) Write about Pappiloedema and its stages.

Or

(b) Explain Myasthenia Gravis.

18. (a) Write about Visual field Defects in detail.

Or

(b) Explain nystagmus and its types.

C-1742

Sub. Code

91444

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fourth Semester

Optometry

OPTOMETRIC INSTRUMENTS – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Describe color opponent theory.
2. List the indications for ENG.
3. What is Gain?
4. What is the use of gaze tracker in perimeter?
5. Berman locator.
6. Describe pachymetry principle.
7. Mention the filters available in slitlamp.
8. Give two examples for static perimetry.
9. List the factors that affect visual acuity testing.
10. Draw normal ERG wave.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write note on anterior segment photography.

Or

- (b) Write note on Bjerrum screen.

12. (a) Explain about gonioscopy.

Or

- (b) Write about non contact tonometer.

13. (a) Explain syringing.

Or

- (b) Write note on EOG.

14. (a) Discuss LogMAR chart.

Or

- (b) A scan.

15. (a) Describe ultrasound pachymetry.

Or

- (b) Explain diathermy.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain in detail about applanation tonometry, principle, parts and procedure.

Or

- (b) Discuss about VEP.

17. (a) Write note on interpretation of visual field report.

Or

(b) Write in detail about retinoscopy.

18. (a) Explain the different slitlamp illumination technique.

Or

(b) IDO.

C-4790

Sub. Code

91451

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

CONTACT LENSES-I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Use of papain
2. Any two disinfecting agents
3. Microcysts and vacuoles
4. Papillae and Follicle
5. Uses of sodium fluorescein
6. NITBUT
7. BOZD and PD
8. Oxygen permeability
9. Silicone Hydrogels
10. PMMA and CAB

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Give a brief account of development of contact lenses in the early years.

Or

- (b) Anatomy of tear film with diagram.

12. (a) Explain the manufacturing process of molding.

Or

- (b) Advantages of Lathing technique.

13. (a) List the indirect illumination techniques in slit lamp and its uses.

Or

- (b) Discuss in brief about extended keratometry and the reliability of same.

14. (a) What is the effect that contact lens have upon accommodation in a spectacle wearing myope and a hyperope? Explain with the help of calculations.

Or

- (b) Explain knapps law and its relevance in CL fitting.

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

Or

- (b) Lubricating and Enzymatic cleaners in contact lens solutions.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain in detail about the preclinical evaluation of contact lens patients.

Or

- (b) Explain about corneal physiology elaborately.

17. (a) Discuss about ideal properties of contact lens materials.

Or

- (b) Discuss in detail about RGP CL materials.

18. (a) Write in detail about evaluation of RGP CL fitting.

Or

- (b) Discuss the ocular complications of SCL and the management of same.

C-4791

Sub. Code

91452

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

BINOCULAR VISION – I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Worth four dot test.
2. Explain face turn.
3. What is cyclo deviation?
4. Dynamic retinoscopy.
5. Confusion.
6. What is degree and prism dioptré?
7. Torsional movements.
8. Uses of prism bar.
9. Prism dissociation using colors.
10. Advantages of Binocular vision.

Part B

(5 × 5 = 25)

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

11. (a) Maddox Rod Test.

Or

(b) Bagolini Striated Glass Test.

12. (a) Explain about Relative subjective visual directions.

Or

(b) Explain about Retinal Rivalry.

13. (a) Stereoscopic acuity.

Or

(b) Egocentric Localization.

14. (a) Spasm of Accommodation.

Or

(b) Types of Fixations.

15. (a) Role of Accommodation in Comitant Strabismus.

Or

(b) Explain Asthenopia and Diplopia.

Part C

(3 × 10 = 30)

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

16. (a) Types of monocular cues and its clinical significance.

Or

(b) Types of EOM Blood supply, Nerve supply and innervation.

17. (a) Theories of Binocular vision.

Or

(b) Types of Paralytic Deviation.

18. (a) III Cranial Nerve Palsy.

Or

(b) Measurement of Dissociated vertical deviation.

C-4792

Sub. Code

91453

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

PEDIATRIC AND GERIATRIC OPTOMETRY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Cyclo Deviation.
2. What causes confusion?
3. DVD.
4. Blue dot Cataract.
5. HOTV chart.
6. Near point of Convergence.
7. Presbyopia.
8. LRCS.
9. Aphakia.
10. Duanes Retraction Syndrome Type – II.

Part B

(5 × 5 = 25)

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

11. (a) Types of Convergence.

Or

(b) Cardiff acuity test.

12. (a) Changes of Astigmatism over age.

Or

(b) Management of Cataract in Elderly.

13. (a) Lens selection for elderly.

Or

(b) Lens selection for paediatrics.

14. (a) Pseudo – Myopia.

Or

(b) Glasses vs CL for Refractive Error.

15. (a) Types of Astigmatism.

Or

(b) Latent Hyperopia. Test to assess it.

Part C

(3 × 10 = 30)

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

16. (a) Eyelids – Parts, Pathology and management.

Or

(b) Write about the goals of comprehensive pediatric eye examination.

17. (a) Common pediatric eye diseases and its management.

Or

(b) History taking in pediatrics.

18. (a) EOG.

Or

(b) Explain about Passive therapy of Amblyopia.

C-4793

Sub. Code

91454

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

DISPENSING OPTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define refractive index
2. List any two pliers with its uses
3. Advantages of progressive lenses
4. Name few frame materials
5. Optical centre marking
6. ARC principle.
7. Advantages of high index lenses.
8. What is contrast enhancing filters?
9. Transpose $-7.50 \text{ Ds}/+3.50 \times 110$ into other cylinder and give its spherical equivalent.
10. Trivex - define.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write about aspheric lenses.

Or

(b) Short note on polarizing lenses.

12. (a) What are the categories of frame materials?

Or

(b) Note on history of spectacles.

13. (a) How is a frame selected for a patient based on face shape, face colour?

Or

(b) IPD and its importance.

14. (a) Pantoscopic tilt in detail.

Or

(b) Indications and contra - indications of PAL's.

15. (a) ANSI standards for single vision lenses.

Or

(b) Components of spectacle? And explain each in detail.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Boxing system in detail.

Or

(b) Discuss about toric transposition with an example.

17. (a) Discuss about bifocals and multifocals.

Or

(b) What are the disadvantages of ordinary aphakic glass lens? What are the other options for aphakic patients?

18. (a) Discuss about lens materials.

Or

(b) Explain about

(i) Prentice rule

(ii) Distortions

(iii) IPD

(iv) DBOC.

C-4794

Sub. Code

91455

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

PUBLIC HEALTH AND COMMUNITY OPTOMETRY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Most common causes of global blindness. Any two.
2. Most common causes of blindness in India . Any two.
3. According to WHO, Vision less than _____ is termed as low vision and vision less than _____ is called blindness.
4. Expand RIO and NPCB.
5. Any two objectives of NPCB.
6. Dimensions of Health.
7. Expand MMR and IMR.
8. Comment on Disease trends in 20th century.
9. Any two complications of Obesity.
10. What is Onchocerciasis?

Part B

(5 × 5 = 25)

Answer **all** the questions.

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

Or

- (b) Explain in brief about treatable and preventable blindness with proper examples.

12. (a) Explain in brief about primary level of health care.

Or

- (b) Discuss in brief about Nutritional blindness.

13. (a) How do you manage a 'watery eye'?

Or

- (b) What are the available surgeries for cataract removal? Compare the outcomes of any three.

14. (a) History taking and tentative diagnosis.

Or

- (b) Write notes about school myopia.

15. (a) Roles of a health care worker in eye care.

Or

- (b) Importance of communication in eye care programs.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Importance of tele optometry in our country.

Or

- (b) Screening protocol for glaucoma.

17. (a) Different levels of health care patterns.

Or

(b) Write in detail about cost effectiveness analysis and cost benefit analysis in health economics.

18. (a) Why are diseases like glaucoma or Diabetic retinopathy considered a economical burden on the country? Discuss in detail.

Or

(b) Explain in detail about social and economic impacts caused by a disease like Covid.

C-4795

Sub. Code

91456

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Optometry

BIOSTATISTICS

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Biostatistics.
2. Write crude mortality rate.
3. Mention the types of sampling methods.
4. Define null hypothesis.
5. What are the measures of central tendency?
6. Write the types of correlation.
7. Write the formula of Poisson distribution.
8. Write two applications of binomial distribution.
9. Define hospital statistics.
10. Write any two uses of hospital statistics.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain non probability sampling methods in detail.

Or

- (b) Explain perinatal mortality rate.

12. (a) What is complete enumeration method?

Or

- (b) Explain the types of error in testing of hypothesis.

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

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) In hospital with 200 available beds in June rendered 4600 patient days and had 740 discharged/died patients. Calculate turnover interval rate.

Or

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

Part C

(3 × 10 = 30)

Answer **all** questions.

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

Or

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

Heights (cm)	95-105	105-115	115-125	125-135	135-145
No. of children	20	55	95	70	60

17. (a) Calculate Karl persons 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

Or

- (b) Distinguish between correlation and regression in statistics.

18. (a) Write the characteristics and applications of normal distributions.

Or

- (b) 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

C-1749

Sub. Code

91461

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Sixth Semester

Optometry

CONTACT LENS – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is bounded water content lenses?
2. What is FDA classification of contact lenses?
3. What is pen ballast?
4. What is reference marking?
5. What is lag of contact lenses?
6. What is TACO test?
7. What is Chealating agent?
8. What is role saline in care and maintenance of SCL?
9. What is CLARE?
10. What is CLPU?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write notes on :

- (i) Water content
- (ii) Lonicity
- (iii) Rigidity
- (iv) Flexibility
- (v) Wettability.

Or

(b) Compare the advantages of spectacles over contact lenses.

12. (a) What is reference markings? Explain the prism ballast and truncation.

Or

(b) What is water melon seed principle? Explain chamfering and lo torque technology.

13. (a) What are hybrid lenses and Piggyback lenses?

Or

(b) What is irregular astigmatism? Explain the management of irregular astigmatism with toric rgp lenses?

14. (a) What is monovision? Explain the procedure to find out dominant eye.

Or

(b) What are silicone hydrogel lenses? Explain the pre-fitting evaluation of it.

15. (a) What are prosthetic contact lenses?

Or

(b) What are deposits? Explain protein deposits causes and management.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain care and maintenance of soft Cls.

Or

(b) Explain pre fitting evaluation of toric soft Cls.

17. (a) What is Keratoconus? Explain the types of contact lenses used in management of keratoconus.

Or

(b) What are therapeutic contact lenses? Explain different application of therapeutic Cls.

18. (a) Explain different type of multifocal Cls.

Or

(b) Explain fitting evaluation of toric soft Cls.

C-1750

Sub. Code

91462

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Sixth Semester

Optometry

BINOCULAR VISION – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is haplascopy?
2. What is risley prism?
3. What is direct cover test?
4. What is Hirschberg corneal reflex test? Explain the interpretation with diagram.
5. What is comitant squint?
6. What is AC/A ratio?
7. What is barrel card uses?
8. What are yoke prism?
9. How to evaluate fixation pattern?
10. What is facultative suppression?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) What is Maddox rod? Explain the use of Maddox rod in paralytic squint.

Or

- (b) Explain Maddox wing in detail.

12. (a) What is cover test? Explain different type of cover tests.

Or

- (b) Explain prism bar cover test.

13. (a) Explain the management of type II accommodative esotropia.

Or

- (b) Explain the procedure to find out AC/A ratio.

14. (a) What are the components of head posture? Explain the significance of each component along with head posture in terms of LSR palsy.

Or

- (b) Explain the use of prisms in orthoptics.

15. (a) What is diplopia charting? Explain diplopia charting for RMR palsy.

Or

- (b) Explain Bielschowsky head tilt test with an example.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) What is synoptophore? Explain the principle, diagnostic and therapeutic uses of synoptophore.

Or

- (b) Explain Hess Chart.

17. (a) What is accommodative esotropia? Explain the management and investigation of type – II accommodative esotropia.

Or

- (b) What is amblyopia? Explain clinical features, signs, symptoms and investigation of amblyopia.

18. (a) Explain the management of suppression.

Or

- (b) Explain the management of convergence insufficiency.
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C-1751

Sub. Code

91463

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Sixth Semester

Optometry

LOW VISION AID

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Amsler Grid
2. Magnification of a telemicroscope
3. Projection magnification
4. Effect of glare in low vision patient
5. Two advantages of increasing object size
6. Define field of view of magnifying lens
7. Vergence amplification formula,
8. Changing tube length in telescope to correct myopia – explain.
9. Name few contrast sensitivity charts
10. Advantages of stand magnifier

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write about magnification and its types.

Or

- (b) Explain about LMBB syndrome and its Low vision treatment.

12. (a) Write about Visual acuity assessment in LV patient.

Or

- (b) Write about CCTV in detail

13. (a) Write in detail about Braille system.

Or

- (b) Explain determination of decentration of lenses using different formulae.

14. (a) Write about environmental modification for low vision patient.

Or

- (b) Write the definition and classification of low vision.

15. (a) Write about paediatric low vision care.

Or

- (b) Write about telemicroscopes.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write about Retinitis pigmentosa and its low vision management.

Or

- (b) Explain dispensing and prescribing low vision aids.

17. (a) Write about telescopes and its types.

Or

- (b) Explain the counselling given for low vision patient and their family members.

18. (a) Write about the magnifier and its types.

Or

- (b) Explain integrated system in rehabilitation in low vision services.
-

C-1752

Sub. Code

91464

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Sixth Semester

Optometry

OCCUPATIONAL OPTOMETRY

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define illuminance.
2. Draw any three safety signs.
3. Ionizing radiation
4. Define CVS.
5. What is contrast sensitivity?
6. What is Vossius ring?
7. Mention the details listed in accident record sheet in first aid centre.
8. Define occupational optometry.
9. Mention any four systemic diseases related to biological agents.
10. What is black eye?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write note on advantages to industry of vision screening.

Or

- (b) Write note on eye functions that are involved in detection of object.

12. (a) Explain the ocular effects of electromagnetic radiation.

Or

- (b) Write about CFL, its advantages and disadvantages.

13. (a) Write briefly about the health risk associated with the use of VDU.

Or

- (b) Write note on role of optometrist in occupational optometry.

14. (a) Discuss about contact lens and work.

Or

- (b) Write about factory act.

15. (a) Explain ILO.

Or

- (b) Explain about task analysis.

Part C $(3 \times 10 = 30)$ Answer **all** questions.

16. (a) Explain in detail about modified clinical vision screening technique.

Or

- (b) Discuss about visual performance.

17. (a) Define color vision and briefly explain the theories of color vision.

Or

- (b) Write about vision standards for railways

18. (a) Detail about CVS.

Or

- (b) Write about eye protective devices.
-

C-1753

Sub. Code

91465

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Sixth Semester

Optometry

SYSTEMATIC DISEASE AFFECTING THE EYE

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is chronic inflammation?
2. Define Arterial hypertension.
3. What is grading of cancer?
4. Write any two characteristics of Juvenile arthritis.
5. Define Ketoacidosis.
6. What is nyctalopia?
7. What is hypothyroidism?
8. What is Mantoux Tuberculin test?
9. Write any two complications of multiple sclerosis.
10. What is Border line leprosy?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Write short notes on grading and stages of cancer.
- Or
- (b) Explain Heart Embolism.
12. (a) Short notes on Malaria.
- Or
- (b) Short notes on Syphilis.
13. (a) Write about differential diagnosis for Papilloedema.
- Or
- (b) Write about congenital glaucoma.
14. (a) Write short notes on pulmonary tuberculosis.
- Or
- (b) Brief about Vitamin E deficiency.
15. (a) Write about any two types of Arthritis.
- Or
- (b) Explain multiple sclerosis.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Write in detail about the classification, diagnosis and management of thyroid diseases affecting the eye.
- Or
- (b) Explain about the heart disease affecting the eye.

17. (a) Write a detailed note on visual pathway lesions.

Or

(b) Explain about the pathophysiology, diagnosis, complications and treatment of diabetes.

18. (a) Brief about the demyelinating disease.

Or

(b) Add a detailed note on neoplasms.
