

**CP-9310**

**Sub. Code**

**91412**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**GENERAL ANATOMY AND PHYSIOLOGY**

**(2016 onwards)**

Time : 3 Hours

Maximum :75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define immunity and its types.
2. Define blood pressure.
3. Name the female sex organs.
4. What is covering of lungs and abdomen and its types?
5. Give two examples of ball and socket joint.
6. Name sympathetic hormones.
7. Define pulse.
8. Types of muscles.
9. Name the functional unit of brain and lungs.
10. Name the salivary glands.

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Functions of saliva.

Or

(b) Functions of plasma.

12. (a) CSF.

Or

(b) Anatomy of stomach.

13. (a) Structure of neuron.

Or

(b) Draw structure of kidney and name it.

14. (a) Types of joints.

Or

(b) Bone of skull.

15. (a) Anatomy of spleen.

Or

(b) Anatomy of lungs.

**Part C****(3 × 10 = 30)**

Essay question of either or choice.

16. (a) Anatomy of pancreas, structure and functions.

Or

(b) Anatomy of brain.

17. (a) Anatomy of heart, its blood supply and function.

Or

(b) Lung volumes and capacity.

18. (a) Anatomy of respiratory system.

Or

(b) Hormones of the pituitary gland.

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<b>CP-9311</b>
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<b>Sub. Code</b>
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<b>91413</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**GENERAL AND OCULAR BIOCHEMISTRY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Stereoisomerism.
2. Glycoprotein.
3. Active site.
4. Tears.
5. Polypeptide.
6. Night blindness.
7. Transamination.
8. Define hyper vitaminosis.
9. Define co-enzyme
10. What is hyperlipidemia?

**Part B**

(5 × 5 = 25)

Brief answer with either or type.

11. (a) Essential and Non-Essential amino acids.

Or

- (b) Explain classification of amino acids.

12. (a) Classification of immunoglobulins.

Or

- (b) Write about Ketone bodies.

13. (a) Classification of enzyme.

Or

- (b) Write about properties of monosaccharides.

14. (a) Biochemical functions of Cornea and lens.

Or

- (b) Explain about hypercholesterolemia.

15. (a) Classification of lipids.

Or

- (b) Classify complex polysaccharides and draw its structure.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) Classification of structure of protein.

Or

- (b) Write about TCA cycle.

17. (a) How monosaccharide are classified depending upon number of carbon atom?

Or

(b) Define sources, functions and deficiency manifestation of vitamin A.

18. (a) Classification of blood grouping.

Or

(b) Clinical importance of enzymes.

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<b>CP-9312</b>
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<b>Sub. Code</b>
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<b>91414</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018.**

**First Semester**

**Optometry**

**GEOMETRICAL OPTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define divergence.
2. Define diopetre.
3. Define light.
4. Define dispersive power.
5. Define frequency of light.
6. Define wavefront.
7. Define Magnification.
8. Define fermat's principle.
9. Define refractive index.
10. Mention any 4 uses of optical fibres.

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

11. (a) Write about dual nature of light.

Or

- (b) Write about spherical and chromatic aberrations with diagram.

12. (a) Write about Total Internal Reflection.

Or

- (b) Write about geometrical path length and optical path length with numerical example.

13. (a) Derive Vergence Equation.

Or

- (b) Write about refractive index and give few examples.

14. (a) Write about Axial magnification

Or

- (b) Write about types of lenses.

15. (a) Write about Snell's Law.

Or

- (b) Write about sign convention in lenses.



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

16. (a) Derive law of refraction at a plane surface using fermat's principle.

Or

- (b) Derive Lens maker Formula.

17. (a) Explain the geometrical theory of optical fibers.

Or

- (b) Derive relationship between U, V, R for refraction at convex surface.

18. (a) Explain the refraction by plane parallel slab of glass.

Or

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

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<b>CP-9313</b>
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<b>Sub. Code</b>
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<b>91415</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**NUTRITION**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Name two monosaccharides.
2. Name water soluble vitamins.
3. Give nutritional classification of food.
4. Give two examples of source of Iron.
5. Name two dietary sources of Calcium.
6. Name the essential amino acids.
7. What is xerophthalmia?
8. What is goitre? How will you prevent goiter?
9. What is pellagra?
10. What is megaloblastic anemia?

**Part B**

(5 × 5 = 25)

Answer **all** questions. Brief answer with a Either or choice.

11. (a) Vitamin BComplex.

Or

(b) Vitamin D.

12. (a) Antioxidants.

Or

(b) Nutritional requirement for an Infant.

13. (a) Fibres in diet.

Or

(b) Body mass index and interpretations.

14. (a) Cereals.

Or

(b) Starvation.

15. (a) Nutritive value of food on cooking .

Or

(b) Nitrogen balance.

**Part C**

(3 × 10 = 30)

Answer **all** questions Essays.

16. (a) Protein Energy malnutrition.

Or

(b) Vitamin A deficiency.

17. (a) Diet menu for pregnant mothers.

Or

(b) Diet plan for renal patients.

18. (a) Give an account on sources, kinds and functions of proteins.

Or

(b) Obesity.

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<b>CP-9314</b>
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<b>Sub. Code</b>
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<b>91416</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018****First Semester****Optometry****COMPUTERS****(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are the major functions of a Computer?
2. Expand MICR and OMR.
3. Convert the binary number 1011.11011 into decimal.
4. Perform the arithmetic operation :  
1011.101 – 101.011
5. Classify the software.
6. Is it possible to rename a file? If yes, how?
7. Differentiate between copying text with pasting text.
8. How can you change the width of a column in a worksheet?
9. What are the possible ways available to get a internet connection?
10. What is the structure of an email address?

**Part B**

(5 × 5 = 25)

Brief answer with either or choice.

11. (a) Describe the functions of any two input devices.

Or

- (b) What is CPV and explain how it works.

12. (a) Explain the octal number system.

Or

- (b) Write about Excess Three Code.

13. (a) What are the steps to open the following accessories and their uses :

(i) Notepad

(ii) Paint.

Or

- (b) Describe the functions of an Operating System.

14. (a) Describe the different ways to edit a cell.

Or

- (b) Briefly explain how will you search for a particular word in the document and replace it with a new word.

15. (a) How can you compose a mail?

Or

- (b) Describe the different types of viruses.

**Part C**

(3 × 10 = 30)

Essay question of either or choice.

16. (a) Draw the block diagram of a computer and explain.

Or

- (b) (i) Perform the following arithmetic operation using 2's complement method :

$$3174 - 729$$

- (ii) Evaluate :  $(111.101) \times (10101.101)$ .

17. (a) Write about :

- (i) My Computer  
(ii) Recycle bin.

Or

- (b) How can you customize the presentation? Explain.

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

Or

- (b) Explain the procedure to convert a binary number to octal number through an examples.

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**CP-9315**

**Sub. Code**

**91422**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**OCULAR ANATOMY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Name the Extraocular muscles.
2. What is intraorbital and extraorbital width?
3. Write down the nerve supply for LPS and Orbicularis Oculi.
4. Write down the dimensions of Optic Canal.
5. Shaffer's grading.
6. What is Bergmeister Papilla?
7. Spiral of Tillaux.
8. Name the longest and shortest EOM.
9. Name the microscopic layers of Eyelids.
10. What is polymegathism?



**Part B**

(5 × 5 = 25)

Brief answer with either or choice.

11. (a) Draw the microscopic structure of retina.

Or

- (b) Write about the contents of the orbit.

12. (a) Anatomy of IV Cranial Nerve.

Or

- (b) Anatomy of ciliary zonules and its arrangement.

13. (a) Anatomy of Vitreous.

Or

- (b) Anatomy of Choroid.

14. (a) Anatomy of Lacrimal Gland.

Or

- (b) Anatomy of sclera and its apertures.

15. (a) Anatomy of Crystalline Lens.

Or

- (b) Anatomy of Conjunctiva.

**Part C**

(3 × 10 = 30)

Essay question of either or choice.

16. (a) Microscopic structure of Iris.

Or

- (b) Anatomy of lacrimal Passage.

17. (a) Anatomy of the angle of anterior chamber.

Or

(b) Explain Light reflex pathway.

18. (a) Microscopic structure of Cornea.

Or

(b) Nerve fibre arrangement in the various parts of visual pathway

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**CP-9316**

**Sub. Code**

**91423**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**OCULAR PHYSIOLOGY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. List out the layers of cornea.
2. List out the factors responsible for corneal transparency.
3. Write down the pathway of aqueous formation, regulation and excretion.
4. What is arc of contact?
5. What is muscle plane?
6. Differentiate between versions and vergence.
7. What are saccadic eye movements?
8. What is isocoria?
9. What is MAR?
10. List out the indication of VEP & ERG.

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Explain Maurice and Goldman's theory.

Or

- (b) Explain the pathogenesis of cataract.

12. (a) Write about blood aqueous barrier.

Or

- (b) Write about tear dynamics and tear film break up time.

13. (a) Explain Herring's law and Sherring's law

Or

- (b) Tabulate EOM action, nerve supply, blood supply and course of insertion into sclera.

14. (a) Explain the mechanism of accommodation and changes taking place during accommodation.

Or

- (b) Explain different type of color defects.

15. (a) Explain the components of visual acuity.

Or

- (b) Explain the mechanism of dark adaptation.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) What is IOP? Explain the factors influencing IOP and how to measure IOP with Schiottz tonometer.

Or

- (b) What is pupil? Explain afferent pathway defects of pupil.

17. (a) What is contrast sensitivity? Explain different types of contrast sensitivity test.

Or

- (b) Explain ERG EOG and VER.

18. (a) Explain grades of BSV.

Or

- (b) Explain different types of movements of the eye.

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<b>CP-9317</b>
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<b>Sub. Code</b>
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<b>91424</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**PHYSICAL OPTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define group velocity.
2. What is meant by reflection?
3. What are the conditions necessary for observing interference fringes?
4. Define path difference.
5. Define transmission grating.
6. Which is called ultra microscope? why?
7. What is polarization?
8. State Brewster's law.
9. What is pumping?
10. What is meant by holography?

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) State and explain the laws of refraction on a plane surface.

Or

- (b) Describe the Huygen's wave theory.

12. (a) Discuss the relation between coherence length and bandwidth.

Or

- (b) Explain lateral displacement of fringes in double slit experiment.

13. (a) Write notes on Rowland mounting.

Or

- (b) Distinguish between dispersive and resolving power of a grating.

14. (a) Write the applications of Brewsters law.

Or

- (b) Give short notes on law of Malus.

15. (a) How a hologram is different from a photograph?

Or

- (b) Explain with neat diagram of stimulated emission of radiation.

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

Essay questions of either or choice.

16. (a) Describe the modern method for measuring the velocity of light.

Or

- (b) Give the theory of diffraction due to double slit.
17. (a) Explain in detail theory of plane transmission grating.

Or

- (b) Discuss in detail the working principle of microscopes.
18. (a) Discuss the working, construction and applications of semiconductor laser.

Or

- (b) Write a note on : Thin film antireflection coatings and filters.
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<b>CP-9318</b>
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<b>Sub. Code</b>
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<b>91425</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**MICROBIOLOGY AND PATHOLOGY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is a hordeolum and its types?
2. Name any two culture media.
3. Name any two ocular lesions caused by parasites.
4. Define an inflammation.
5. Define carcinoma with examples.
6. Mention any two disease caused in the eyelid.
7. Mention the steps involved in the acid fast staining.
8. What is a cellular component?
9. Name two organism in the normal ocular flora.
10. Define resistance strain activity.

**Part B**

(5 × 5 = 25)

Brief answer with either or choice.

11. (a) Write a short note on ocular lesion and treatment of *Corynebacterium diphtheriae*.

Or

- (b) Write short notes on potassium hydroxide mount.

12. (a) Brief about anaphylaxis.

Or

- (b) Give the signs and symptoms of keratoconjunctivitis and its management

13. (a) Define tumor and write a short note on lacrimal gland tumor.

Or

- (b) Write short notes on dry heat sterilization.

14. (a) Write a short note on gram negative cocci.

Or

- (b) Write a short note on general immune system and defense mechanism.

15. (a) Define healing and the role of vascular component.

Or

- (b) Brief about the disease manifestations and treatment of mycobacterium species.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) Write a detail note on uveitis and its management

Or

- (b) Explain about the tissue injury and the inflammation pathway.

17. (a) Explain the procedure of corneal scraping and conjunctival swab.

Or

- (b) Brief about the disease manifestation and treatment of spirochetes.

18. (a) Write a detail note on common virus clinical importance, ocular lesions diagnosis and treatment.

Or

- (b) Give an account of the mechanism of type II and type III hypersensitivity reaction.

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<b>Sub. Code</b>
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<b>91432</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**VISUAL OPTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are the optical constants of the eye?
2. Draw Schematic eye and mark cardinal points, nodal point and anterior focal point.
3. List out optical components of the eye along with the dioptrical power and refractive index.
4. What is far point?
5. What is dynamic refraction of the eye?
6. What is the amplitude of accommodation?
7. Give the formula to find spectacle refraction.
8. Give the spherical equivalent of JCC.
9. What is coma aberration?
10. What is Newton's prism?

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Draw and explain schematic eye and their advantages.

Or

- (b) What is keratometry? Explain the procedure and the significance of keratometry in ametropias.

12. (a) Explain Schiener's disc experiment.

Or

- (b) Find out the minimum, mean and maximum amplitude of accommodation for (i) 40 yrs (ii) 50 yrs (iii) 55 yrs (iv) 60 yrs.

13. (a) A prescription reads -10.00 Dsph at 16 mm. The final lens is to be fitted at a vertex distance of 12 mm. What is the power of the final lens?

Or

- (b) A reduced surface with refractive hypermetropia has an ocular refraction of +7.00 Dsph. Find the spectacle refraction at 13 mm and the focal length of the reduced surface.

14. (a) Explain binocular prism balancing techniques.

Or

- (b) Explain dissociated Duochrome test.

15. (a) Explain the aberration of the eye.

Or

- (b) Find out prismatic effect in a lens placed before right eye decentered 4 mm downwards and 3 mm nasally having a power of +4.00 Dsph/+2.00Dcyl × 180.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) What is myopia? Explain different types of myopia and management of myopia.

Or

- (b) What is astigmatism? Explain different types of astigmatism and management of astigmatism.

17. (a) What is presbyopia? Explain different types of presbyopia and management of presbyopia.

Or

- (b) Explain the procedure of retinoscopy and different techniques of retinoscopy.

18. (a) What is Aphakia? Explain sign, symptoms and management of Aphakia?

Or

- (b) Explain the axis and angles of the eye along with diagram.
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<b>CP-9320</b>
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<b>Sub. Code</b>
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<b>91433</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**OCULAR DISEASES — I**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What is Blepharophimosis syndrome?
2. Grading of AC cells.
3. What is madarosis? List out the causes for madarosis.
4. What is Aniridia?
5. Differentiate subluxation and dislocation of lens.
6. Tabulate Shaffer's grading.
7. What is Arcus Senilis?
8. What is cryptophthalmos?
9. What is TORCH test? Why is it done?
10. What is posterior Embryotoxon?

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Write about Congenital cataract.

Or

- (b) Explain Buphthalmos.

12. (a) Explain about Blunt injuries of eye.

Or

- (b) Write about Iris melanoma.

13. (a) Write notes on staphyloma.

Or

- (b) Write notes on Fuchs Endothelial dystrophy.

14. (a) Write about panophthalmitis.

Or

- (b) Explain Giant Papillary Conjunctivitis.

15. (a) What is Normotensive Glaucoma?

Or

- (b) Write about Episcleritis.

**Part C****(3 × 10 = 30)**

Essay questions of either or choice.

16. (a) Explain about dacryocystitis and its treatment.

Or

- (b) Explain about dry eye, its investigation and treatment.



17. (a) Explain phacoemulsification.

Or

(b) Write in detail about viral keratitis.

18. (a) Explain about Ptosis, types, evaluation and treatment.

Or

(b) Explain Anterior uveitis.

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<b>CP-9321</b>
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<b>Sub. Code</b>
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<b>91434</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**OPTOMETRIC INSTRUMENTS — I**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Mention the uses of stenopic slit.
2. List disadvantages of phoropter.
3. What are optotypes?
4. What are the tests performed by vision analyzer.
5. State principle of pachymetry.
6. Give two examples of objective optometer.
7. Name example for color discrimination test.
8. What is radiuscope?
9. Explain MTF.
10. Name two charts for measuring visual acuity in children.

**Part B****(5 × 5 = 25)**

Brief answer with either (or) choice.

11. (a) Write note on direct ophthalmoscope.  
Or  
(b) Write note on auto refractor.
12. (a) Explain about aberrometer.  
Or  
(b) Write about different types of trial frame designs.
13. (a) Write in detail about retinoscope.  
Or  
(b) Write about Yag LASER and ophthalmic application of it.
14. (a) Discuss on corneal topography.  
Or  
(b) Write on brightness acuity test.
15. (a) Write about projection chart and display chart.  
Or  
(b) Tonometer.

**Part C****(3 × 10 = 30)**

Essay question of either (or) choice.

16. (a) Explain two types of distance vision charts and two types of near vision charts.  
Or  
(b) Discuss on compound microscope with Huygens and Ramsden eye piece.

17. (a) Slit lamp biomicroscope.

Or

(b) Write about CS testing.

18. (a) Write in detail about keratometer, its principle, optics and procedure.

Or

(b) Pupillometer.

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<b>CP-9322</b>
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<b>Sub. Code</b>
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<b>91435</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**GENERAL AND OCULAR PHARMACOLOGY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is acute drug toxicity?
2. What is a brand name of the drug?
3. List the stages in adverse drug reactions.
4. What is a viscoelastic agent?
5. What is MED?
6. What is a first pass effect?
7. Define antipyretic and its uses.
8. Pharmacotherapy purpose of aliphatic alcohol.
9. What is a micelle?
10. What is ocular penetration of a drug?

**Part B**

(5 × 5 = 25)

Brief answer with either or choice.

11. (a) Give a brief note on new drug delivery system.

Or

- (b) What is a corticosteroid and its adverse drug action?

12. (a) Write a short note on analgesic used for ophthalmic purpose.

Or

- (b) Write a short note on phase 1 and phase 2 metabolic reactions.

13. (a) Write a short note on nature and source of drug.

Or

- (b) Write a short note on cholinergic drugs.

14. (a) What are the treatment of acute drug poisoning?

Or

- (b) Brief about the drug receptor and its action.

15. (a) Write a short note on dose response relation ship.

Or

- (b) Explain about CNS stimulants.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) Explain about ocular route of administration.

Or

- (b) Write about general anesthetic used for ophthalmic purpose.

17. (a) Brief about drug distribution and factors affecting drug distribution.

Or

- (b) Brief about antiglaucomic drugs and its mechanism of action.

18. (a) What is adverse drug reactions explain the stages in detail.

Or

- (b) Write the chain process of ADME reaction of a dosage form.

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**CP-9323**

**Sub. Code**

**91436**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**CLINICAL EXAMINATION OF VISUAL SYSTEM**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. List any two important points in squint history.
2. What are the normative values of blink rate and TBUT?
3. Explain - RAPD.
4. Define chromo retinoscopy.
5. What is spherical equivalent?
6. What is the difference between gross and net retinoscopy values?
7. What is the use of a pinhole?
8. List any two methods for prescribing adds.
9. 'Maximum plus for maximum vision' - Explain.
10. In case you overcorrect a hyperope, he reports \_\_\_\_\_ to be brighter in duochrome.



**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) History taking in Glaucoma cases.

Or

- (b) Birth history.

12. (a) List the advantages of LOGMAR chart.

Or

- (b) Explain the confrontation test procedure.

13. (a) Discuss the methods used in retinoscopy to find the astigmatic axis.

Or

- (b) List the limitations of autorefractors.

14. (a) Astigmatic dials.

Or

- (b) Cycloplegic refraction.

15. (a) Measurement of IPD and its clinical significance.

Or

- (b) Indentation tonometry.

**Part C**

(3 × 10 = 30)

Essay question of either or choice.

16. (a) Discuss the various types of visual acuity test charts.

Or

- (b) Define the following :
- (i) Minimum detectable
  - (ii) Minimum seperable
  - (iii) Minimum resolvable
  - (iv) Recognition.

17. (a) Explain in detail about retinoscopy.

Or

- (b) List the various types of colour vision tests. Elaborate on FM-100 Hue test.

18. (a) Give a detailed account on techniques used for near subjective refraction.

Or

- (b) Discuss the different methods of prescribing adds in presbyopes.

<b>CP-9324</b>
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<b>Sub. Code</b>
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<b>91442</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**OPTOMETRIC OPTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Weber's law.
2. Define Transmission.
3. ARC.
4. Define the particle nature of light.
5. Define the thin prism.
6. Define Prentice's rule.
7. What is periscopic lens?
8. Explain the Spectral Transmission factor.
9. Explain the thickness difference of a prism.
10. What are transverse movements?

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Write short notes on sign conventions.

Or

- (b) List the various base-apex notations used to denote ophthalmic prisms.

12. (a) Neutralisation of spherical lens.

Or

- (b) Explain with example about different form of lenses.

13. (a) List the properties of cross cylinders.

Or

- (b) Find the powers of single lenses which will replace the followings.

(i) +3.50 DCXH/T.25 DCX H

(ii) +1.75 DCXV/T.75 DCX V

(iii) +0.75 DCXH/+0.75 DCX V

14. (a) Explain Prismatic effect and prentice's rule.

Or

- (b) Give a brief account on sag formula.

15. (a) Give notes on Allyldiglycol carbonate.

Or

- (b) Compare Plastic and Glass.

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

Essay question of either or choice.

16. (a) Give a detailed account on PALs.

Or

- (b) Discuss the optical requirements of bifocals.

17. (a) Discuss the different types of absorptive glasses.

Or

- (b) Explain the principle of ARC. How could you check that the path condition has been fulfilled?

18. (a) Describe the process of manufacturing of glass.

Or

- (b) List the different types of bifocal lenses with individual advantages and disadvantages.
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<b>CP-9325</b>
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<b>Sub. Code</b>
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<b>91443</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**OCULAR DISEASES – II**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. List any two complications of blunt injury in the eye.
2. Mention any two clinical features of pathological myopia.
3. Oscillatory potentials.
4. Metamorphopsia.
5. Visual prognosis in demyelinating optic neuritis.
6. Berlins edema.
7. Classic signs of retinitis pigmentosa.
8. First aid for acute retinal artery occlusion.
9. True/false : In Horner's syndrome
  - (a) Mild ptosis will be seen
  - (b) Normal pupillary reactions are seen for light and near.
10. Signs of spasmus nutans.

**Part B****(5 × 5 = 25)**

Brief answer with either or choice.

11. (a) Posterior vitreous detachment.

Or

- (b) Tractional RD.

12. (a) BRVO.

Or

- (b) BRAO.

13. (a) Explain with diagram, the recordings of a normal ERG.

Or

- (b) Discuss the ophthalmoscopic classification of optic neuritis.

14. (a) Alcohol Tobacco amblyopia.

Or

- (b) Ethambutol induced optic neuropathy.

15. (a) Neurofibromatosis – I.

Or

- (b) Night blindness.

**Part C**

(3 × 10 = 30)

Essay question with either or choice.

16. (a) Hypertensive retinopathy and its management.

Or

- (b) Plus disease.

17. (a) Discuss in detail about arteritic AION.

Or

- (b) Discuss the clinical features of papilledema.

18. (a) Fourth nerve palsy.

Or

- (b) Sixth nerve palsy.
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<b>CP-9326</b>
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<b>91444</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**OPTOMETRIC INSTRUMENTS — II**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Minimum detectable acuity.
2. Vernier acuity.
3. Protanomaly.
4. PSD in HFA report.
5. Mention the parameters of B scan.
6. List any two disadvantages of OCT.
7. Relative scotoma.
8. Define perimetry.
9. State Imbert Fick's law.
10. True/false : Amsler test
  - (a) Is to be done with patient's glasses
  - (b) Is to be done after cycloplegia.

**Part B**

(5 × 5 = 25)

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

11. (a) Gradings of Angle of anterior chamber using gonioscopy.

Or

- (b) Principle of gonioscopy.

12. (a) M focal ERG.

Or

- (b) Pattern VEP.

13. (a) Reliability indices in HVF.

Or

- (b) Contraindications of Amster Grid.

14. (a) Indications of ocular cryotherapy.

Or

- (b) Indications of photocoagulation.

15. (a) Describe a wave, b wave in ERG.

Or

- (b) Oscillatory potentials in ERG.

**Part C**

(3 × 10 = 30)

Essay questions of either or choice.

16. (a) Give an account on B scan.

Or

- (b) List the clinical applications of ERG.

17. (a) VEP – discuss its sources, recording methods and results.

Or

- (b) Pachymetry.

18. (a) Enumerate the different types of tonometers. Discuss their advantages and disadvantages.

Or

- (b) Interpretation of HFA results.
-

**CP-9327**

**Sub. Code**

**91451**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**CONTACT LENSES — I**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is specular reflection?
2. Write the advantages and disadvantages of high water content lenses.
3. How to measure tear prism height?
4. How do you extend the keratometry readings?
5. Write the rule of thumb for SCL and RGP fitting.
6. Mention the disinfecting agents present in the lens care solution.
7. Write the properties of a materials (any 2).
8. What are mucin balls?
9. Write any two indications of SCL.
10. Mention any two signs of steep SCL fitting.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about corneal topography and its indications.

Or

- (b) Write the anatomy and physiology of Tear film.

12. (a) Write the benefits of contact lenses over spectacles.

Or

- (b) Discuss the FDA classification of contact lens material.

13. (a) Discuss the pre-fitting examination in RGP and SCL.

Or

- (b) Discuss the manufacturing methods of SCL.

14. (a) Write the insertion and removal techniques of SCL.

Or

- (b) Write the insertion and removal techniques of RGP.

15. (a) Write the indications and contraindications of contact lens.

Or

- (b) Write the importance of disinfecting agents.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the slit lamp techniques.

Or

- (b) Write the complications of RGP contact lenses.

17. (a) Discuss the effects of sag ht, base curve, and total diameter of SCL.

Or

- (b) How do you verify and check contact lenses from the laboratory?

18. (a) Discuss the accommodation, convergence and magnification between contact lenses and spectacles.

Or

- (b) Explain the contact lens terminology in detail with diagrams.
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<b>CP-9328</b>
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<b>Sub. Code</b>
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<b>91452</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**BINOCULAR VISION – I**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is proximal convergence?
2. Write the Hoffstetter's formula.
3. What is Panum's area?
4. What is Lag of accommodation?
5. Intractable diplopia.
6. Streopsis.
7. What is the normal convergence value?
8. What is versions?
9. What are the actions of superior oblique muscle?
10. Explain confusion.

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

11. (a) Explain about Retinomotor value.

Or

- (b) Explain about cyclopean eye.

12. (a) Explain the actions of Extra ocular muscle.

Or

- (b) Write about fields of fixation.

13. (a) Write about the types of tests of fusion.

Or

- (b) Grades of Binocular single vision.

14. (a) Explain about the types, Aetiology, Investigation and management of Accommodation.

Or

- (b) Explain the definition, mechanism, types and components of convergence.

15. (a) Write about types of Amblyopia.

Or

- (b) Types of suppression.

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

16. (a) Write about the tests for suppression.

Or

- (b) Write about the tests for amblyopia.



17. (a) Write about tests for abnormal retinal correspondance.

Or

(b) Write about tests for stereopsis.

18. (a) Write about synaptophore.

Or

(b) Explain the types of accommodation.

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**CP-9329**

**Sub. Code**

**91453**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**PEDIATRIC AND GERIATRIC OPTOMETRY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. APGAR score.
2. Lea symbols.
3. Crigler's massage.
4. Microphthalmos – Any two clinical features.
5. Premature Birth – Mention any two ocular complications.
6. Krimsky test.
7. Amsler grid.
8. Multifocal contact lenses.
9. FACT chart.
10. Polycarbonate material.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Give brief notes on perinatal Birth History.  
Or  
(b) Write notes on Ptosis History.
12. (a) Give a brief account on visual acuity checking in infants and toddlers.  
Or  
(b) Write notes on Amblyopia.
13. (a) Enumerate the congenital anomalies of Eyelid.  
Or  
(b) Give a brief account on Anisometropia.
14. (a) Give notes on convergence insufficiency.  
Or  
(b) Write briefly on congenital esotropia.
15. (a) Write a brief account on physiological changes of the aging eye.  
Or  
(b) Give an account on management of senile cataract.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Give a detailed account on development of eye and vision.  
Or  
(b) Explain in detail about epiphora in pediatric subjects.

17. (a) Write in detail about binocular vision assessment in pediatric subjects.

Or

- (b) Write a detailed account on optical management of Myopia.

18. (a) Write down the clinical features of Diabetic Retinopathy.

Or

- (b) Examination of Aging Eye – Explain.
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<b>CP-9330</b>
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<b>Sub. Code</b>
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<b>91454</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**DISPENSING OPTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Advantages of tinted lens.
2. What is transposition and its uses?
3. What are the special purpose frames?
4. What are the needed measurements of frames?
5. IPD.
6. Pantoscopic tilt.
7. What is neutralization?
8. What are the expected faults in spectacles?
9. Define maintaining of spectacles.
10. Note any three frame adjustments.

**Part B****(5 × 5 = 25)**

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

11. (a) Differentiate between Lenticulars and Aspherics.

Or

- (b) Aniseikonic lenses.

12. (a) History of spectacles in brief.

Or

- (b) Explain in brief about temple position and colouration of frames.

13. (a) What is PAL and explain?

Or

- (b) Detail note on IPD for distance and near.

14. (a) What are the criterias for ordering of lens?

Or

- (b) Explain Neutralization.

15. (a) What are the accessories which includes maintaining of spectacles?

Or

- (b) What are the torts and methods for spectacle repairs?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Detail note on frame selection.

Or

(b) Manufacturing and measurement of spectacles in detail.

17. (a) Detail note on Lens and frame markings.

Or

(b) Brief note on

(i) Photocheomics.

(ii) Polaroid.

(iii) Fresnel lens.

18. (a) Explain transposition and components of spectacle prescription in detail.

Or

(b) Classification of frames and their materials in detail.

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**CP-9331**

**Sub. Code**

**91455**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**PUBLIC HEALTH AND COMMUNITY OPTOMETRY**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. List any two signs of vitamin A deficiency.
2. Discuss the treatment of Blepharitis.
3. Mention two goals of vision 2020.
4. Who's visual acuity criteria for Blindness.
5. Define sensitivity.
6. Define primordial level of prevention.
7. What is the use of a personal protective equipment in eye care?
8. Define MMR.
9. Define Health.
10. Define Mortality.



**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss in brief about the secondary level of prevention.

Or

- (b) Explain about the mental dimension of health.

12. (a) Enumerate the indicators of morbidity.

Or

- (b) Describe the role of optometrist in community eye care programmes.

13. (a) Give brief notes on preventable Blindness.

Or

- (b) Describe the principles of primary eye care.

14. (a) Discuss the application of tele optometry practice in primary eye care.

Or

- (b) Discuss about the screening for Squint and Amblyopia.

15. (a) Write notes on cost effective analysis.

Or

- (b) Write notes on nutritional Blindness.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about the rehabilitation process in community eye care.

Or

- (b) Write notes on functions of district blindness control society.

17. (a) List and discuss about the determinants of health.

Or

- (b) Write about the levels of prevention in Glaucoma.

18. (a) Enumerate the national eye health agencies in India. Describe their roles in prevention and control of blindness in India.

Or

- (b) Discuss in detail about the epidemiology of visual impairment and blindness in our country.

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<b>CP-9332</b>
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<b>Sub. Code</b>
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<b>91456</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**BIO-STATISTICS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Bio-statistics.
2. Write Infant mortality formula.
3. Write any two limitations for sampling.
4. Define composite hypothesis.
5. Write any two applications of correlation.
6. Write Addition theorem formula.
7. When will apply Poisson formula?
8. Why we study normal distribution.
9. Define Hospital statistics.
10. Write any two uses of hospital statistics.

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

11. (a) Explain Bio-statistics.

Or

- (b) Explain Neo-Natal mortality rate.

12. (a) Explain systematic random sampling technique.

Or

- (b) Write the hypothesis testing procedure.

13. (a) How to classify the data? Explain.

Or

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

BMI :                    20   22   24   26   28   30

No of patients :   14   15   20   18   14   12

14. (a) Explain binomial distribution in detail.

Or

- (b) Write the Chi-square test procedure in detail.

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

Or

- (b) Explain bed occupancy rate.

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

16. (a) Explain Non-Random sampling in detail.

Or

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

C.I : 2-4 4-6 6-8 8-10 10-12 12-14

 $f$ : 4 5 12 8 7 5

17. (a) Calculate Quartile deviation for the following data.

Weight (kg) : 40 50 60 70 80 90

No of patients : 4 5 6 7 10 12

Or

- (b) Calculate Karl Person coefficient of correlation for the following data.

Height (in cm) : 140 150 160 170 180

Weight (in kg) : 40 50 60 70 80

18. (a) Write the characteristics and applications of Normal distribution.

Or

- (b) Calculate chi-square statistic for the following data.

Economic Condition	I.Q		Total
	High	Low	
Rich	460	140	600
Poor	240	160	400
Total	700	300	<u>1000</u>

<b>CP-9333</b>
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<b>Sub. Code</b>
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<b>91411</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**GENERAL ANATOMY AND PHYSIOLOGY**

**(upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Functions of liver.
2. Structure of nephron.
3. Functions of adrenal gland.
4. Blood groups.
5. Auditory system.
6. Types of muscles.
7. Axial skeleton.
8. Structure of sperm.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Structure and functions of heart.
  10. Menstrual cycle.
  11. Classification of joints.
  12. Structure and functions of skin.
  13. Skull bones and its contents.
  14. Composition of blood.
  15. Structure of the respiratory system.
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<b>CP-9334</b>
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<b>Sub. Code</b>
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<b>91412</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**GENERAL AND OCULAR BIOCHEMISTRY**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write short notes on estimation of Hemoglobin.
2. Brief about the classification of carbohydrates.
3. Write about Biochemical functions of cornea.
4. Elaborate the wald's visual cycle.
5. Explain about atherosclerosis.
6. Brief about the chemistry and function of hemoglobin.
7. Write about the biochemical functions of proteins.
8. Write the principle and procedure of the analysis of serum cholesterol.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. What is an immunoglobulin brief about the types of immunoglobulin?
10. Explain in detail about blood grouping.



11. Classify the enzymes and explain its mode of action.
  12. Write about the structure and function of lens.
  13. Brief about the classification and importance of triglycerits.
  14. Elaborate the Biological function and disease manifestation of fat soluble vitamins.
  15. Classify carbohydrates, mention its properties and functions.
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<b>CP-9335</b>
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<b>Sub. Code</b>
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<b>91413</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018.**

**First Semester**

**Optometry**

**GEOMETRICAL OPTICS**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write note on Dual nature of Light.
2. Derive the formula for equivalent focal length of two thin lenses separated by a distance.
3. Write note on Total internal reflection.
4. Write about different types of lenses.
5. Define prism Diopter and explain.
6. Describe Vergence and its types.
7. Write note on cardinal points and planes.
8. Give brief account on axial magnification.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. State and explain Fermat's principle. Derive law of refraction at plane surface.
  10. Derive Lens makers formula and give its importance.
  11. Write note on geometrical theory of Optical fibers.
  12. Describe different types of Aberrations.
  13. Describe in detail refraction at convex surface
  14. Write about Matrix theory in paraxial optics.
  15. Derive Vergence equation.
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<b>CP-9336</b>
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<b>Sub. Code</b>
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<b>91414</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Optometry**

**ENGLISH AND COMMUNICATION SKILLS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write a short note on kinds of sentences.
2. What are the basic steps for writing a paragraph?
3. Write a note on:
  - (a) Base outline
  - (b) Full outline.
4. What is report writing? Give example.
5. What is time management during presentation?
6. Write a note on persuasiveness.
7. What are the principles of group discussion?
8. What is meant by abstract topic? Give example.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. What are the important characteristics of good essay?
  10. Write an essay on parts of speech with examples.
  11. Explain classification of letters.
  12. Write briefly on types of reports.
  13. Explain giving and preparing for presentation.
  14. Write an essay on leadership qualities.
  15. Prepare a group discussion on “Fuel Hike”.
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<b>CP-9337</b>
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<b>Sub. Code</b>
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<b>91415</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018****First Semester****Optometry****NUTRITION****(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write about Satiety Value.
2. Write notes on Milk and milk products.
3. Write notes on Basal Metabolic Rate.
4. Write about Essential Fatty Acids.
5. Write about water soluble vitamins.
6. Explain Bomb Calorimeter with diagram.
7. Write notes on Nitrogen balance.
8. Write about Measles and its ocular manifestations.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain in detail about obesity and its complications.
10. Nutrient requirements and Diet Planning for lactating mothers.

11. Explain about assessment of nutritional status.
  12. Explain hyperlipidemia in detail.
  13. Write about protein energy malnutrition.
  14. Write in detail about macronutrients sources and deficiency.
  15. Explain Vitamin A deficiency .
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**CP-9338**

**Sub. Code**

**91421**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**ANATOMY OF THE EYE AND ORBIT**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. Write about Ciliary zonules and its arrangement.
2. Write about structures visible at the Angle of Anterior chamber.
3. Write about the Apex of the Orbit.
4. Explain about supra nuclear motor centres.
5. Write the anatomy of Ciliary Body.
6. Explain the Roof of the orbit.
7. Write about the surgical spaces of the orbit.
8. Explain the parts of the conjunctiva.



**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain the blood supply of Uvea.
  10. Write about the anatomy of Macula and Optic disc.
  11. Explain the anatomy of Crystalline Lens.
  12. Write about Orbital Fascia in detail.
  13. Write about anatomy of Visual Pathway.
  14. Write in detail about VI Cranial Nerve.
  15. Explain the structures of Lacrimal Passage.
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**CP-9339**

**Sub. Code**

**91422**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**PHYSIOLOGY OF THE EYE**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Explain about “changes in ageing lens”.
2. Explain physiochemical properties of vitreous.
3. List the
  - (a) Layers of cornea
  - (b) Layers of retina.
4. With a neat diagram, explain about lacrimal passage.
5. Explain about grades of binocular vision.
6. Write a note on contrast sensitivity.
7. Write in detail about measurement of IOP.

8. Explain the following:
- (a) Isocoria
  - (b) Pupillary unrest
  - (c) Hippus
  - (d) Correctopia
  - (e) Polyopia.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain functions of
- (a) aqueous humour
  - (b) tears.
10. Draw a tabular column and write the extraocular muscles, their functions and nerve supply.
11. Write in detail about blood ocular barrier.
12. Explain about electrodiagnostic tests.
13. Explain in detail about accommodation and theories of accommodation.
14. With a neat diagram, explain about pupillary light reflex and near reflex.
15. What is visual acuity? Explain about components of visual acuity.
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<b>CP-9340</b>
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<b>Sub. Code</b>
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<b>91423</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**PHYSICAL OPTICS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. What is Simple harmonic wave? Obtain the mathematical representation of simple harmonic wave.
2. Explain Wave velocity and Group velocity.
3. Write note on Fresnel biprism.
4. Write about Color in thin film.
5. Explain diffraction by double slit.
6. Describe Airy Pattern.
7. List the applications of LASER.
8. Give brief account on Zone plates.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. State and explain Huygen's principle. Describe law of reflection at plane surface.
10. Explain recording and reconstruction of Hologram.

11. Write note on production of polarized light.
12. Describe construction and working of Quarter wave plate.
13. Explain the theory of interference produced in wedge shaped films.
14. Give note on :
  - (a) Linear polarization
  - (b) Elliptical polarization.
15. Describe Young's double slit experiment with necessary theory.

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<b>CP-9341</b>
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<b>Sub. Code</b>
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<b>91424</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**COMPUTERS**

**(upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. What are peripheral devices? Explain the functioning of anyone device.
2. Classify computers based on their speed of operation.
3. Convert the following decimal number to binary, octal and hexadecimal number system: 1024.24
4. Perform the following binary arithmetic:
  - (a) 101101–001101
  - (b) 1111 + 1111.
5. Classify software based on their applications.
6. What are the major functions of an operating system? Explain briefly.
7. Explain the command options in paragraph dialogue box.
8. Describe the options in E-mail handling.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. With block diagram, explain the functional components of a computer system.
  10. With example, explain how will you convert a number in binary to octal and hexadecimal number systems in shortcut way?
  11. Explain the components of a window and the icons found on desktop.
  12. Explain the steps in Mailmerging a letter with address file.
  13. Explain the steps in creating a bar chart with your own data.
  14. Explain about table and picture handling in word.
  15. Explain the steps in sorting data in excel.
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<b>CP-9342</b>
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<b>Sub. Code</b>
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<b>91425</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Second Semester**

**Optometry**

**MICROBIOLOGY AND PATHOLOGY**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write short notes on chalazion.
2. What is normal ocular flora?
3. Write the procedure of vitreous tapings.
4. What is a culture write about its types?
5. Write short notes on ocular bacteriology.
6. Brief about chlamydiae.
7. Write the clinical importance diagnosis and treatment of Acanthamoeba.
8. Explain about heat radiation method of sterilization.



**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write in detail about the tissue injury and inflammation pathway.
  10. Explain about conjunctivitis and its types.
  11. Brief about gram negative bacilli classification, diagnosis, mitigation and treatment.
  12. Explain in detail about the types of hypersensitivity reactions.
  13. Write the procedure of
    - (a) KOH Mount
    - (b) Giemsa staining.
  14. What is Hordeolum differentiate between Hordeolum internum and Hordeolum externum.
  15. Explain about common fungi involved in ocular lesions.
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<b>CP-9343</b>
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<b>Sub. Code</b>
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<b>91431</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**VISUAL OPTICS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Draw and explain schematic and reduced eye.
2. Explain depth of focus and depth of field.
3. Explain the angles and axes of the eye.
4. Explain Schiener disc experiment.
5. Explain the etiology of ametropia.
6. Explain binocular balancing techniques.
7. Explain Pelli Robson contrast sensitivity chart.
8. Explain chromatic aberration and spherical aberration.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain the aberration of the optical system of the eye.
10. Explain the sign, symptoms and management of myopia.

11. What is accommodation? Explain the mechanism and changes taking place during accommodation.
  12. What is Aphakia? Explain the causes, signs, symptoms, optics and management of Aphakia.
  13. What is retinoscopy? Explain the procedures and types of retinoscopy methods.
  14. Explain Strums conoid with diagram.
  15. What is tritanomaly? Explain different types of color vision test.
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CP-9344

Sub. Code

91432

B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Optometry

CLINICAL REFRACTION — I

(Upto 2015 batch)

Time : 3 Hours

Maximum : 70 Marks

Part A

(5 × 6 = 30)

Answer any **five** questions.

1. Write about fogging and principle behind fogging.
2. List out various types of dynamic retinoscope and explain about any one.
3. Duochrome Test :
  - (a) The acceptance value of a 16 year old male is -3.50 DS. He says green is better with duochrome. What does it mean? What should be done?
  - (b) The acceptance value of a 14 year old female is +2.75 DS. She says green is better with duochrome. What does it mean? What should be done?
4. Explain about finalisation of add for near and intermediate based on occupational consideration.
5. List out differences between Snellen and LogMar.
6. Explain about Turville infinity balance.
7. Explain about Cyclodamia and sudden unfogging.
8. Explain about radical retinoscopy.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write in detail about case history.
  10. Explain about subjective and objective methods of finding and refining astigmatism.
  11. The acceptance value for a 55 year old female is ou : + 1.75 DS and add is ou : + 2.50 DS. Write a prescription for her and include other essential details that a prescription should contain.
  12. Explain about :
    - (a) Pinhole
    - (b) Distometer.
  13. What is binocular balancing? Explain anyone method of binocular balancing.
  14. Write in detail about cycloplegic refraction.
  15. Explain different methods of measuring amplitude of accommodation.
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<b>CP-9345</b>
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<b>Sub. Code</b>
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<b>91433</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**OCULAR DISEASES – I**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6= 30)

Answer any **five** questions.

1. Write a note on allergic conjunctivitis.
2. Write about neovascular glaucoma.
3. Write a note on subluxation.
4. Differentiate follicles and papillae.
5. Write on aqueous cells, flare and its gradings.
6. Fuchs endothelium dystrophy.
7. Herpes Zoster Ophthalmicus.
8. Factors affecting Intraocular Pressure.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write about
  - (a) Keratoconus and its management
  - (b) Keratoglobus.

10. Write about the congenital deformities of eyelids
  11. Dry eye classification
  12. Write on
    - (a) Pterygium.
    - (b) Pingueculae.
    - (c) External hordeolum.
    - (d) Internal hordeolum .
  13. Types of Cataract.
  14. Ocular manifestations of vitamin A deficiency.
  15. Write in detail about classification, evaluation and management of ptosis.
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<b>CP-9346</b>
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<b>Sub. Code</b>
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<b>91434</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**OPHTHALMIC INSTRUMENTATION**

**(Upto – 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write note on Radiuscope.
2. Explain the construction, parts, working of Binoculars.
3. Write note on one position Keratometer.
4. Write about Trial case and its components.
5. Explain the characteristics of LogMar chart.
6. Direct ophthalmoscope.
7. Describe Spectrometer.
8. Write note on
  - (a) Ramden eyepiece
  - (b) Huygens eyepiece.



**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write in detail about Retinoscope, its types, principle, parts and working.
  10. Write about Slit lamp its parts and different attachments in it.
  11. Autorefractors.
  12. Indirect ophthalmoscopes.
  13. Write about different charts used in testing visual acuity in children.
  14. Dioptron.
  15. Explain about telescope, its constructions and uses.
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<b>CP-9347</b>
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<b>Sub. Code</b>
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<b>91435</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Optometry**

**GENERAL AND OCULAR PHARMACOLOGY**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write a note on classification of drugs.
2. Mention about fate of the drug.
3. Explain about preparation and packing of ophthalmic formulations.
4. What is the drug category of procaine explain its mechanism of action?
5. Write a short note on acute drug poisoning.
6. Describe about alpha adrenergic blockers.
7. Explain the pharmacotherapy of insomnia.
8. Describe about CNS stimulants.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain about drug absorption and its different types with example.
10. What is ADR explain its manifestations?
11. What is hypnotics classify and explain its mechanism of action?
12. Brief about viscoelastic agents.
13. Explain about local anesthetics and add a note on its classification.
14. Explain in detail about bioavailability and its factors.
15. What is an aliphatic alcohol explain its pharmacological action?

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<b>CP-9348</b>
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<b>Sub. Code</b>
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<b>91441</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**DISPENSING OPTICS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Explain the characteristics of lens materials.
2. Explain aberration of lens.
3. What is a bifocal lens? Explain types of bifocal lenses.
4. Explain path phase and amplitude phase of ARC coatings.
5. What are tempered glass lenses? Explain types of tempered lenses available.
6. Differentiate between boxing system and datum system.
7. What are special purpose frames? Explain types of special purpose frames available.
8. Explain the procedure of marking fitting cross in progressive lenses.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. What is neutralization of lens? Explain different methods and procedure of neutralization.
10. What is photochromatism? Explain the factors, process and types of photochromatic materials.
11. What is surfacing? Explain the steps of surfacing and faults of surfacing.
12. What are absorptive lens? Explain different types of absorptive lenses.
13. What are Progressive lenses? Explain design, advantages, disadvantages and dispensing of progressive lenses.
14. Explain pediatric dispensing.
15. Explain different types of frames materials.

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<b>CP-9349</b>
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<b>Sub. Code</b>
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<b>91442</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**OCULAR DISEASES — II**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write notes on nyctalopia.
2. Write about Neurofibromatosis-I.
3. Explain hypertensive retinopathy.
4. Write about hereditary optic atrophy.
5. Write about cystoid macular oedema.
6. Write about AION.
7. Write about Pituitary adenoma.
8. Write about optic atrophy and its classifications.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain about homer's syndrome.
10. Write about CRVO.

11. Write about vertical gaze palsy.
  12. Explain rhegmatogenous retinal detachment.
  13. Write in detail about III CN palsy.
  14. Explain retinoblastoma.
  15. Explain about Myasthenia Gravis.
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<b>CP-9350</b>
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<b>Sub. Code</b>
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<b>91443</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**CLINICAL REFRACTION – II**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write a note on methods of calculating AC/A ratio.
2. Write a note on Congenital cataract — presentation and its management.
3. Monocular subjective refraction.
4. Neuro - optometric Rehabilitation.
5. Vision assessment and Refraction in nystagmus patients.
6. Diagnosis and management of convergence excess.
7. Evaluation of strabismus.
8. Diagnosis and management of divergence excess.



**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Common visual ailments in geriatric population.
  10. Diagnosis and Management of
    - (a) Convergence insufficiency
    - (b) Divergence insufficiency.
  11. Write on low vision aids.
  12. Sports vision and its management.
  13. Diagnostic factors of Glaucoma and its presentation.
  14. Common visual ailments in paediatric population.
  15. Management of Strabismus.
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<b>CP-9351</b>
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<b>Sub. Code</b>
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<b>91444</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fourth Semester**

**Optometry**

**OPHTHALMIC INSTRUMENTATION — II**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. Write note on Ishihara.
2. Give the importance of PAM.
3. Write about LASER safety.
4. Write about B scan.
5. Explain any two ways of testing Contrast sensitivity.
6. Write indications of Perimetry.
7. Describe Non contact Tonometer.
8. Amsler charting.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write in detail about Applanation Tonometry.
  10. Write on Brightness acuity tester, its uses and procedure.
  11. A Scan.
  12. Write about Interpretation of Perimetry report.
  13. Write about different charts used in testing visual acuity in children.
  14. Pachymetry.
  15. FFA.
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<b>CP-9352</b>
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<b>Sub. Code</b>
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<b>91451</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**CONTACT LENSES — I**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Explain manufacturing technique of RGP contact lenses.
2. Explain spectacle blur and compare the vergence requirement between spectacle and contact lens.
3. Explain the advantage of contact lens over spectacles.
4. Find contact lens power for prescription reading as +6.00Dsph/-200Dcyl × 180 vertex distance 13mm.
5. Explain extended keratometry and requirement of extended keratometry.
6. Explain fitting assessment of soft contact lenses.
7. How will you modify BVP and TD after manufacturing process?
8. Explain role of tear lens in RGP contact lens.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain different illumination techniques used in slit lamp and its uses.
  10. Explain different instrument available for corneal topography.
  11. Explain pre —fitting evaluation of soft contact lens.
  12. Explain the advantages of soft lens over RGP.
  13. Explain different types of design of RGP lens and indication of each design.
  14. What are adaptive symptoms? Explain the methods to overcome adaptive symptoms. Explain the cause of rocky movements.
  15. Explain CRADLE.
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**CP-9353**

**Sub. Code**

**91452**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**BINOCULAR VISION – I**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Explain visual direction and principle visual direction. Explain retinal rivalry.
2. Draw and explain Horopter and Vieth Muller circle.
3. What is stereopsis? Explain local and global stereopsis.
4. What is convergence? Explain components of convergence.
5. Explain test for SMP.
6. Explain muscle plane and tangent plane.
7. Explain laws of ocular motility.
8. Explain prismatic effect in spectacle.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. What are monocular clues? Explain different types of monocular clues.
  10. Explain physiological diplopia and its application.
  11. What major amblyoscope? Explain the use of major amblyoscope in evaluation of BSV.
  12. What is Ac/A ratio? Explain different methods to find Ac/A ratio.
  13. What is type II accommodative esotropia? Explain signs, symptoms and management of type II accommodative esotropia.
  14. Tabulate course of insertion, origin, nerve supply, blood supply, length and action of EOM.
  15. What is anisometropia? Explain sign, symptoms and management of anisometropia.
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<b>CP-9354</b>
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<b>Sub. Code</b>
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<b>91453</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**PEDIATRIC OPTOMETRY AND GERIATRIC  
OPTOMETRY**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. List the perinatal factors and give its clinical importance.
2. Congenital lid anomalies.
3. Sensory adaptations in squint patients.
4. Give notes on refractive changes in the elderly.
5. Give notes on cycloplegics and drug correction.
6. Fuch's endothelial dystrophy.
7. Management of hyperopia in children.
8. Congenital ptosis.



**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Detailed picture of optometric workup done in geriatric patients.
  10. Aging changes in the Retina.
  11. Detailed account on frisby stereo tests.
  12. Pediatric Aphakia.
  13. Classify esotropia. Discuss any possible optometric management.
  14. Dispensing of glasses in pediatric patients.
  15. Give the detailed management plans of Amblyopia. Give a special mention on bangerter foils.
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<b>CP-9355</b>
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<b>Sub. Code</b>
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<b>91454</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**BIOSTATISTICS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Write the uses of biostatistics.
2. Explain specific death rates.
3. Explain stratified random sampling technique.
4. Write the procedure for hypothesis testing.
5. What is secondary data? What are the main sources of secondary data?
6. Calculate Rank correlation for the following data.  
X : 20 25 15 17 18 22  
Y : 18 24 17 18 15 13
7. Write any five uses of binomial distribution.
8. Write any five characteristics of chi-square distribution.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. What is sampling? Explain different methods of probability sampling.
10. What is primary data? Explain in detail.
11. Why study hospital statistics? Explain.
12. Calculate mean deviation from mean and median for the following data.
- |                   |    |    |    |    |    |
|-------------------|----|----|----|----|----|
| Weight (kg) :     | 50 | 60 | 70 | 80 | 90 |
| No. of patients : | 14 | 15 | 20 | 13 | 12 |

13. Explain regression in detail.
14. In an anti malarial campaign in a certain area, quinine was administered to 1624 person act of a total population of 6496. The no. of fever cases is shown below.

Treatment	Fever	No fever	Total
Quinine	40	1584	1624
No Quinine	440	4,432	4,872
Total	480	6016	6496

Discuss the usefulness of quinine in checking malaria.

15. Explain the test procedure of chi-square test.

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**CP-9356**

**Sub. Code**

**91455**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Fifth Semester**

**Optometry**

**HOSPITAL PROCEDURES**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. Different terms of storage in an eye bank.
2. Discuss about the calibration of a tonometer.
3. List the duties of an eyebank manager.
4. Give an account on medical coding.
5. What is the role of a counsellor in surgery department?
6. How does one maintain the cleanliness in an optometry consultation room?
7. Describe in brief about the importance of human resources department.
8. Importance of correspondence department in an eye hospital.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Discuss in detail about the importance of eyebanks in our country.
  10. Role of housekeeping department in a hospital.
  11. Activities of patient services team.
  12. What are the various instruments used in an eye hospital?
  13. Importance of medical records in a medico legal case.
  14. Activities in an optometry department.
  15. Enumerate the activities of a biochemistry lab.
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**CP-9357**

**Sub. Code**

**91461**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Sixth Semester**

**Optometry**

**CONTACT LENSES — II**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. What are the different types of RGP and SCl designs?
2. What are the advantages of contact lenses over spectacles in case of anisometropia?
3. Write the indications and contraindications of contact lens wear.
4. Write the indications of bandage contact lens.
5. Difference between Daily Wear (DW) and Extended Wear (EW) lenses.
6. Discuss the types of prosthetic contact lenses and their indications.
7. What is orthokeratology?
8. What is Monovision? Explain the pros and cons?

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Mr. X – Old conventional contact lens when visits your clinic with both eyes complaints of itching, rubbing of eyes and occasional redness while using lenses. On slit lamp examination, it was found Grade 3 Giant papillary conjunctivitis. How do you manage the case?
10. Explain in detail on RGP lens fit assessment in keratoconus.
11. Discuss the signs and symptoms of patient wearing steep and flat soft contact lens fitting.
12. Calculate the back vertex power of contact lens if the spectacle power is +12.00DS and vertex distance is 12 mm.
13. Discuss the flurosceins pattern of optimal steep and flat fitting in RGP G.
14. Discuss the stabilization techniques of soft Toric contact lens.
15. Explain soft Toric lens fitting in detail.

<b>CP-9358</b>
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<b>Sub. Code</b>
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<b>91462</b>
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**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Sixth Semester**

**Optometry**

**BINOCULAR VISION — II**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

(5 × 6 = 30)

Answer any **five** questions.

1. Convergence Insufficiency.
2. Prism bar cover test.
3. Grades of binocular vision.
4. (a) Risley prisms  
(b) Red green goggles.
5. Diplopia Charting.
6. Tests for stereopsis.
7. Flippers.
8. (a) Brock string  
(b) Pencil push up test.



**Part B** $(4 \times 10 = 40)$ Answer any **four** questions.

9. Amblyopia.
  10. Maddox Rod and Wing tests.
  11. Interpretation of Hirschberg test.
  12. Beilschowsky's Head Tilt test.
  13. (a) Worth four dot test.  
(b) Bagolini striated lens test.
  14. Hess Screen Chart.
  15. Suppression types, diagnosis and treatment.
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**CP-9359**

**Sub. Code**

**91463**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Sixth Semester**

**Optometry**

**LOW VISION AIDS**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. Write about relation between disorder, impairment and handicapped.
2. Explain simple dioptric formulae.
3. Hand held Magnifier.
4. Ambler chart.
5. Environmental modification in low vision.
6. Contrast sensitivity in low vision.
7. Anicidia in low vision.
8. Draw optics of Galilean and Keplarian telescope.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Write on basic prescribing ideas for a optical aid to a low vision aid.
  10. Explain telescope and its uses.
  11. Write on rehabilitation of low vision patient.
  12. Explain various acuity charts used in low vision assessment.
  13. Write notes on non optical aids.
  14. Explain in detail pediatric low vision devices.
  15. Write about geriatric low vision rehabilitation.
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**CP-9360**

**Sub. Code**

**91464**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Sixth Semester**

**Optometry**

**SYSTEMIC DISEASES AFFECTING THE EYE**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 70 Marks

**Part A**

**(5 × 6 = 30)**

Answer any **five** questions.

1. Classification of Anti-hypertensive drugs.
2. Enlist and in short write about complication of Diabetes mellitus.
3. In short explain Rheumatic Heart disease.
4. Grading and staging of Tumors.
5. Write about Hashimotos Thyroiditis.
6. Explain about syphilis and eye.
7. Vitamins deficiency and associated ocular problems.
8. Retinoblastoma – Explain.

**Part B**

(4 × 10 = 40)

Answer any **four** questions.

9. Explain in detail about tuberculosis and ocular manifestation.
  10. Ophthalmic complication of hypertension.
  11. Connective tissue diseases and its ocular manifestation.
  12. Describe Diabetic Retinopathy.
  13. Explain Grave's ophthalmopathy.
  14. Write about tuberculosis and its manifestation related to eye.
  15. Visual pathway lesions. Explain.
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