

SPECIALTY: MIDWIFERY (MID)

PAPER: CASE STUDY

Credit Value: 14

Objective/s of the paper: Students should be able to identify real life situations that would provoke critical thinking and problem solving approach Nature of the Exam: written Format of the Exam:

Exam Paper	Option	Different sections of the paper	Duration per section	Mark allocated	%
Case Study	MID	SECTION A	6h	100	100
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ BASIC SCIENCE
- ☐ PUBLIC HEALTH
- ☐ MOTHER AND CHILD CARE
- ☐ MOTHER AND CHILD PATHOLOGIES
- ☐ OBSTETRICAL AND GYNECOLOGICAL COMPLICATIONS AND EMERGENCUES

PAPER: MOTHER AND CHILD CARE

Credit Value: 2

Objective/s of the paper: Students should be able to understand preconception, physiology during pregnancy, minor disorders and their management, be able to differentiate the stages of labour, the midwifery role has well as midwifery care, to provide holistic care to their pregnant women to the onset to labour and assist the family to maintain maternal health across the life span Nature of the Exam: written

Format of the Exam:

Exam Paper	Option	Different sections of the paper	Duration per section	Mark allocated	Percentage
MOTHER AND CHILD CARE	MID	SECTION A: MCQ	15 min	30 marks	30%
		SECTION B: SHORT ANSWER	1h 15% min	30 marks	30%
		SECTION C: LONG ESSAY	1 h 30 min	40 marks	40%
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ PREGNANCY
- ☐ ANTEPARTUM CARE
- ☐ LABOUR, INPARTUM AND POSTPARTUM
- ☐ FAMILY PLANNING

PAPER: MOTHER AND CHILD PATHOLOGY

Credit Value: 3

Objective/s of the paper: Students should be able to identify problems related to diseases in pregnancy, and plan management using the nursing process and care plan Nature of the Exam: WRITTEN Format of the Exam:

Paper	Option	Different sections	Duration	Mark	%
MOTHER AND CHILD PATHOLOGY	MID	SECTION A : MCQ	15 min	30 marks	30%
		SECTION B: SHORT ANSWER	1h 15min	30 marks	30%
		SECTION C: LONG ESSAY	1h 30 min	40 marks	40%
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ DIORDERS IN PREGNANCY
- ☐ NEONATAL DIORDERS

PAPER: OBSTETRICAL AND GYNECOLOGY COMPLICATION AND EMERGENCY

Credit Value: 3

Objective/s of the paper: Students should be able to promptly identify obstetrical complication and initiate initial care and sick for assistant (referral) Nature of the Exam: written Format of the Exam:

Exam Paper	Option	Different sections	Duration	Mark	Percentage
OBSTETRICAL AND GYNECOLOGY COMPLICATION	MID	SECTION A MCQ :	15 min	30 marks	30%
		SECTION B: SHORT ANSWER	1h 15 min	30 marks	30%
		SECTION C: LONG ESSAY	1h 30 min	40 marks	40%
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ DYSTOCIA
- ☐ HAEMORRHAGE IN PREGNANCY
- ☐ TOXAEMIA IN PREGNANCY
- ☐ INFERTILITY

PAPER: MIDWIFERY PRACTICAL

Credit Value: 10

Objective/s of the paper: Students should be able to provide practical holistic care during pregnancy, labour and puerperium and infant welfare care: showing manual dexterity, good communication skill and good midwife and client relationship Nature of the Exam: written Format of the Exam:

Exam Paper	Option	Different sections of the paper	Duration per section	Mark allocated	Percentage
PRACTICAL	MID	1. Prenatal or antenapartum care 2. Intrapartum care 3. Postpartum care 4. Infant wellfare care (iw)	4H	100	100
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ PRENATAL OR ANTENAPARTUM CARE
- ☐ INTRAPARTUM CARE
- ☐ POSTPARTUM CARE
- ☐ INFANT WELFARE CARE (IW)

PAPER: BASIC SCIENCE IN MIDWIFERY I

Credit Value: 6

Objective/s of the paper: Students should be able to show mastery of Anatomy and Physiology of the Human body, mastery of safe maternal and Infant Nutrition, proof of basic diagnostic procedures as well as safe drug use for mother and child

Nature of the Exam: written

Format of the Exam:

Exam Paper	Option	Different sections	Duration	Mark	%
BASIC SCIENCE IN MIDWIFERY I	MID	SECTION A: MCQ	15 min	30 mrks	30 %
		SECTION B: SHORT ANSWER	45min	30 marks	30 %
		SECTION C: LONG ESSAY	1H	40 marks	40 %
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ ANATOMY AND PHYSIOLOGY I AND II
- ☐ NUTRITION (Infant and Maternal)
- ☐ Basic LABORATORY SCIENCE
- ☐ DIAGNOSTIC PROCEDURE
- ☐ GENERAL PHARMACOLOGY
- ☐ BASIC NURSING

PAPER: BASIC SCIENCE IN MIDWIFERY II

Credit Value: 6

Objective/s of the paper: Students should be able to Understand the development of fetus (understand fetal growth, Understand bacterial prevention, save drugs use in midwifery

Nature of the Exam: written Format of the Exam:

Exam Paper	Option	Different sections of the paper	Duration per section	Mark allocated	Percentage
BASIC SCIENCE IN MIDWIFERY II	MIDWIFERY	SECTION A: MCQ	15 min	30	30%
		SECTION B: SHORT ANSWER	45 min	30	30%
		SECTION C: LONG ESSAY	1H	40	40%
TOTAL MARK				100	100

Contents of the different sections of the paper:

- ☐ EMBRYOLOGY
- ☐ MICROBIOLOGY
- ☐ PHARMACOLOGY FOR MIDWIFERY
- ☐ TOXICOLOGY

SPECIALTY : OPTICIAN/ CLINICAL OPTOMETRY (OPT)

PAPER: CASE STUDY

Value: 14

Duration: 06 hrs

Objective/s of the paper: student's expected to be able to analyze and manage cases in point.

Format of the exam

Exam paper	Spécialty/ option	Different sections of the paper		Duration	percentage (%)	Mark allocated
CASE STUDY	OPT	<u>SECTION 1 :</u> CONTACT LENS	A- MCQ (5mrk)	1.12hrs	20	20
			B – structural questions (5mrk)			
			C – essay (10mrk)			
		<u>SECTION 2 : LOW VISION & REHABILITATION</u>	A- MCQ (5mrk)	1.12hrs	20	20
			B – structural questions (5mrk)			
			C – essay (10mrk)			
		<u>SECTION 3 :</u> OCULAR PATHOLOGY	A- MCQ (5mrk)	1.12hrs	20	20
			B – structural questions (5mrk)			
			C – essay (10mrk)			
		<u>SECTION 4 :</u> CLINICAL REFRACTION	A- MCQ (5mrk)	1.12hrs	20	20
			B – structural questions (5mrk)			
			C – essay (10mrk)			
		<u>SECTION 5 :</u> OPHTHALMIC LENS & DISPENSING OPTICS	A- MCQ (5mrk)	1.12hrs	20	20
			B – structural questions (5mrk)			
			C – essay (10mrk)			

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

This paper will obligatorily have 05 sections.

SECTION 1 : CONTACT LENS / 20 MARKS

Objective/s of the section : provide knowledge of contact lens that will help the students meet the ultimate objectives of this program.

Student will be evaluated on the content below. This section will obligatorily have 03 parties :

Part A : 05 MCQs on 05 marks, that is 01 mark per MCQ.

Part B : 05 structural questions on 05 marks, that is 01 mark per question. □ Part C : 01 case study (practical question) on 10 marks.

Content :

Contact lens history & development. Benefits of contact lens over spectacle.

Manufacturing methods-spin cast, Lethe cut, Cast modeling.

Slit lamp Examination technique

Cornical topography- Keratometry& Extended Keratometry

Contact lensoptics-Contact lens& spectacle lens. Back vertex calculation.

Contact lens & Tear lens system.

Classification of contact lens & its material (soft&RGP); Material property.

Contact lens terminology. RGP & soft lens design. FDA classification of contact lensmaterial.

Patient selection & prescreening. Indications & contra indications of contact lens.

Soft sPWrical contact lens fitting &Assesment.

Soft contact lens case & maintenance.

SPWrical RGP contact lens fitting & assessment.

RGP contact lens care & maintenance.

Contact lens fitting in astigmatism.

Contact lens fitting in keratoko OTE.

Contact lens fitting in children.

RGP lenses — low D.K. and high D.K. lenses.

Instructions regarding handling and care of lenses. - Cosmetic and prosthetic contact lenses.

Extended wear lenses versus Daily wear

Disposable lenses

Contact lens — Toric, Bifocal, Multifocal.

Therapeutic lenses / Bandage lenses.

Contact lens solutions — principle of action, compositions writing prescription to the lab.

- Ordering contact lenses —

Contact lens — modifications of finished lenses (RGP).

Checking the parameters.

Recent advances in contact lenses.

Follow up examinations

Contact lens complications and their management. conformers.

- Prosthetic eye fitting procedures &

SECTION 2 : LOW VISION & REHABILITATION / 20 MARKS

Objective/s of the section : provide knowledge of low vision aids & visual rehabilitation that will help the students meet the ultimate objectives of this program.

Student will be evaluated on the content below. This section will obligatorily have 03 parties :

Part A : 05 MCQs on 05 marks, that is 01 mark per MCQ.

Part B : 05 structural questions on 05 marks, that is 01 mark per question. □ Part C : 01 case study (practical question) on 10 marks.

Content :

Definition-old, new, proposed

Grades of low vision

Statistics/ Epidemiology

Relation between disorder, impairment & handicapped

Low vision optics

Magnification-relative distance/ relative size/ approach/angular Optics of Galilean&Keplarian telescope- advantage/disadvantage, significance of exit & entrance pupil.

Optics of spectacle magnifier/ determination/ calculation/ disadvantage/advantage. - Optics of stand magnifier, significance of equivalent viewing distance & calculations.

Telescope- distance/ near/ telemicroscope/ monocular/ binocular/ biopic.

Determination of decentration of lenses /prism/calculation/Lebensohn's formula/simple diotric formula.

Hand held magnifier-illuminated/ non-illuminated.

Spectacle magnifier / half eye/ prism correction/ bar magnifier/ CCTV/ magni-cam/ low vision imaging system or V-max / contact lens & IOL telescope.

Low vision examination: Task/ Goal oriented history-medical/ visual/ psychological history/ task analysis/ mobility/ distance vision/ near vision / daily living/ illumination/ work & school. Visual acuity measurement-distance/ near/ use of log MAR chart (distanced near)/ light house, picture chart/ visual field/ Amsler chart/ contrast sensitivity/ overview of glare testing. Low vision refraction.

Assessment & prescription of low vision devices-optical/ non-optical/ rehabilitation services. Non-optical devices-pen/umbrella/ boldline note book/ illumination/ letter writer/ environmental modification/ signature guide/ needle threader/ eccentric viewing strategies.

Overview of Rehabilitation Services:- definition/ implementation/ vocational guidance/ educational guidance/ mobility & orientation training / special teacher/ special school/ Braille system/ integrated system/referral center- activity/ support/ loan. - Overview of systematic / retinal diseases in relation to low vision:- acromatopsia/ LMBB, syndrome/ labers congenital anomaly/ down syndrome/ retinitis pigmentosa/ diabetic retinopathy/ optic atrophy/ albinism/ aniridia.

Counseling of low vision patient/ parents/ guardians/relatives.

SECTION 3 : OCULAR PATHOLOGY / 20 MARKS

Objective/s of the section : provide knowledge of ocular disease that will help the students meet the ultimate objectives of this program.

Student will be evaluated on the content below. This section will obligatorily have 03 parties :

Part A : 05 MCQs on 05 marks, that is 01 mark per MCQ.

Part B : 05 structural questions on 05 marks, that is 01 mark per question.

Part C : 01 case study (practical question) on 10 marks.

Content :

Anterior segment ocular diseases involving orbit, eyelids, adnexa, conjunctiva, cornea, uvea, sclera, anterior chamber, iris and lens. Symptomatology, clinical signs, diagnosis, pathogenesis, pathophysiology, systemic disease relationships and treatment of degenerative, infections and inflammatory conditions affecting these structures.

Disease of the Lids — Congenital Deformities of the Lids .Oedema of the Lids.inflammatory Conditions of the Lids.Deformities of the Lid Margins.Deranged Movement of the Eyelids. Neoplasms of the Lids. Injuries of the Lids. Diseases of the Lachrymal Apparatus-. Dry Eye. Disease of the Lachrymal Gland.

Disease of the Lachrymal Passages. Operations for Chronic Dacryocystitis. Disease of the Conjunctiva

- Subconjunctival hemorrhage Infective Conjunctivitis. Follicular Conjunctivitis. Granulomatous Conjunctivitis. Allergic Conjunctivitis. Conjunctivitis Associated with Skin conditions.

Degenerative conditions of the Conjunctiva. Vitamin - A Deficiency. Cysts and Tumours of the Conjunctiva. Conjunctival Pigmentation. Injuries of the Conjunctiva.

Disease of the Cornea —Congenital Anomalies. inflammation of the Cornea

(Keratitis). Superficial Keratitis. Deep Keratitis. Vascularisation of Cornea. Opacities of the Cornea. Keratoplasty. Corneal Degenerations. Corneal Dystrophies. Corneal Pigmentation. Corneal Injuries. Refractive Corneal Surgery. Corneal Ulcer (Bacterial, Viral, Fungal)

Disease of the Sclera- Episcleritis. Scleritis. Staphyloma of the Sclera. Blue Sclerotic Scleromalacia Perforans. Nanophthalmos. Injuries of the Sclera.

Disease of the Iris.-. Congenital Anomalies. inflammations (Anterior Uveitis). Specific Types of Iridocyclitis. Degenerations of the Iris. Cysts and Tumours of the Iris. Injuries of the Iris.

Disease of the Ciliary Body- Inflammations of the Ciliary Body. Purulent Iridocyclitis (Panophthalmitis). Evisceration. Sympathetic Ophthalmia. Vogt-Koyanagi — Harada Syndrome. Tumours of the Ciliary body. Injuries of the Ciliary body. Glaucoma- . Formation of Aqueous Humor. Drainage of Aqueous. Intraocular Pressure (IOP). Ocular Rigidity.

Tonography. Developmental Glaucoma (Buphthalmos). Primary Narrow Angle Glaucoma. Primary

Open Angle Glaucoma. Normotensive Glaucoma. Ocular Hypertension. Secondary Glaucoma. Surgical

Procedures for Glaucoma (Steps Only), YOGPI, trabeculectomy. Laser Procedure in Glaucoma. Artificial Drainage Devices in Glaucoma Surgery (Moltenoj).

Disease of the Lens- Congenital Malformations. Cataract. Congenital and Developmental

Cataract. Senile Cataract. Traumatic Cataract. Complicated Cataract. Secondary

Cataract. After Cataract. Dislocation of the Lens. Surgical Procedures for Removal of the Lens (Operative Steps Only). Phacoemulsification (ICCE, ECCE, IOL). Small Incision Cataract Surgery (Manual Phaco). Intraocular Lens implantation-AC+PC, IOL.

Diseases of the Vitreous Humor- Congenital Anomalies. Vitreous Opacities. Hereditary Vitreous — Retinal Degeneration's. Vitreous Haemorrhage. Detachment of Vitreous Humor. Vitreous Surgery. Methods of clinically assessing the posterior segment (direct & indirect ophthalmoscopy)

Disease of the Retina- Congenital & Dev. Defects. Inflammation of the Retina (Retinitis). Retinal Vasculitis. Oedema of the Retina. Haemorrhage of the Retina. Vascular Occlusion. Retinal Arteriosclerosis. Retinopathies. Retinal

Telangiectasis. Degeneration's of the Retina. Detachment of the Retina. Surgical

Procedures for Retinal Detachment. Tumours of the Retina. Phakomatoses, Injuries of the Retina.

Disease of the Optic Nerve- Congenital Anomalies. Papilloedema. Inflammation of the Optic Nerve

(Optic-Neuritis). Ischaemic Optic Neuropathy. Optic Atrophy. Tumours of the Optic Nerve. Injuries of the

Optic Nerve. Symptomatic Disturbances of Visual Function — Visual

Field Defects. Amblyopia. Amaurosis. Night Blindness. Day Blindness. Defects in Color Vision. Congenital Word Blindness. Malingering. Neuro — eye disease: Evaluation of optic nerve disease. Clinical features of optic nerve dysfunction. Optic disc changes. Optic atrophy. Special investigation. Classification of optic neuritis. Optic neuritis and demyelination. Systemic features of multiple sclerosis, Special investigation. Optic neuritis. Other causes of optic neuritis:

Parainfectious optic neuritis. Infectious optic neuritis. Non-arteritic anterior ischaemic

optic neuropathy. Arteritic anterior ischaemic optic neuropathy. Clinical features of giant cell arteritis. Special investigation. Arteritic anterior ischaemic optic neuropathy. Leber hereditary optic neuropathy: hereditary optic atrophies: Kjer syndrome. Behr syndrome.

Wolfram syndrome: Alcohol-tobacco amblyopia: Drug-induced optic neuropathies:

PAPILLOEDEMA: Raised intracranial pressure - Causes. Hydrocephalus. Systemic features.

Clinical features of papilloedema. Differential diagnosis. CONGENITAL OPTIC NERVE ANOMALIES: Without neurological associations, with neurological associations, Optic disc coloboma. PUPILLARY REACTION: Applied anatomy. Abnormal pupillary reactions: NYSTAGMUS: Classifications and Causes: SUPRANUCLEAR DISORDER OF EYE MOVEMENTS:

Conjugate eye movements, Supranuclear gaze palsies: III, IV and VI THIRD NERVE

DISEASE: Applied anatomy and Clinical: DISORDERS OF CHIASM, DISORDERS OF RETROCHIASMAL PATHWAYS AND CORTEX, OCULAR MYOPATHIES AND RELATED DISORDERS, NEUROFIBROMATOSIS.

SECTION 4: CLINICAL REFRACTION / 20 MARKS

Objective/s of the section : provide knowledge of clinical refraction that will help the students meet the ultimate objectives of this program.

Student will be evaluated on the content below. This section will obligatorily have 03 parties :

Part A : 05 MCQs on 05 marks, that is 01 mark per MCQ.

Part B : 05 structural questions on 05 marks, that is 01 mark per question.

Part C : 01 case study (practical question) on 10 marks.

Content :

Ophthalmic Case Historian: Demographic data, chief complaints, secondary complaints, ocular history, medical history, drugs and medications, family ocular history, family medical history, social history, review of system, few example of history writing. Recording Visual Acuity: Distance — Snellens and log MAR. near-points/'M'/RS, use of Baily-lovie word reading chart.

Objective Refraction: Streak Retinoscopy — all procedures to use streak retinoscope: static and dynamic retinoscopy, different methods of dynamic retinoscopy — MEM, Nott's, Sheard's, Low and

high neutral, Bells, Cross, Taits. Other methods of retinoscopy-Radical, near (Mahandraj, Chromoretinoscopy, String Lensbar, use of objective and aUto refractor.

Subjective Refraction: Monocular Distance — Classic fogging, testing of astigmatism under fog fixed astigmatic dial (clock dial), rotary astigmatic dial, combination of fixed and rotary dial (Fan and Block test), J.C.C. Duochrome or Bichrome, Binocular balancing — alternate occlusion, prism dissociation, dissociated duochrome balance, Borish dissociated logging, equalization Binocular Distance — T.I.B. (Turville Infinity Balance), Polarized — Target and polarized filter, fogging. Near subjective refraction. Cycloplegic refraction, cycloplegia, sudden unfogging, Borish delayed sPWrical end point, pinhole estimation of refractive error, stenopaic slit refraction, measurement of vertex distance, distometer, use of subjective autorefractor. Different methods of measuring amplitude of accommodation.

Correction of Presbyopia — Different methods of stimulation of tentative presbyopic addition — amplitude of accommodation, J.C.C., NRA-PRA balance, Bichrome, Plus Build- up, based on age, Dynamic retinoscopy. Occupational consideration, finalization of odd for near and intermediatedifferent options of correction.

Measurement of IPD and significance. Final discussion with the patient. Writing prescription of power and counseling- Assessment of children Vision & Paediatric evaluation, diagnosis & management.

Strabismus & Anisomyopia.

Non- Strabismic Binocular Disorders.

Neuro- Optometric Rehabilitation.

Evaluation, Diagnosis & Optometric management of children with mental retardation C.P. Dyslexia, Multiple Sensory Motor Handicap.

Visual Disorders in senior citizens, evaluation, diagnosis+ management.

Sports vision.

Refraction in special cases (pseudophakia, aphakia, irregular corneal astigmatism, coloboma of iris, choroids, retina, nystagmus, post R.K., PRK,

LASIK)

Congenital cataract, glaucoma.

Patient with low vision.

Patient with anisometropia (Anisokonia) - Monocular & binocular subjective refraction.

SECTION 5 : OPHTHALMIC LENS & DISPENSING OPTICS / 20 MARKS

Objective/s of the section: provide knowledge of ophthalmic lens & dispensing optics that will help the students meet the ultimate objectives of this program.

Student will be evaluated on the content below. This section will obligatorily have 03 parties:

Part A : 05 MCQs on 05 marks, that is 01 mark per MCQ.

Part B : 05 structural questions on 05 marks, that is 01 mark per question.

Part C : 01 case study (practical question) on 10 marks.

Content:

Ophthalmic lens: Characteristics of lenses : Introduction. Spherical lenses. Plano-cylindrical lenses. Sphero-cylindrical lenses. Designation of lens power. Power of dealing with problems: Dealing with clients, Common client problems, dealing with professional colleagues, dealing with the laboratories Special needs dispensing: Occupational dispensing, Hazards in the work place, Occupational health safety legislation, Common hazards. Eye protection: Industrial eye protection, Sport, Standards covering eye protection, Lens materials & impact resistance, Frame & eye protection.

PAPER: OPTOMETRY SCIENCE

Value: 05

Objective/s of the paper: student's expected to be able to demonstrate an understanding of the various concepts in the basic sciences.

Format of the exam

Exam paper	option	Different sections of the paper	duration	percentage (%)	Mark allocated
OPTOMETRY SCIENCE	OPT	SECTION A- MCQ	45MIN	20	20
		SECTION B- structural questions	30MIN	20	20
		SECTION C – short ESSAY	30MIN	20	20
		SECTION D – long ESSAY	75MIN	40	40

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 04 sections : □

section A : 10 MCQs on 20 marks, that is 02 marks per MCQ.

- section B : 05 structural questions on 20 marks, that is 04 marks per question.
- section C : 01 case study (short practical question) on 20 marks. □ section D : 01 case study (long practical question) on 40 marks.

Content :

- Introduction to optometry

Understanding optometry as a health care profession. Relationship of the profession to others in the eye care field, including ophthalmology, opticianry etc. Opportunities available to the optometrist as a professional. Attitudes necessary for the study and practice. The history of the development of the profession in Cameroon, Africa and globally. □ Fundamentals of nursing The nursing process - Analysis and interpretation of results.

- The concept of nursing diagnosis:
- The nurse's intervention;
- The nursing care plan and register:

Nursing core

Planification First Aid

First aid. Definition, concept of first aid, hemorrhage (bleeding), fainting, choking and drowning, Shock and electrocution, coma (unconsciousness) and heat stroke (sun burn), fractures, sprains and strains and dislocations, poisoning, animal bites and insect stings,

□ Ophthalmic instrumentation

Detailed study of the Principles of operation, types, optical properties, constructions, adjustments and applications of the following Instruments and Devices:

- Binoculars, telescopes and projectors.
- Simple and Compound Microscopes (with Huygens and Ramsden Eye pieces and oil immersion objectives). - Spectrometer.
- Radiuscope
- Retinoscopes
- Standard Tests Charts.
- Autorefractometer- subjective and objective types - Ophthalmoscopes- direct and indirect types.
- Refractometers- Auto refractors, Dioptrom
- Slit lamp Biomicroscope
- Keratometer
- Lensometer
- Trial case lenses-best forms.
- Trial frame design.
- Cross cylinder.

□ Geometric and physical optics

What is light- dual nature- particle & wave nature, speed, wave length & frequency of light? Fermats' principle- laws of relation & refraction at a plane surface using Fermats' principle. Snells' law, relative and absolute refractive indices, total internal reflection and Critical angle, refraction by plane parallel slab of glass: molecular basis of reflectivity (basic index). Geometrical path length & optical path length of rays, Concept of wave fronts & rays, concept of vergence /divergence, convergence. Refraction by spherical surfaces- convex & concave, Derivation of vergence equation, focal points, deportee power, image point, lateral & axial magnification, simple numerical. Thin Lens- shapes, derivation of lens makers' formula, thin lens vergence equation, equivalent focal length of two thin lenses separated by a distance & placed in contact, lateral magnification of thin lenses in contact, simple numerical, concept of reduced systems. Thick Lens- Cardinal Points& planes, front & back vertex power, matrix theory in paraxial Optics to locate positions of cardinal planes. Different types of aberrations & their effects. Prism- Dispersion of prism, reflecting prisms, prisms diopters. Geometrical theory of optical fibers.Uses of optical fibers. The propagation of light. The behaviour of light on reaching a new medium, Reflection and refraction at a plane surface. Internal refraction at plane surface, prisms and optical fibres. Reflection and refraction at spherical surfaces, cylindrical and spherocylindrical lenses. Lens, systems and. Thick lenses. Aberration and image quality. The principles of optical instruments. The Eye as an optical instrument, Photometry. The application of fundamental optics to the human eye.

What is light- dual nature- particle & wave nature, speed, wave length & frequency of light? Fermats' principle- laws of relation & refraction at a plane surface using Fermats' principle. Snells' law,

relative and absolute refractive indices, total internal reflection and Critical angle, refraction by plane parallel slab of glass: molecular basis of reflectivity (basic index). Geometrical path length & optical path length of rays, Concept of wave fronts & rays, concept of vergence /divergence, convergence. Refraction by spherical surfaces- convex & concave, Derivation of vergence equation, focal points, decenter power, image point, lateral & axial magnification, simple numerical. Thin Lens- shapes, derivation of lens makers' formula, thin lens vergence equation, equivalent focal length of two thin lenses separated by a distance & placed in contact, lateral magnification of thin lenses in contact, simple numerical, concept of reduced systems. Thick Lens- Cardinal Points & planes, front & back vertex power, matrix theory in paraxial Optics to locate positions of cardinal planes. Different types of aberrations & their effects. Prism- Dispersion of prism, reflecting prisms, prisms diopters. Geometrical theory of optical fibers. Uses of optical fibers. The Principle of Optical Interference. Division of wave front and amplitude. Young's interferometer in thin films. Non-reflecting films. The wedge film. Newton's rings. Diffraction of light waves. The single slit diffraction. Circular aperture diffraction and its relation to the resolving power of lenses. The resolving power of lenses and the eye. The grating, holography production and detection of polarised light. Plane, circular and elliptical polarization.

PAPER: OPTOMETRY PATHOLOGY

Value: 05

Objective/s of the paper: To assess the student's knowledge and understanding on basic pathophysiology of various pathologies, explain and relate pathological changes and clinical features resulting from these.

Format of the exam

Exam paper	Spécialty / option	Different sections of the paper	duration	percentage (%)	Mark allocated
OPTOMETRY PATHOLOGY	OPT	SECTION A- MCQ	45MIN	20	20
		SECTION B- STRUCTURAL QUESTIONS	30MIN	20	20
		SECTION C – SHORT ESSAY	30MIN	20	20
		SECTION D – LONG ESSAY	75MIN	40	40

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 04 sections : ☐ section A : 10 MCQs on 20 marks, that is 02 marks per MCQ.

- ☐ section B : 05 structural questions on 20 marks, that is 04 marks per question.
- ☐ section C : 01 case study (short practical question) on 20 marks. ☐ section D : 01 case study (long practical question) on 40 marks.

Content :

- ☐ Anterior segment ocular diseases involving orbit, eyelids, adnexa, conjunctiva, cornea, uvea, sclera, anterior chamber, iris and lens. Symptomatology, clinical signs, diagnosis, pathogenesis, pathophysiology, systemic disease relationships and treatment of degenerative, infectious and inflammatory conditions affecting these structures.
- ☐ Disease of the Lids — Congenital Deformities of the Lids .Oedema of the Lids.inflammatory Conditions of the Lids.Deformities of the Lid Margins.Deranged Movement of the Eyelids.
Neoplasms of the Lids. Injuries of the Lids. Diseases of the Lachrymal Apparatus-. Dry Eye. Disease of the Lachrymal Gland.
- ☐ Disease of the Lachrymal Passages. Operations for Chronic Dacryocystitis. Disease of the Conjunctiva - Subconjunctival Haemorrhage Infective Conjunctivitis. Follicular Conjunctivitis. Granulomatous Conjunctivitis. Allergic Conjunctivitis. Conjunctivitis Associated with Skin conditions. Degenerative conditions of the Conjunctiva. Vitamin- A Deficiency. Cysts and Tumours of the Conjunctiva.Conjunctival Pigmentation.Injuries of the Conjunctiva.

- Disease of the Cornea —Congenital Anomalies.inflammation of the Cornea (Keratitis).Superficial Keratitis.Deep Keratitis.Vascularisation of Cornea.Opacities of the Cornea.Keratoplasty.Corneal Degenerations.Corneal Dystrophies.Corneal Pigmentation.Corneal Injuries.Refractive Corneal Surgery. Corneal Ulcer (Bacterial, Viral, Fungal)
- Disease of the Sclera- Episcleritis.Scleritis.Staphyloma of the Sclera. Blue Sclerotic Scleromalacia Perforans. Nanophthalmos.Injuries of the Sclera.
- Disease of the Iris.-. Congenital Anomalies.inflammations (Anterior Uveitis).Specific Types of Iridocyclitis.Degenerations of the Iris.Cysts and Tumours of the Iris.Injuries of the Iris.
- Disease of the Ciliary Body- Inflammations of the Ciliary Body.Purulent Iridocyclitis (Panophthalmitis).Evisceration.Sympathetic Ophthalmia.Vogt- Koyanagi Harada Syndrome.Tumours of the Ciliary body.Injuries of the Ciliary body. Glaucoma-Formation of Aqueous Humor.Drainage of Aqueous.Intraocular Pressure (IOP).Ocular Rigidity.
- Tonography..Developmental Glaucoma (Buphthalmos).Primary Narrow Angle Glaucoma. Primary Open Angle Glaucoma. Normotensive Glaucoma.Ocular Hypertension.Secondary Glaucoma. Surgical
- Procedures for Glaucoma (Steps Only), YOGPI, trabeculectomy.Laser Procedure in Glaucoma. Artificial Drainage Devices in Glaucoma Surgery (Moltenoj).
- Disease of the Lens- Congenital Malformations.Cataract.Congenital and Developmental Cataract.Senile Cataract.Traumatic Cataract.Complicated Cataract.Secondary Cataract.After Cataract.Dislocation of the Lens. Surgical Procedures for Removal of the Lens (Operative Steps Only. Phacoemulsification (ICCE, ECCE, IOL).Small Incision Cataract Surgery (Manual Phacoj.Intraocular Lens implantation-AC+PC, IOL.
- Diseases of the Vitreous Humor- Congenital Anomalies.Vitreous Opacities. Hereditary Vitreous — Retinal Degeneration's. Vitreous Haemorrhage .Detachment of Vitreous Humor.Vitreous Surgery.
- Methods of clinically assessing the posterior segment (direct & indirect ophthalmoscopy)
- Disease of the Retina- Congenital & Dev. Defects.Inflammation of the Retina (Retinitis).Retinal Vasculitis .Oedema of the Retina.Haemorrhage of the Retina.Vascular Occlusion.Retinal Arteriosclerosis.Retinopathies.Retinal

Telangiectasis. Degeneration's of the Retina. Detachment of the Retina. Surgical Procedures for Retinal Detachment .Tumours of the Retina. Phakomatoses, Injuries of the Retina.

- Disease of the Optic Nerve- Congenital Anomalies. Papilloedema. Inflammation of the Optic Nerve (Optic-Neuritis). Ischaemic Optic Neuropathy. Optic Atrophy. Tumours of the Optic Nerve. Injuries of the Optic Nerve. Symptomatic Disturbances of Visual Function — Visual Field Defects. Amblyopia. Amaurosis. Night Blindness. Day Blindness. Defects in Color Vision. Congenital Word

Blindness. Malinger. Neuro — eye disease: Evaluation of optic nerve disease. Clinical features of optic nerve dysfunction. Optic disc changes. Optic atrophy. Special investigation. Classification of optic neuritis. Optic neuritis and demyelination. Systemic features of multiple sclerosis, Special investigation. Optic neuritis. Other causes of optic neuritis: Parainfectious optic neuritis. Infectious optic neuritis. Non-arteritic anterior ischaemic optic neuropathy. Arteritic anterior ischaemic optic neuropathy. Clinical features of giant cell arteritis. Special investigation. Arteritic anterior ischaemic optic neuropathy. Leber hereditary optic neuropathy: hereditary optic atrophies: Kjer syndrome. Behr syndrome.

Wolfram syndrome: Alcohol-tobacco amblyopia: Drug-induced optic neuropathies:

PAPILLOEDEMA: Raised intracranial pressure - Causes. Hydrocephalus. Systemic features.

Clinical features of papilloedema. Differential diagnosis. CONGENITAL OPTIC NERVE ANOMALIES: Without neurological associations, with neurological associations, Optic disc coloboma. PUPILLARY REACTION: Applied anatomy. Abnormal pupillary reactions: NYSTAGMUS: Classifications and Causes: SUPRANUCLEAR DISORDER OF EYE MOVEMENTS:

Conjugate eye movements, Supranuclear gaze palsies: III, IV and VI THIRD NERVE

DISEASE: Applied anatomy and Clinical: DISORDERS OF CHIASM, DISORDERS

OF RETROCHIASMAL PATHWAYS AND CORTEX, OCULAR MYOPATHIES AND RELATED DISORDERS, NEUROFIBROMATOSIS.

PAPER: OPTOMETRY PRATICAL

Value: 10

Objective/s of the paper: To access the student's knowledge and understanding of the practical of optometry.

Format of the exam

Exam paper	Spécialty / option	Different sections of the paper	duration	percentage (%)	Mark allocated
OPTOMETRY PRATICAL	OPT	SECTION A- ophthalmic instrumentation	36MIN	20	20
		SECTION B- case history	36MIN	20	20
		SECTION C – ophthalmic investigation	36MIN	20	20
		SECTION D – clinical refraction	36MIN	20	20
		SECTION E – therapeutics	36MIN	20	20

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 05 sections : ☐ section A : ophthalmic instrumentation on 20 marks.

- ☐ section B : case history on 20 marks.
- ☐ Section C : ophthalmic investigation on 20 marks.
- ☐ section D : clinical refraction on 20 marks.
- ☐ section E – therapeutics on 20 marks.

Content :

- ☐ ophthalmic instrumentation
- ☐ case history
- ☐ ophthalmic investigation
- ☐ clinical refraction ☐ therapeutics

PAPER: ANATOMY AND PHYSIOLOGY

Value: 05

Objective/s of the paper: to access the student's knowledge and understanding of the systems of anatomy and physiology.

Format of the exam

Exam paper	Spécialty/ option	Different sections of the paper	duration	percentage (%)	Mark allocated
ANATOMY AND PHYSIOLOGY	OPT	SECTION A- MCQS	45MIN	20	20
		SECTION B- STRUCTURAL QUESTIONS	30MIN	20	20
		SECTION C – SHORT ESSAY	30MIN	20	20
		SECTION D – LONG ESSAY	75MIN	40	40

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 04 sections :

- section A : 10 MCQs on 20 marks, that is 02 marks per MCQ.
- section B : 05 structural questions on 20 marks, that is 04 marks per question.
- Section C : 01 case study (short practical question) on 20 marks.
- section D : 01 case study (long practical question) on 40 marks.

Content :

Cell structure and function. Physiology of the muscles and nerve : Physiology of muscles function :

Types of contractions, all or none principle: Muscle tone, fatigue, Nerve cell and Electro-Physiology: Degeneration of nerve : Reaction of Degeneration. Physiology Of Blood And Cvs: Composition of blood, formation and function of red blood corpuscles: Types of contractions, all or none principle: Formation & function of leucocytes : The Plasma Proteins: Blood Groups: Heart vessels & Cardiac Muscles: Blood pressure, and factors maintaining and affecting circulations: Cardiac cycle and output, electro- cardiogram: Coagulation of blood and Reticuloendothelial system.

Respiratory System: Mechanism of respiration- internal and external: Nervous control of

Respiration: Factors affecting respiration: Capacity and lung volumes (vital capacity, tidal air, residual air, reserve air, minimal air etc): Transport of gases and hypoxia.

Introduction to Anatomy, terms and terminology; Regions of Body, Cavities and systems:

Surface anatomy — musculo-skeletal, vascular, cardiopulmonary system; General Embryology

Musculoskeletal system: Connective tissue & its modification, tendons, membranes, special connective Tissue: Bone structure, blood supply, growth, ossification, and classification; Muscle classification, structure and functional aspect; Joints — classification, structures of joints,

movements, range, limiting factors, stability, blood supply, nerve supply, dislocations and applied anatomy

Upper extremity: Bony architecture: Joints — structure, range of movement: Muscles — origin, insertion, actions, nerve supply: Major nerves — course, branches and implications of nerve injuries: Development of limb bones, muscles and anomalies Lower Extremity: Bony architecture: Joints — structure, range of movement: Muscles — origin, insertion, actions, nerve supply: Major nerves — course, branches and implications of nerve injuries; Development of limb bones, muscles and anomalies Spine and thorax: Back muscles -

Superficial layer, Deep muscles of back, their origin, insertion, action and nerve supply:

Vertebral column — Structure & Development, Structure & Joints of vertebra:

Thoracic cage

Head and neck: Cranium: Facial Muscles — origin, insertion, actions, nerve supply: Temporomandibular Joints — structure, types of movement

Cardiovascular system: Circulatory system — major arteries and veins of the body, structure of blood vessels: Heart structure, positions, chambers, valves, internal & external features: Blood supply to heart: Conductive system of heart: Lymphatic system: Circulation, structure & functions:

Lymph nodes

Respiratory system: Structure of upper and lower respiratory tract; Thorax: Pleural cavities & pleura: Lungs and respiratory tree: Heart and great vessels: Diaphragm

Nervous system: Classification of nervous system: Nerve — structure, classification, microscopy with examples: Neurons, classification with examples Simple reflex arc: Parts of a typical spinal nerve/Dermatome: Central nervous system — disposition, parts and functions: Cerebrum: Cerebellum: Midbrain & brain stem: Blood supply & anatomy of brain: Spinal cord- anatomy, blood supply, nerve pathways: Pyramidal, extra pyramidal system; Thalamus, hypothalamus: Structure and features of meninges: Ventricles of brain, CSF circulation: Development of nervous system & defects: Cranial nerves — (course, distribution, functions and palsy): Sympathetic nervous system, its parts and components: Parasympathetic nervous system

Sensory system: Structure and function of- Visual system: Auditory system: Gustatory system: Olfactory system; Somatosensory system

Digestive system: Parts of digestive system: Abdominal cavity — divisions: Muscles of abdominal wall: Liver: Pancreas: Spleen: Alimentary canal: Gall bladder: Intestine (small & large)

Urinary and Reproductive system: Urinary system: Pelvic floor, innervations: Kidney, Ureter, bladder, urethra

Genital system — male and female: Reproductive system of male: Reproductive system of female

Endocrine system: Pituitary gland; Thyroid; Parathyroid.

Digestive System: Introduction to digestive system, Alimentary functional anatomy: The salivary glands:

The stomach and its secretion; The bile; The small intestine; Digestive processes and functions of liver: Absorption, Metabolism, Basal Metabolism, Food requirements: Metabolism.

Endocrine system: Physiology of the endocrine glands (pituitary, pineal body, Thyroid, Parathyroid, adrenal, gonads, thymus and pancreas etc.).

Physiology of urogenital system: Physiology of kidney and urine formation; Constituents of normal urine etc: Kidney function tests. Miscellaneous aspects renal physiology, Micturition, Male and female reproductive organs.

Skin: The skin structure and its function; Temperature regulation. Nervous system: Reflex arc:

Physiology of the central nervous system: Posture, locomotion and Equilibrium; Reflexes:

Physiology of the sympathetic and parasympathetic nervous system: Sensory system and receptors:

Motor areas, descending and ascending tracts: ANS: Reticular formation Cerebrum, Cerebellum, basal ganglia, thalamus, hypothalamus, CSF and Blood brain barrier: Neuro

Muscular Junction

PAPER: PUBLIC HEALTH FOR EYECARE

Value: 04

Objective/s of the paper: to access the student's knowledge and understanding of optometry sciences

Format of the exam

EXAM PAPER	Spécialty / option	Different sections of the paper	duration	percentage (%)	Mark allocated
PUBLIC HEALTH FOR EYECARE	OPT	SECTION A- MCQ	45MIN	20	20
		SECTION B- STRUCTURAL QUESTIONS	45MIN	30	20
		SECTION C – SHORT ESSAY	45MIN	25	20
		SECTION D – LONG ESSAY	45MIN	25	40

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 04 sections :

section A : 10 MCQs on 20 marks, that is 02 marks per MCQ.

section B : 05 structural questions on 20 marks, that is 04 marks per question.

section C : 01 case study (short practical question) on 20 marks. section

D : 01 case study (long practical question) on 40 marks.

Content :

Epidemiology

Epidemiology method, health measurement, epidemiological data, measurement of epidemiological frequency, prevalence, incidence, associated impact of epidemiology, precise and validation of epidemiology, precise problem of sample collection.

Demography

Definition, goal of demography, notion of demography, characteristic of the population, notion of type of demography, ratio, ascending pyramid of age, stratify population, interpretation. Health

Information System

Introduction: Definition of Concepts and Terminologies-data, information, management, health, system, health system, health information, health information system.

Determinants of health: Socio-economic Situations, Demographic Situation, Epidemiological

Situation, Health Resources, Human Capital, Health Services, Sectoral

Situations: Education, Agriculture, Mineral Resources, Water Resources, Transport, etc.

Components of health information systems: Health information resources, Health Indicators, data management, information product, Disease surveillance, monitoring, evaluation. Health

Data Management (Data management cycle (Data collection, Analyses, Reporting, Dissemination, Data use): Characteristics of good Data , Types and Sources of Health Data,

Methods of Data Collection & some Standard Forms for Health information, Challenges of Health Data Collection, Basics of Data Processing and Analysis (computer —based & paperbased).

National Health Management Information Systems: Challenges and strategies Monitoring and

Evaluation: Programme cycle: Characteristics of Health programme monitoring system (Data collection, Analyses, Reporting, and Dissemination. Data use) □ Public Health &

Community Optometry Concept of public health.

Principles of primary, secondary and tertiary care.

Planning of health services.

Health economics

Health manpower development-Basic O.T Practices, Familiarity with use of Operating Microscope NPCB and refractive blindness — optometrist's role as primary health care provides. -

Health cares insurance including role of PHA.

Ocular emergencies — Foreign body, Eye Pain, Watering, Injuries - perforating, none perforating & chemical.

PAPER: OCULAR ANATOMY AND PHYSIOLOGY

Value: 05

Objective/s of the paper: to access the student's knowledge and understanding of the systems of ocular anatomy and physiology.

Format of the exam

Exam paper	option	Different sections of the paper	Duration	(%)	Mark
OCULAR ANATOMY AND PHYSIOLOGY	OPT	SECTION A- MCQ	45MIN	20	20
		SECTION B- STRUCTURAL QUESTIONS	45MIN	30	20
		SECTION C – SHORT ESSAY	45MIN	25	20
		SECTION D – LONG ESSAY	45MIN	25	40

III – CONTENT - DIFFERENT SECTIONS OF THE PAPER

Student will be evaluated on the content below. This paper will obligatorily have 04 sections:

- ☐ section A : 10 MCQs on 20 marks, that is 02 marks per MCQ.
- ☐ section B : 05 structural questions on 20 marks, that is 04 marks per question.
- ☐ Section C: 01 case study (short practical question) on 20 marks.
- ☐ section D : 01 case study (long practical question) on 40 marks.

CONTENT:

Anatomy: Embryology — ocular, Orbit, Cornea, Lens, Zonules, Uveal Tract & its vascular supply, Vitreous, Sclera, Anterior chamber and its angle, Retina & its vascular supply, The Ocular motor system, The pupillary & ciliary muscle, The lachrymal apparatus, Anatomy of the Ocular Adnexa & glands.

Physiology: Cornea, Uveal tissue, Lens, Aqueous humour, Vitreous Humour, Retina, Optic Nerve, Ocular Circulation, Protective Mechanism of the eye, The ocular motor system, Intraocular pressure, Pupil, Accommodation, Color vision, Geniculate cortex, Visual perception, Physiology of vision- Visual acuity, Contrast Sensitivity, Light & Dark adaptation, Binocular vision, Electrodiagnostic tests — ERG, EOG, VER