

Mahatma Gandhi University
of
Medical Sciences & Technology, Jaipur

Syllabus

M.Sc. Ophthalmic Techniques and Optometry
(2 Years Degree Course)

Notice

1. Amendments made by the University in Rules / Regulations of the Courses shall automatically apply.
2. The University reserves the right to make changes in the syllabus/books/ guidelines, feestructure or any other information at any time without prior notice. The decision of the University shall be binding on all.
3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

M.Sc. Ophthalmic Technique & Optometry ()

(2 Years Degree Course)

Rules & Regulations

1. TITLE OF THE COURSE

The title of the course shall be “M.Sc. Ophthalmic Technique & Optometry”.

2. DURATION OF COURSE/TRAINING

The course shall be of two years duration from the date of commencement of academic session.

3. MEDIUM OF INSTRUCTION

English shall be the medium of instruction

4. ELIGIBILITY FOR ADMISSION:

Candidate should have passed the Bachelor's Degree in Ophthalmic Techniques & Optometry.

5. CRITERIA FOR ADMISSION

Selection shall be done by an Admission Board of the University strictly on merit. It will consist of two-step process –Written Entrance Examination followed by Counseling/Personal Interview (PI).

6. RESERVATION POLICY

Reservation shall be applicable as per policy of the State Government.

7. ENROLMENT

Every candidate who is admitted to M.Sc. Course in Mahatma Gandhi Medical College & Hospital shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed eligibility and enrolment fees.

A candidate shall deposit enrolment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, through the college Principal, duly filled enrolment form along with original documents including migration certificate required for enrolment within two months of his/her admission or up to November 30 of the year of admission whichever is later, he/she will have to pay late fee prescribed by the University

8. MIGRATION RULES

No student, once admitted to the course and enrolled by the University, will be permitted to migrate to any other Course/ University.

No student will be admitted to the Course on migration from any other Course/ University.

9. ATTENDANCE

Minimum 75% attendance in each year, both for theory and practical classes separately. Student with deficient attendance will not be permitted to appear in University examination.

10. TRAINING:

1. The period of training for M.Sc. shall be of two years from the date of admission.
2. Part – I and Part – II of the course shall be of one-year duration each.
3. The candidate will undertake the post graduate training as a full time post graduate in the department concerned.
4. The students will be required to complete the prescribed period of study and fulfill the requirement of attendance before they are allowed to appear in the University examination.

11. EXAMINATION AND ASSESSMENT

1. The examination of Part I shall consist of three theory papers and internal assessment and practical & viva-voce examination.
2. The examination of Part II shall consist of three theory papers and practical in the opted specialization.
3. A candidate shall be permitted a maximum of 4 years from the year of admission to complete the course and pass the examination failing which; the candidate will have to leave the course.
4. Only those candidates will be allowed to appear at Part II examination, who have passed Part –I examination completely.

12. CONDUCTION OF THE UNIVERSITY EXAMINATION:

University examination shall be conducted twice in a year; that is Main and Supplementary Examination.

13. SCHEME OF EXAMINATION

The Examination in Part I shall consist of:

Paper	Marks
Theory	
Paper I - Basic Sciences and Clinical Optometry-I, Community Optometry & Public Health, Advance Dispensing Optics	100 Marks
Paper II - Research Methodology, Orthoptics & Vision Therapy, Elective: Advanced Glaucoma, Paediatric Optometry	100 Marks
Paper III - Clinical Optometry-II & Advanced Diagnostic, Neuro Optometry, Elective: Eye Banking	100 Marks
Internal Assessment	100 Marks
Practical & Viva Voce Examination	300 Marks
Total Marks	700 Marks

Notes:

1. Each theory paper shall be of 3 hours duration.
2. Each paper will be set by the External Examiner of the subject concerned and will be assessed by the internal examiner of the subject concerned.

Pattern of questions to be set and answered shall be as follows:

Paper	No. of questions to be set	No. of questions to be answered
Paper I	4	4
Paper II	4	4
Paper III	4	4

3. In order to pass the University Examination, the candidate must secure a minimum of 50% marks in each theory paper including internal assessment and 50% marks in practical and viva-voce examination separately.
4. A candidate who has failed in one or more theory paper of Part-I Examination must appear in that theory paper in supplementary examination which will be conducted by university within 2 – 4 months.

The Examination in of Part II shall consist of:

Code	Paper	Marks
	Theory	
	Paper I - Cornea & Contact Lens, Low Vision & Rehabilitation	100 Marks
	Paper II - Recent Advancement in Optometry	100 Marks
	Paper III -Special Clinic –I& Special Clinic –II	100 Marks
	Internal Assessment	100 Marks
	Practical & Viva Voce Examination	300 Marks
	Dissertation	100 Marks
	Total Marks	800 Marks

Notes:

1. Each theory paper shall be of 3 hours duration.
2. All papers shall be set by the External Examiners.
3. Paper I will be assessed by the External Examiner and Paper II will be assessed by the Internal Examiner viz. Head of the Department of subject concerned. Paper III will be assessed by Professor / Associate professor / Assistant professor

Pattern of questions to be set and answered shall be as follows:

Paper	No. of questions to be set	No. of questions to be answered
Paper I	4	4
Paper II	4	4
Paper III	4	4

4. Practical examination shall be conducted by one Internal, one External Examiner which will be appointed by the university.
5. In order to pass the examination the candidate must secure a minimum of 50% marks in Theory papers including internal assessment and 50% marks in practical and viva-voce examination separately.
6. In case a student passes either in Theory or in Practical only, the student shall be considered to fail in the whole examination and he will have to appear in both the Theory and Practical in the subsequent examination.

14. APPOINTMENT OF EXAMINER AND PAPER SETTERS

- a. All the examiners, paper setters, theory examination answer books evaluators, Internal and External Examiners for Practical examinations shall be appointed by the President of the University.
- b. Qualification of the Paper setter / Examiner: Assistant Professor and above.
- c. Paper setter can be an examiner

15. GRACE MARKS

No grace marks will be provided in M.Sc. Examination

16. REVALUATION / SCRUTINY

No Revaluation of answer books shall be permitted in M.Sc. Examination. However, the candidate can apply for scrutiny of marks as per University Rules.

Curriculum Outline

Distribution of Teaching hours

1ST Year M.Sc. Ophthalmic Technique & Optometry

Course Title	Hours
Ocular Anatomy	40
Ocular Physiology	40
Related Pathology and Microbiology	40
Ocular Pharmacology	40
Clinical Optometry	40
Community Optometry & Public Health Community Optometry	50
Advance Dispensing Optics	40
Spectacle Frames	40
Research Methodology	50
Advance Glaucoma	40
Orthoptics and Vision Therapy	50
Clinical Optometry – II and Advanced Diagnostics	50
Neuro Optometry	40
Eye Banking	40
Total Theory Hours	600
Practical	300
Total Hours :	900

2nd Year M.Sc. Ophthalmic Technique & Optometry

Course Title	Hours
Cornea And Contact Lens	200
Low Vision And Rehabilitation	200
Recent Advancement In Optometry	200
Total Theory Hours	600
Practical	300
Total Hours :	900

Syllabus

M.Sc. Ophthalmic Technique & Optometry ()

First Year

Paper Subject

1. Basic Sciences and Clinical Optometry-I, Community Optometry & PublicHealth, Advance DispensingOptics.
2. Research Methodology, Orthoptics & Vision Therapy, Elective
 - 1) Advanced Glaucoma.
 - 2) Pediatric Optometry.
3. Clinical Optometry-II & Advanced Diagnostic, Neuro Optometry, Elective
 - 1) Eye Banking.

Second Year

Paper Subject

1. Cornea & ContactLens, Low Vision & Rehabilitation
2. Recent advancement in Optometry
3. Special Clinic-I, Project / Dissertation -I, Special Clinic-II, Project Dissertation -II

FIRST YEAR

Paper I: BASIC SCIENCE AND CLINICAL OPTOMETRY – I

Study topics – Ocular Anatomy:

1. Development of the eyeball
2. Blood Supply of Orbit
3. - Nerve supply of the eyeball
 - Optic nerve
 - Oculomotor and Trochlear nerve
 - Trigeminal and Abducent nerve
 - Facial nerve
4. Ocular Adnexa,
5. Lacrimal apparatus
6. Eye ball (Sclera, uveal tract, retina)
7. Angle of anterior chamber.
8. Crystalline lens.
9. Movement of eyeball and extra ocular muscles.
10. Autonomic Nervous System.
11. Visual Pathway.

Study topics – Ocular Physiology:

1. Intra-ocular Pressure:-
Intra-ocular pressure: a dynamic equilibrium
Tomography
2. Visual Adaptation:-
Mechanisms of visual adaptation,
Dark adaptation and regeneration of rhodopsin, Adaptation of photoreceptors,
3. Visual Acuity:-
Specifications of the stimulus (physical basis) Retinal anatomy, Physiologic factors, Acuity criteria,

Measurement of ordinary visual acuity (minimum angle of resolution) Factors influencing visual acuity,
Sinusoidal grating targets
4. Color Vision:-
Color and the visible spectrum, Color mixing, metameric matches and complementary wavelengths,
Neural encoding of color, Congenital & Acquired dyschromatopsias,
5. The Central Visual Pathways:-
The retino – geniculo- cortical pathway, Visual field examination, Structure and functions of the lateral geniculate body, The primary visual cortex, Extrastriate visual cortex, Visual deprivation

6. Binocular Vision:-
Normal adult psychophysics,
Normal development of binocular vision,
Mal development of binocular vision,
Strabismus and amblyopia,
Binocular vision in other animals

Study Topics – Related Pathology and Microbiology:

1. Infections, Inflammation and repair mechanisms.
2. Allergic reactions in ocular tissues.
3. Bacteria, Virus, Fungus and their features for differentiation.
4. Common bacterial infections of the eye.
5. Common fungal infections of the eye.
6. Common viral infections of eye

Study Topics – Ocular Pharmacology:

1. Classification of Ophthalmic drugs.
2. Sympathomimetics & Sympatholytics.
3. Parasympathomimetics & Parasympatholytics.
4. Diagnostic drugs used in optometry – Dyes and stains.
5. Antibacterial, Antifungal agents.
6. Steroid and Non-steroidal anti-inflammatory drugs.

CLINICAL OPTOMETRY:

1. Diseases of lids
2. Diseases of adnexa, Diseases of orbit
3. Diseases of Lacrimal Apparatus
4. Diseases of Conjunctiva
5. Refractive errors

Text Book:

1. Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone, 1990
2. Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 6th edition, Butterworth - Heinemann, 2007
3. Myron Yanoff and Jays Duker : Ophthalmology

Paper I:

COMMUNITY OPTOMETRY & PUBLIC HEALTH COMMUNITY OPTOMETRY:

To include the theoretical knowledge and clinical exposure of community Optometry. The outcomes of the course are: through understanding of conducting of screening for specific eye conditions, and resultant implications through theoretical and practical exposure.

1. Concept of Health and Disease
2. Principles of Epidemiology and Epidemiological Methods
3. Screening for Eye Disease – Refractive errors, Low Vision, Cataract, Diabetic retinopathy, Glaucoma, Amblyopia, Squint
4. Blindness
5. Health Information and Basic Medical Statistics
6. Communication for Health Education
7. Health planning and Management
8. Health care of community
9. How to plan and implement vision 2020

PUBLIC HEALTH:

This course deals with the basic of ocular epidemiology and present details on various eye diseases. It also introduces the students to the concepts of preventive measures.

1. Prevalence, incidence, and distribution of visual impairment
2. Methodology
 - a) Basics of epidemiology study methods
 - b) Types of study designs
 - c) Screening for visual disorders
3. Childhood blindness
4. Refractive errors and presbiopia
5. Age related cataract
6. Diabetic retinopathy
7. Glaucoma
8. Age related macular degeneration
9. Vitamin A deficiency
10. Corneal and external diseases
11. Prevention strategies

Paper I: ADVANCE DISPENSING OPTICS

1. Outline of lens surfacing and polishing, terminology used in Lensworkshops:
 - a) Ophthalmic raw materials – history and recent development
 - b) Manufacturing of Ophthalmic lenses – Glass, Plastics and new generation materials.
 - c) ISI Standards for ophthalmic lenses.
2. Ophthalmic lens materials and designs types:
 - a) Aspheric, atoric, High Index lenses and special purpose lenses.
 - b) Absorptive and protective lenses.
 - Theory and practical aspects.
 - Toughening – methods, uses and application
 - Sunglasses – Tinted, Photochromic, Polaroid lenses
3. Progressive and Varifocal lenses:
 - a) Properties and Material
 - b) Bifocal and multifocal lenses.
 - c) Selecting appropriate progressive lens.
 - d) Wavefront design and new types of progressive lens – market availability

Spectacle Frames:

1. Raw materials for spectacle frames and manufacturing methods.
2. Spectacle frame measurements and markings.
3. New trends – latest developments in spectacle frames.
4. Spectacle Options for Patients-
 - a) Photophobia and glare
 - b) Presbyopia
 - c) High refractive errors
 - d) Squint and oculo-motor problems.
5. Guidelines for safety standards for spectacles in-
 - a) Children
 - b) Sports
 - c) Unilateral patient

Paper II: RESEARCH METHODOLOGY

To introduce the concept of scientific Research and the methods of conducting scientific data collection. To introduce the statistical tools of data Analysis and to conduct a Research study and prepare the report writings protocol

1. RESEARCH METHODOLOGY

Introducing to concepts - Definition, objectives, types, approaches, significance - Research method v/s methodology – Research process - Criteria of good research- Research problems encountered by researchers - Defining the Research problem - Defining a Research problem, & its importance- Technique involved in selecting a Research problem - Selecting the Research problem

2. RESEARCH DESIGN

Research design- Meaning & need for research design - Features of a good design - Important concepts relating to research design - Explanation of different types of research designs & their uses - Developing a research plan

3. SAMPLING DESIGN AND METHODS OF DATA COLLECTION:

Census & sample survey- The Sampling process - Sample Size - Determination – Various sampling methods - Measurement & Scaling Techniques - Measurement concept in research - Measurement scales & tests of sound measurement - Technique of developing measurement tools - Sources of errors in measurement - Scaling - definition, classification, important techniques - Derived Attitude Scales - Scale construction techniques- questionnaire Designs Concept of primary & secondary data - Methods of data collection - questionnaire, schedule – Observations, interview, case study.etc. Appropriate method of data collection & guidelines. Data Processing & Analysis - Processing operations - Problems in processing - Unvaried Hypothesis Tests - Hypothesis tests requiring interval data - Hypothesis tests using ordinal data - Hypothesis tests using nominal data –

4. INTERPRETATION AND REPORTWRITING

Meaning of interpretation - Need & technique of data interpretation - Caution in interpretation - Significance & steps in report writing - Mechanics of writing a research report - Marketing Information and decision Support Systems - Marketing Information Systems – Marketing Decision Support Systems - Expert Systems

5. LINEAR REGRESSION & CORRELATIONS

Introduction - Scatter diagram. Correlation and regression - Correlation coefficient & regression equation & restrictions - Multiple regression & other extensions

6. ETHICAL ISSUES IN RESEARCH

The nature of Ethical issues in Research - Ethical Issues in Medical Research - Health Management Research - Introducing to concept of HMR - Steps in the Profess of HMR .

REFERENCES:

1. Research Methodology - Methods & Techniques - C.R. Kothari, 2 Edition (1992), Eastern limited publication.
2. Principles of Research Methodology (2012) – Phyllis G. Supino, Jeffrey S.Borer
3. Epidemiology and Biostatistics (2009) – Kestenbaum, Bryan

ELECTIVE PAPER II- ADVANCE GLAUCOMA

1. Gonioscopy Ophthalmoscopic techniques for evaluation of the optic nerve head Optic disc drawings;
2. Optic disc photography; Flickeranalysis;
3. Plaimetry; Sterophotogrammetry
4. Imageanalyzers,
5. Retinal nerve fiber layerevaluation.

Text Book

1. Becker Shaffer's: Diagnosis and Therapy of the Glaucoma
2. Schield's : Text book of glaucoma

ELECTIVE PAPER II- PEDIATRIC OPTOMETRY

This module is designed to increase the student's understanding about human visual development, its defects and evaluation of Paediatric age groups. Completion of this module ensures the student a sound knowledge in evaluation and problem solving techniques of pediatric population.

1. Anatomical and functional aspects of visual development
2. Abnormal development of vision
3. Methods to assess the development of visual functions in infants
4. Limitations of the currently available techniques
5. Common genetic problems in pediatric age group
6. Diseases of the orbit and anterior segment
7. Methods to assess the development of visual functions in infants
8. Limitations of the currently available techniques
9. Common genetic problems in pediatric age group
10. Diseases of the orbit and anterior segment
11. Disease of the posterior segment and neuro- ophthalmological disorders
12. Ocular manifestation of systemic disorders
13. Case history, Clinical examination and assessment formats of pediatric patients
14. Pediatric dispensing – Spectacles and contact lenses

Paper III: ORTHOPTICS AND VISION THERAPY

1. Non strabismic Binocular Vision Anomalies, Convergence insufficiency, Convergence excess, Fusional vergence dysfunction. Functional Ocular Motor Dysfunction Disorders of Accommodation.
2. Esodeviations, Exodeviations, Mechanically restrictive strabismus, Paralytic strabismus,
3. Horizontal gaze disturbances, Vertical gaze disturbances, Ocular myasthenia gravis, Amblyopia
4. Diagnostic techniques
5. Primary care diagnosis and vision therapy for non-strabismic binocular vision disorders

TextBook:

Erik M. Weissberg: Essentials of clinical binocular vision

Griffin, John R. *Binocular Anomalies: Diagnosis and Vision Therapy*. 4th ed. Boston: Butterworth-Heinemann, 2002.

Press, Leonard J., ed. *Applied Concepts in Vision Therapy with Accompanying Disk*. St. Louis: Mosby, 1997

Scheiman, Mitchell and Wick, Bruce. *Clinical Management of Binocular Vision*. 2nd ed. Philadelphia: Lippincott, Williams & Wilkins, 2002.

VonNoorden, Gunter K. *Binocular Vision and Ocular Motility: Theory and Management Of Strabismus*. 6th ed. St. Louis: Mosby, 2001.

PAPER III: CLINICAL OPTOMETRY – II AND ADVANCED DIAGNOSTICS

CLINICAL OPTOMETRY

1. Lacrimal Apparatus
2. Orbit
3. Lid
4. Conjunctiva
5. Disease of Lens
6. Disease of Cornea,
7. Disease of Sclera.
8. Disease of Uveal tract
9. Ocular Motility

Text Book:

1. Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone, 1990
2. Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 6th edition, Butterworth - Heinemann, 2007
3. Myron Yanoff and Jays Duker : Ophthalmology

ADVANCED DIAGNOSTICS

This course gives both in-depth theoretical knowledge and clinical exposure to ocular diseases & the diagnostic procedures. The outcomes of this course are: Through understanding of the causes and treatment of ocular diseases and referral criteria at appropriate stages through didactic lectures and clinical postings.

1. Anterior segment diseases
2. Posterior segment diseases
3. NeuroOphthalmology
4. Diagnostic procedures
5. Ocular therapeutics

Paper III : NEURO OPTOMETRY

This course provides understanding of the issues of visual functioning which will also be related to clinical assessment issues. Topics covered include: processing of visual information in mammals, repair in the nervous system of vertebrates, objective assessment of visual pathway, review of brainstem and brainstem anatomy, review of amino acid chemistry related to brain neurochemistry, glutamate and neurotoxicity in glaucoma, visual attention and arousal systems, brainstem mechanisms in the control of eye movements, visually directed activities-reading.

Parietal factors in vision, frontal factors in vision, after effects and inter-ocular transfers.

Topic:

1. Pupils
2. CN III disorders
3. CN II disorders
4. CN IV disorders
5. CN V disorders
6. CN VI disorders
7. Papilledema
8. AAION
9. CVD –CAD
10. Migraine
11. NAION
12. Opticneuritis
13. Neuroimaging
14. Nystagmus
15. Brainstem motility
16. Myasthenia

References:

1. Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 8th edition, Butterworth - Heinemann
2. Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone,

ELECTIVE PAPER II - EYE BANKING

1. Introduction to Eye Banking, History & milestones, Requirements in eye bank
2. Duties and responsibilities of eye bank personals, Indications and contraindications, Instruments
3. Tissue retrieval, Handling of tissue, preservation techniques
4. Evaluation techniques, specular microscopy, Documentation,
5. Legal aspects, keratoplasties, Advanced Keratoplasties

Text Book:

1. Dean Vavra: Eye Banking
2. Smolin and thoft,s :The Cornea Scientific foundation and clinical practice ,fourth edition
3. T.BredehornMayr : Eye Banking, Karger

SECOND YEAR

Paper I: 1. CORNEA AND CONTACT LENS

1. Current concepts in anatomy and Physiology of the cornea and tearfilm Microbiology and Immunology in relation to Contact Lenswear
2. Use of Slit Lamp in Contact Lens Practice
3. Review of Contact Lens solution contents The effects of wear on Contactlenses
4. Soft Contact Lens complications Causes andmanagement
5. RGP complications: management Keratoconus; Overview and contact lensfitting
6. Contact lens for children Contact Lenses for aphakics Bandage contact lenses
7. Contact Lenses in post refractive surgery/PRK
8. Lens choice for Astigmatism Presbyopia
 - a) Soft Contact Lens Design
 - b) R.G.P. Lens Design

Text books:

- IACLE modules 1 -10
- CLAO Volumes 1, 2,3
- Anthony J. Phillips: Contact Lenses, 5th edition, Butterworth-Heinemann, 2006 Elisabeth A. W. Millis: Medical Contact Lens Practice, Butterworth-Heinemann, 2004
- E S. Bennett, V A Henry :Clinical manual of Contact Lenses, 3rd edition, Lippincott Williams and Wilkins, 2008

Paper I: 2. LOW VISION AND REHABILITATION

1. Clinical evaluation of low vision patients – prognostic & psychological factors; Psycho- social impact of lowvision
2. Types of low vision aids – Optical aids, non-optical aids & electronicdevices
3. Clinical evaluation – assessment of visual acuity, visual field, selection of low vision aids,
4. Optics of Low VisionLenses.
5. Variables affecting success and how to improveresults.
6. New developments and futuredirections.
7. Low vision care of mentallyretarded MobilityTrainingInstruction & training
8. Pediatric Low Vision careLow vision aids – dispensing & prescribing aspects
9. Visual rehabilitation & counseling Legal aspects of Low vision in India CaseAnalysis

Text books:

1. Christine Dickinson: Low Vision: Principles and Practice Low vision care, 4th edition, Butterworth-Heinemann,1998
2. E Vaithilingam: practice of Low vision – A guidebook,
3. A J Jackson, J S Wolffsohn: Low Vision Manual, Butterworth Heinnemann,2007

Paper II: RECENT ADVANCEMENT IN OPTOMETRY

In this course latest articles published in Optometry and vision science journals will bediscussed. This will enable the students to keep abreast of latest developments in the field of Optometry and visionscience.

Paper III :

- Special Clinic – I
- Project/Dissertation – I
- Special Clinic – II
- Project / Dissertation – II

MODEL PAPER

M.Sc. OTO– I

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper I

Basic Sciences and Clinical Optometry-I, Community Optometry & Public Health, Advance
Dispensing Optics - I

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- | | | |
|-----|--|-----------|
| Q.1 | Describe the development of eye. | 25 |
| Q.2 | Describe the anatomy of lacrimal apparatus. | 25 |
| Q.3 | How intraocular pressure is maintained & what are the various factors controlling the IOP? | 25 |
| Q.4 | Write Shorts notes on: | 12½x 2=25 |
| | a) Rose Bengal test. | |
| | b)Fluorescein dye in ophthalmology. | |

MODEL PAPER

M.Sc. OTO– I

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper II

Research Methodology, Orthoptics & Vision Therapy, Elective: Advanced Glaucoma, Paediatric Optometry- II

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- | | | |
|-----|---|-----------|
| Q.1 | Describe vision evaluation in children. | 25 |
| Q.2 | Explain the structure seen in gonioscopy and their clinical application. | 25 |
| Q.3 | Write short note on: | 12½x 2=25 |
| | a. Congenital glaucoma | |
| | b. Congenital cataract | |
| Q.4 | Describe the ocular feature in papilledema & how it difference with optic neuritis. | 25 |

MODEL PAPER

M.Sc. OTO– I

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper III

Clinical Optometry-II & Advanced Diagnostic, Neuro Optometry, Elective: Eye Banking- III

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- | | | |
|-----|--|----|
| Q.1 | Describe various methods & media for preservation of cornea. | 25 |
| Q.2 | How will you evaluate a case of mature cataract for surgery? | 25 |
| Q.3 | Describe various diagnostic tests for dry eye. | 25 |
| Q.4 | Sign & Symptoms of acute iridocyclitis& how will you manage a case of acute iridocyclitis. | 25 |

MODEL PAPER

M.Sc. OTO– II

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper I

Cornea & Contact Lens, Low Vision & Rehabilitation - I

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- Q.1 Describe how the corneal transparency is maintained? 25
- Q.2 Describe various types of contact lenses their advantage are spectacles. 25
- Q.3 Write short notes on: 12 ½ x 2=25
- a. Low vision ADIS.
- b. Visual blindness.
- Q.4 What is keratoconus& how will you manage a case of progressive keratoconus? 25

MODEL PAPER

M.Sc. OTO– II

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper II

Recent Advancement in Optometry-II

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- | | | |
|-----|--|-----------|
| Q.1 | Write short notes on: | 12½x 2=25 |
| | a. IOL master. | |
| | b. Non-contact tonometry (NCT). | |
| Q.2 | Describe recent advances in glaucoma surgery. | 25 |
| Q.3 | Explain the principal of OCT & its application in various retinal disorders. | 25 |
| Q.4 | Describe recent advances in orthoptics. | 25 |

MODEL PAPER

M.Sc. OTO– II

M.Sc. Ophthalmic Techniques & Optometry

Part-I (Main) Examination month year

Paper III

Special Clinic –I &Special Clinic –II

Time: Three Hours

Maximum Marks: 100

Students shall be allowed to take only one supplementary copy long with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answer at different places in the answer book

Attempt all Questions.

- | | | |
|-----|--|----|
| Q.1 | What are the speciality clinics explain their importance. | 25 |
| Q.2 | How the angle of deviation is measured in squint clinic. | 25 |
| Q.3 | Write the difference. | 25 |
| | a. Paralytic & non paralytic squint. | |
| | b. Papilledema & Optic neuritis. | |
| Q.4 | What is binocular vision? Describe its components & tests related to binocular vision. | 25 |