MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)
Grade 'A' Accredited by NAAC
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Syllabus for

MBBS – (Third Year)

Part I

Approved as per BOM. 04/2007, dated 14.12.2007, item 4 & amended up to BOM. 43/2015 dated 14.11.2015

Syllabus have been categorized as **'Must know'** (70%), **'Desirable to Know'** (30%) and **'Nice to Know'** (10%) topics.

Inside this booklet, **'Desirable to know'** & **'Nice to Know'** topics are stamped and remaining all unstamped topics belong to **'Must Know'** area.

Prof. Z. G. Badade
Registrar,
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GENERAL CONSIDERATIONS AND TEACHING APPROACH

(1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine.

(2) With wide range of career opportunities available today, a graduate has a wide choice of career opportunities. The training, though broad based and flexible should aim to provide an educational experience of the essentials required for health care in our country.

"Training should be able to meet internationally acceptable standards."

(3) To undertake the responsibilities of service situations which is a changing condition and of various types, it is essential to provide adequate placement training tailored to the needs of such services as to enable the graduates to become effective instruments of implementation of those requirements. To avail of opportunities and be able to conduct professional requirements, the graduate shall endeavour to have acquired basic training in different aspects of medical care.

(4) The importance of the community aspects of health care and of rural health care services is to be recognized. This aspect of education & training of graduates should be adequately recognized in the prescribed curriculum. Its importance has been systematically upgraded over the past years and adequate exposure to such experiences should be available throughout all the three phases of education & training. This has to be further emphasized and intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function efficiently under such settings.

(5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being concentrated – on - curative - aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.

(6) There must be enough experiences to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching - learning process.

(7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban and rural environment. He/she shall endeavour to give emphasis on fundamental aspects of the subjects taught and on common problems of health and disease avoiding unnecessary details of specialization.

(8) The importance of social factors in relation to the problem of health and diseases should receive proper emphasis throughout the course and to achieve this purpose, the

educational process should also be community based than only hospital based. The importance of population control and family welfare planning should be emphasized throughout the period of training with the importance of health and development duly emphasized.

(9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgment, ability to collect and analyze information and to correlate them.

(10) The educational process should be placed in a historic background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and the rest of the world should form a part of this process.

(11) Lectures alone are generally not adequate as a method of training and are a poor means of transferring/acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and on firsthand experience. Students will be encouraged to learn in small groups, through peer interactions so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills.

(12) The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.

(13) Clinics should be organized in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling of the patients.

(14) Proper records of the work should be maintained which will form the basis for the students' internal assessment and should be available to the inspectors at the time of inspection of the college by the Medical Council of India.

(15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolution of the problem. Every attempt be made to de-emphasize compartmentalization of disciplines so as to achieve both horizontal and vertical integration in different phases.

(16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team leader when he begins his independent career. A discussion group should not have more than 20 students.

(17) Faculty member should avail of modern educational technology while teaching the students and to attain this objective, Medical Education Units/ Departments be established in all medical colleges for faculty development and providing learning resource material to teachers.

(18) To derive maximum advantage out of this revised curriculum, the vacation period to students in one calendar year should not exceed one month, during the 4 ½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.

(19) In order to implement the revised curriculum in Toto, State Govts. and Institution Bodies must ensure that adequate financial and technical inputs are provided.

(20) HISTORY OF MEDICINE –The students will be given an outline on "History of Medicine". This will be taught in an integrated manner by subject specialists and will be coordinated by the Medical Education Unit of the College.

(21) All medical institutions should have curriculum committee which would plan curricula and instructional method which will be regularly updated.

(22) Integration of ICT in learning process will be implemented.

OBJECTIVE OF MEDICAL GRADUATE TRAINING PROGRAMME:

(1) **NATIONAL GOALS** : At the end of undergraduate program, the medical student should be able to :

(a) Recognize `health for all' as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.

(b) Learn every aspect of National policies on health and devote himself / herself to its practical implementation.

(c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

(d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

(e) Become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

(2) **INSTITUTIONAL GOALS**: (1) In consonance with the goals each medical institution should evolve institutional goals to define the manpower (or professionals) they intend to produce. The undergraduate students coming out of a medical institute should:

(a) Be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

(b) Be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.

(c) Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential drugs" and their common side effects.

(d) Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

(e) Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

(f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:-

(i) Family Welfare and Material and Child Health(MCH)

(ii) Sanitation and water supply

(iii) Prevention and control of communicable and non-communicable diseases
(iv) Immunization
(v) Health Education
(vi) IPHS standard of health at various level of service delivery, medical waste disposal.
(vii) Organizational institutional arrangements.

(g) Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling

(h) Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

(i) Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

(j) Be competent to work in a variety of health care settings.

(k) Have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed as under:

A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate:

1. **Clinical Evaluation**:

(a) To be able to take a proper and detailed history.
(b) To perform a complete and thorough physical examination and elicit clinical signs.
(c) To be able to properly use the stethoscope, Blood Pressure, Apparatus Auroscope, Thermometer, Nasal Speculum, Tongue Depressor, Weighing Scales, Vaginal Speculum etc.:
(d) To be able to perform internal examination-Per Rectum (PR), Per Vaginum (PV) etc.
(e) To arrive at a proper provisional clinical diagnosis.

II. **Bed side Diagnostic Tests**:

(a) To do and interpret Haemoglobin (HB), Total Count (TC), Erythrocytic Sedimentation Rate (ESR), Blood smear for parasites, Urine examination /albumin /sugar /ketones /microscopic:
(b) Stool exam for ova and cysts;
(c) Gram, staining and Siehl-Nielsen staining for AFB;
(d) To do skin smear for lepra bacilli
(e) To do and examine a wet film vaginal smear for Trichomonas
(f) To do a skin scraping and Potassium Hydroxide (KOH) stain for fungus infections;
(g) To perform and read Montoux Test.

III. **Ability to Carry Out Procedures**:

(a) To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
(b) To give Subcutaneous (SC) /Intramuscular (IM) /Intravenous (IV) injections and start Intravenous (IV) infusions.
(c) To pass a Nasogastric tube and give gastric leavage.
(d) To administer oxygen-by masic/catheter
(e) To administer enema
(f) To pass a ruinary catheter-male and female
(g) To insert flatus tube
(h) To do pleural tap, Ascitic tap & lumbar puncture
(i) Insert intercostal tube to relieve tension pneumothorax
(j) To control external Haemorrhage.

IV Anaesthetic Procedure

(a) Administer local anaesthesia and nerve block

(b) Be able to secure airway potency, administer Oxygen by Ambu bag.

V **Surgical Procedures**

(a) To apply splints, bandages and Plaster of Paris (POP) slabs;
(b) To do incision and drainage of abscesses;
(c) To perform the management and suturing of superficial wounds;
(d) To carry on minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc
(e) To perform vasectomy;
(f) To manage anal fissures and give injection for piles.

VI Mechanical Procedures

(a) To perform thorough antenatal examination and identify high risk pregnancies.
(b) To conduct a normal delivery;
(c) To apply low forceps and perform and suture episiotomies;
(d) To insert and remove IUD's and to perform tubectomy

VII **Paediatrics**

(a) To assess new borns and recognize abnormalities and I.U. retardation
(b) To perform Immunization;
(c) To teach infant feeding to mothers;
(d) To monitor growth by the use of 'road to health chart' and to recognize development retardation;
(e) To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT)
(f) To recognize ARI clinically;

VIII **ENT Procedures**:

(a) To be able to remove foreign bodies;
(b) To perform nasal packing for epistaxis;
(c) To perform trachesotomy

IX **Ophthalmic Procedures**:

(a) To invert eye-lids;
(b) To give Subconjunctival injection;
(c) To perform appellation of eye-lashes;
(d) To measure the refractive error and advise correctional glasses;
(e) To perform nasolacrimal duct syringing for potency

X. **Dental Procedures**:

To perform dental extraction

XI **Community Healthy**:

(a) To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
(b) To be able to carry on managerial responsibilities, e.g. Management of stores, indenting and stock keeping and accounting
(c) Planning and management of health camps;
(d) Implementation of national health programmes;
(e) To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
(f) To identify and institute and institute control measures for epidemics including its proper data collecting and reporting.

XII **Forensic Medicine Including Toxicology**

(a) To be able to carry on proper medico legal examination and documentation of injury and age reports.
(b) To be able to conduct examination for sexual offences and intoxication;
(c) To be able to preserve relevant ancillary material for medico legal examination;
(d) To be able to identify important post-mortem findings in common un-natural deaths.

XIII **Management of Emergency**

(a) To manage acute anaphylactic shock;
(b) To manage peripheral vascular failure and shock;
(c) To manage acute pulmonary oedema and LVF;
(d) Emergency management of drowning, poisoning and seizures
(e) Emergency management of bronchial asthma and status asthmaticus;
(f) Emergency management of hyperpyrexia;
(g) Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries
(h) Assess and administer emergency management of burns

Syllabus for
OPHTHALMOLOGY

Index

BROAD CURRICULUM AS PER MCI GUIDELINES (OPHTHALMOLOGY)

i) **GOAL:**

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the students that shall enable him to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Programme for the prevention of blindness and rehabilitation of the visually impaired.

ii) **OBJECTIVES**

a. **KNOWLEDGE**

At the end of the course, the student should have knowledge of:

1. Common problems affecting the eye:
2. Principles of management of major ophthalmic emergencies
3. Main systemic diseases affecting the eye
4. Effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequalae of such diseases;
5. Adverse drug reactions with special reference to ophthalmic manifestations;
6. Magnitude of blindness in India and its main causes;
7. National programme of control of blindness and its implementation at various levels
8. Eye care education for prevention of eye problems
9. Role of primary health centre in organization of eye camps
10. Organization of primary health care and the functioning of the ophthalmic assistant.
11. Integration of the national programme for control of blindness with the other national health programmes;
12. Eye bank organization

b. **SKILLS:**

At the end of the course, the student should be able to:

1. Elicit a history pertinent to general health and ocular status;
2. Assist in diagnostic procedures such as visual acuity testing, examination of eye, Schiotz tonometry, staining for Corneal pathology, confrontation perimetry, Subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and Cover test.
3. Diagnose and treat common problems affecting the eye;
4. Interpret ophthalmic signs in relation to common systemic disorders;

5. Assist/observe therapeutic procedures such as subconjunctival injection, Corneal/Conjunctival foreign body removal, Carbolic cautery for corneal ulcers, Nasolacrimal duct syringing and tarsorraphy;
6. Provide first aid in major ophthalmic emergencies;
7. Assist to organise community surveys for visual check up;
8. Assist to organise primary eye care service through primary health centres;
9. Use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation;
10. Establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team.

a. INTEGRATION

The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially neurosciences, Otorhino-laryngology, General Surgery and Medicine.

Ophthalmology Syllabus for MBBS

The broad goal of undergraduate teaching in ophthalmology is to provide knowledge and skills that shall enable him/her:

1. To practice as a primary care physician and provide primary eye care
2. Identify ophthalmic diseases including emergencies
    a. Emergency management of ocular injuries: e.g.
        i. Chemical Burns, Sudden Loss of vision etc.
    b. Manage various eye conditions like conjunctivitis, stye, chalazion and foreign body.
    c. Basics about important ocular diseases such as cataract, glaucoma, uveitis, and corneal ulcer
    d. Recognize the ophthalmic manifestations of systemic diseases
    e. Vitamin "A": Ocular manifestation of vitamin A deficiency and its management.
3. Should know adverse drug reactions with special reference to ophthalmic manifestations
4. Refer to the appropriate center and provide follow up to the patients
5. Eye bank and Eye camp organization
6. To understand the prevalence and prevention of the common public health problems related to ophthalmology

COURSE CONTENTS

MUST KNOW:

1. Aetiology, clinical features and treatment of conjunctival infections, allergies, pterygium, xerosis and trachoma.
2. Aetiology, clinical features, complications and treatment of corneal ulcers, keratomalacia and other scleral and corneal inflammations.
3. Basic principles of keratoplasty, eye donation and corneal blindness.
4. Aetiopathogenesis and complications of ectropion, entropion, ptosis, lagophthalmos, symblepharon and lid inflammations.
5. Aetiology, clinical features and treatment of lacrimal sac infections and causes of epiphora.
6. Classification, clinical features, diagnosis and treatmentof various forms of congenital and senile cataract.
7. Classification, aetiology, clinical features, complications and management of various forms of uveitis.
8. Classification, aetiology, clinical features and management of various glaucomas.
9. Differential diagnosis of 'Red eye'.

10. Classification, clinical features and treatment of various refractive errors and presbyopia.
11. Types of blindness and their causes.
12. Objectives of National Programmes of Prevention and Control of Blindness, Trachoma Control Programme and vision 2020.
13. Aetiology, clinical features and treatment of common retinal disorders including vascular occlusions, inflammation and detachment.
14. Differentiate senile cataract and Open Angle Glaucoma.
15. Determine visual activity.
16. Test colour vision.
17. Use of Ophthalmoscope.
18. Examine anterior segment of eye.
19. Distant direct ophthalmoscopy for diagnosis of cataract.

DESIRABLE TO KNOW:

1. Types of ocular trauma, clinical features, complications and management including sympathetic ophthalmia.
2. Aetiology, clinical features and management of optic nerve disorders including differentiation of papilloedema and optic neuritis.
3. Aetiology, clinical features, and management of orbital diseases; common causes of proptosis.
4. Ocular manifestation of systemic diseases including diabetes, hypertension, tuberculosis, leprosy, anaemia, AIDS and pregnancy – induced hypertension.
5. Ocular side effects of systemic drugs.
6. Aetiology, clinical features and principles of treatment of vitreous diseases e.g., haemorrhage degeneration, liquefaction, and endophthalmitis.
7. Recent advances in ophthalmology – types and scope of lasers, intraocular lens implantation.
8. Determine field of vision.
9. Take conjunctival swab.
10. Remove extraocular foreign body.
11. Perform epilation of cilia.
12. Incise and drain lid abscess.

NICE TO KNOW :

1) Ocular manifestations of common neurological disorders.
2) Aetiology, symptoms, diagnosis and principles of treatment of strabismus.

Clinical Posting:
4 weeks in II MBBS
6 weeks in Prefinal MBBS
Preceeding University Examination.

First 4 Weeks: Basic sciences related to ophthalmology like ocular, Anatomy, Physiology, Biochemistry, Neurology, Examination Technique and orientation to Minor O.T.

Next 6 Weeks: Clinical Ophthalmology, including ward & Theatre postings Community ophthalmology.

EVALUATION :

I. INTERNAL ASSESSMENT: 20 marks

Theory
No. of Questions Marks
Section A: 28 MCQs ½ mark each: Total 14

Section B:
Essay 2 x 7 = 14
Short Notes 3 x 4= 12
Total = 40
Clinical:
Long Case 1 x 30 = 30

Viva 10
Instrument 5 marks
Dark Room 5 marks

Sushil Kumar
HOD Ophthalmology
B.H.O.D
BOS

CLINICAL DUTY PROTOCOL-MBBS FINAL PROF. PART-I

Name:..... **Duty Period:**.....

Roll No:.....

Batch:.....

COMPULSORY (During Ophth. Duty

- ☐ Torch with good focus
- ☐ Corneal loupe (10 x)

IN CLINICAL CLASS

- ☐ Every student must present minimum **five long cases** and **ten short cases**.
- ☐ All students to acquire the knowledge of:

1. History taking
2. Methods of recording vision
3. Complete Local Examination including:
   a) Lids & Adnexa
   b) Cornea, Sclera
   c) Anterior Chamber
   d) Iris & Pupil
   e) Lens
   f) Muscle movements
4. Surgical Instruments
5. Dark Room Examination (Including: Visual acuity, Maddox rod, Stenopic slit, Pin hole, Lenses, Ophthalmoscopy & Retinoscopy)

CASES TO BE OBSERVED & EXAMINED

1. ☐ Cataract
2. ☐ Aphakia
3. ☐ C.S. Glaucoma
4. ☐ Lid conditions
5. ☐ Stye/Chalzion/Squint Entropion/ Ectropion
6. ☐ Corneal Opacity
7. ☐ Conjunctivitis
8. ☐ Pterygium
9. ☐ Epiphora
10. ☐ Corneal Ulcer/Keratitis

11. ☐ Pseudophakia

LECTURES DURING CLINICAL POSTING

1. ☐ History taking
2. ☐ Ocular examination
3. ☐ Techniques
   - ☐ Tonometry
   - ☐ Regurgitation test
   - ☐ Perimetry (incl confrontation peri.)
   - ☐ Corneal sensitivity & Staining
   - Assesment of A.C. depth ☐
   - Lid eversion ☐
   - ☐ Pupillary reflexes / reactions
   - Colour vision tes ☐
   - Hirschberg tcst ☐

Must be able to do himself / herself

1. ☐ V.A
2. ☐ P.L.
3. ☐ P.R.
4. ☐ Pinhole test
5. ☐ V.fields by confrontation method
6. ☐ Hirschbergs test
7. ☐ Exam. of extraocular movements
8. ☐ Corneal sensitivity test
9. ☐ Pupil- size and reaction
10. ☐ Digital tonometry
11. ☐ Conj. Irrigation

Procedures to be observed

1. ☐ Removal of extraocular F.B.
2. ☐ Syringing
3. ☐ Applying an eye patch and Instillation of eye drops.
4. ☐ Epilation
5. ☐ Conj. Irrigation
6. ☐ Sub-conjunctival injection
7. ☐ Tarsorrhaphy

Surgeries to be observed

1. ☐ Entropion
2. ☐ Cataract
3. ☐ Glaucoma

FINAL MBBS EXAMINATION IN OPHTHALMOLOGY

Evaluation

Internal assessment: 20 (Theory 10 +Practical 10)

Plan of Internal assessment in Ophthalmology

- Marks of Internal Assessment should be sent to University before the commencement of Theory examination.
- Passing in internal assessment is essential for passing, as Internal assessment is separate head of passing. in examination.
- It will also be considered for grace marks as per existing rules
- Combined theory and practical of internal assessment will be considered for passing in internal assessment.
- Student will be allowed to appear for both theory and practical exam independent of marks obtained in internal assessment but he if fails in that head even after including the grace marks he will be declared **"Fail** in that Subject"

Internal assessment in Theory -

1. Examinations during semesters : This will be carried out by conducting two theory examinations during 4th and 6th semesters (50 marks each).

Total of 100 marks to be converted into 5 marks.(A/5)

2. Prelim examination : This shall be carried out during 9th semester.
One theory papers of 40 marks as per university examination.
Total of 40 marks to be converted into 5 marks. (B/5)

Total marks of Internal assessment- Theory will be addition of A and B.

Internal assessment in Practical

Examinations at end of Clinical postings:

1. There will be practical examination at the end of each clinical posting of Opthalamology.,4th and 6th semester. Each examination will be of 50 marks. Total of 2 examinations – 100 marks , will be converted to 5 marks.(C/5)

2. Prelim examination:
This will be conducted for 40 marks as per university pattern and marks will be converted to 5 (D/5).
Total marks of Internal of-of Practical will be addition of C and D.

Evaluation **Methods - Theory, Practical and Viva**

Pattern of theory examination including distribution of marks, questions and time

Pattern of theory examination including distribution of marks

1. There shall be one theory papers , carrying 40 marks
2. The paper will have two sections, A and B
3. The paper will be of 2.5 hours duration.
4. Section A will be MCQ in each paper. Section B will have to be written in separate answer sheets.

THEORY : 40 marks Duration Two and half hours (2.5) hours

MCQ section A will be given to candidates at the beginning of the examination.
After 30 minutes Section A will be collected. Section B of paper will then be handed over to candidates.

Section A :30 min. duration
Twenty eight single MCQs- 1/2 mark each : 14 marks

- Separate paper
- Single based response
- MCQ will cover whole syllabus

Section B : 2 hours duration

- Two long questions (LAQ) of 7 marks each : 14 marks
  (will contain some preclinical/paraclinical aspects)
- Three /five (SAQ)short notes -4 marks each : 12 marks

PRACTICAL : 40 marks

Clinical : One long case :30 marks :30 min. for taking case and 10 minutes for assessment

- Oral (viva voce) :10 marks:10 min. duration

1.Dark Room 5 marks
2.Instruments 5 marks

Marks of VIVA will be added to Theory marks
It is compulsory to obtain 50% marks in theory.
It is mandatory to obtain 50% marks in theory+viva/oral.

OPHTHALMOLOGY

Evaluation Methods - Theory, Practical and Viva

Pattern of theory examination including distribution of marks, questions and time.

Pattern of theory examination including distribution of marks

1. There shall be one theory paper, carrying 40 marks
2. The paper will have two sections, A and B
3. The paper will be of 2.5 hours duration.
4. Section A will be MCQ in each paper. Section B will have to be written in separate answer sheets

THEORY:- 40 marks Duration Two and half hours (2.5) Hours

MCQ section A will be given to candidates at the beginning of the examination. After 30 minutes Section A will be collected. Section B of paper will then be handed over to candidates.

Section A: 30 min. duration

Twenty eight single MCQs-1/2 mark each: 14 marks

- Separate paper
- Single based response
- MCQ will cover whole syllabus

Section B: 2 hours duration

- Two long question (LAQ) of 7 marks each: 14 marks
  (will contain some preclinical/paraclinical aspects)
- Three/five (SAQ) short notes - 4 marks each: 12 marks

PRACTICAL: 40 marks

- Clinical: One long case : 30 marks : 30 min. for taking case and 10 minutes for assessment
- Oral (Viva voce):10 marks : 10 min. duration
  1. Dark Room 5 marks
  2. Instruments 5 marks

Marks of VIVA will be added to Theory marks
It is compulsory to obtain 50% marks in theory
It is mandatory to obtain 50% marks in theory + viva/oral.

Internal assessment: 20 (Theory 10 +Practical 10)

Plan of Internal assessment in Ophthalmology

- Marks of Internal Assessment should be sent to University before the commencement of Theory examination.
- Passing in internal assessment is essential for passing, as internal assessment is separate head of passing in examination.
- It will also be considered for grace marks as per existing rules.
- Combined theory and practical of internal assessment will be considered for passing in internal assessment.
- Student will be allowed to appear for both theory and practical exam independent of marks obtained in internal assessment but he if fails in that head even after including the grace marks he will be declared "**Fail** in that Subject".

Internal assessment in Theory

1. Examinations during semesters: This will be carried out by conducting theory examination during 6th semester (40 marks).
2. Prelim examination: This shall be carried out during 7th semester.
   One theory paper of 40 marks as per university examination.

Total marks of internal assessment-Theory will be addition of A and B.

Internal assessment in Practical

Examinations at end of Clinical postings

1. There will be practical examination at the end of each clinical posting of Ophthalmology, 4th and 6th semester. Each examination will be of 50 marks. Total of 2 examinations-100 marks, will be converted to 5 marks (C/5)
2. Prelim examination: This will be conducted for 40 marks as per university pattern and marks will be converted to 5 (D/5).

Total marks of internal of Practical will be addition of C and D.

BOARD OF MANAGEMENT – 35 / 2014 DATED 26.04.2014

Resolution No. 3.4(e): Resolved that in **Ophthalmology – Ocular Emergencies** should be given more emphasis in the M.B.B.S. syllabus.

OPHTHALMOLOGY

Evaluation Methods - Theory, Practical and Viva

Pattern of theory examination including distribution of marks, questions and time

Pattern of theory examination including distribution of marks

1. There shall be one theory papers , carrying 40 marks
2. The paper will have two sections, A and B
3. The paper will be of 2.5 hours duration.
4. Section A will be MCQ in each paper. Section B will have to be written in separate answer sheets.

THEORY : 40 marks Duration Two and half hours (2.5) hours

MCQ section A will be given to candidates at the beginning of the examination.
After 30 minutes Section A will be collected. Section B of paper will then be handed over to candidates.

Section A :30 min. duration
Twenty eight single MCQs- 1/2 mark each : 14 marks

- Separate paper
- Single based response
- MCQ will cover whole syllabus

Section B : 2 hours duration

- Two long questions (LAQ) of 7 marks each : 14 marks (will contain some preclinical/paraclinical aspects)
- Three /five (SAQ)short notes -4 marks each : 12 marks

PRACTICAL : 40 marks

- Clinical : One long case :30 marks :30 min. for taking case and 10 minutes for assessment
- Oral (viva voce) :10 marks:10 min. duration
  1. Dark Room 5 marks
  2. Instruments 5 marks

Marks of VIVA will be added to Theory marks
It is compulsory to obtain 50% marks in theory.
It is mandatory to obtain 50% marks in theory+viva/oral.

Internal assessment: 20 (Theory 10 +Practical 10)

Plan of Internal assessment in Ophthalmology

- Marks of Internal Assessment should be sent to University before the commencement of Theory examination.
- Passing in internal assessment is essential for passing, as Internal assessment is separate head of passing. in examination.
- It will also be considered for grace marks as per existing rules
- Combined theory and practical of internal assessment will be considered for passing in internal assessment.
- Student will be allowed to appear for both theory and practical exam independent of marks obtained in internal assessment but he if fails in that head even after including the grace marks he will be declared "Fail in that Subject"

Internal assessment in Theory -

1. Examinations during semesters: This will be carried out by conducting theory examination during 6th semester (40 marks).
2. Prelim examination : This shall be carried out during 7th semester. One theory papers of 40 marks as per university examination.
   Total marks of Internal assessment- Theory will be addition of A and B.

Internal assessment in Practical

Examinations at end of Clinical postings:-

1. There will be practical examination at the end of each clinical posting of Opthalamology.,4th and 6th semester. Each examination will be of 50 marks. Total of 2 examinations – 100 marks , will be converted to 5 marks.(C/5)
2. Prelim examination: This will be conducted for 40 marks as per university pattern and
   marks will be converted to 5 (D/5).
   Total marks of Internal of-of Practical will be addition of C and D.

Approved in BOM 45/2015, Dated 28/04/2015
Resolution No. - 3.4 (c)

Resolution No. 3.4(c): Resolved to accept revised method to calculate internal assessment marks for following subjects:

ENT & Ophthalmology: for the batch starting their IV semester in Feb 2017.

Theory:

	ENT	Ophthalmology
IVth / VIth Sem. & Prelim Exam.	07	07
Day to day assessment as per MCI norms	03	03
Total marks	10	10

Practical:

	ENT	Ophthalmology
IVth / VIth Sem. & Prelim Exam.	07	07
Day to day assessment as per MCI norms	03	03
Total marks	10	10

Approved in BOM - 43/2015, Dated 06/11/2015
Resolution No. - 3.3 (d)

Resolution No. 3.3(d): Resolved that the basic research methodology should be taught to UG and PG students for all courses as per their regulatory Council Norms.

Approved in BOM - 43/2015, Dated 06/11/2015
Resolution No. - 3.3 (a)

Resolution No. 3.3(a): Resolved to include,

(i) Topics in Chest Medicine : ARDS, OSA and Pulmonary Thrambo-Embolism which should be covered in two lectures.

(ii) Care of Terminally ill patient under the heading of Geriatric Medicine.

For the batch of Students entering into 3rd MBBS (Part-I) from February 2016 onwards.

Ophthalmology Syllabus for MBBS

GOAL:

The broad goal of undergraduate teaching in ophthalmology is to provide knowledge and skills that shall enable him/her:

1. To practice as a primary care physician and provide primary eye care in an emergency
2. Identify ophthalmic diseases including emergencies
    a. Chemical Burns, Sudden Loss of vision
    b. Manage various eye conditions like conjunctivitis, stye, chalazion and foreign body.
    c. Recognize the ophthalmic manifestations of systemic diseases
    d. Vitamin "A": Ocular manifestation of vitamin A deficiency and its management.
3. Should know adverse drug reactions with special reference to ophthalmic manifestations
4. Refer to the appropriate center and provide follow up to the patients
5. Eye bank and Eye camp organization
6. To understand the prevalence and prevention of the common public health problems related to ophthalmology

OBJECTIVES

MUST KNOW:

1. Aetiology, clinical features and treatment of conjunctival infections, allergies, pterygium, xerosis and trachoma.
2. Aetiology, clinical features, complications and treatment of corneal ulcers, keratomalacia and other scleral and corneal inflammations.
3. Basic principles of keratoplasty, eye donation and corneal blindness.
4. Aetiopathogenesis and complications of ectropion, entropion, ptosis, lagophthalmos, symblepharon and lid inflammations.
5. Aetiology, clinical features and treatment of lacrimal sac infections and causes of epiphora.
6. Classification, clinical features, diagnosis and treatment of various forms of congenital and senile cataract.
7. Classification, aetiology, clinical features, complications and management of various forms of uveitis.
8. Classification, aetiology, clinical features and management of various types of Glaucomas.
9. Differential diagnosis of 'Red eye'.
10. Classification, clinical features and treatment of various refractive errors and presbyopia.
11. Types of blindness and their causes.

12. Objectives of National Programmes of Prevention and Control of Blindness, Trachoma Control Programme and vision 2020.
13. Aetiology, clinical features and treatment of common retinal disorders including vascular occlusions, inflammation and detachment.
14. Differentiate senile cataract and Open Angle Glaucoma.
15. Determine visual activity.
16. Test colour vision.
17. Use of Ophthalmoscope.
18. Examine anterior segment of eye.
19. Distant direct ophthalmoscopy for diagnosis of cataract.

DESIRABLE TO KNOW:

1. Types of ocular trauma, clinical features, complications and management including Sympathetic Ophthalmia.
2. Aetiology, clinical features and management of optic nerve disorders including differentiation of papilledema and optic neuritis.
3. Aetiology, clinical features, and management of orbital diseases; common causes of proptosis.
4. Ocular manifestation of systemic diseases including diabetes, hypertension, tuberculosis, leprosy, anemia, AIDS and pregnancy – induced hypertension.
5. Ocular side effects of systemic drugs.
6. Aetiology, clinical features and principles of treatment of vitreous diseases e.g., haemorrhage degeneration, liquefaction, and endophthalmitis.
7. Recent advances in ophthalmology – types and scope of lasers, intraocular lens implantation.
8. Determine field of vision.
9. Take conjunctival swab.
10. Remove extraocular foreign body.
11. Perform epilation of cilia.
12. Incise and drain lid abscess.

NICE TO KNOW:

1) Ocular manifestations of common neurological disorders.
2) Aetiology, symptoms, diagnosis and principles of treatment of strabismus.

Clinical Posting:

I. 4 weeks in II MBBS
II. 6 weeks in III/I MBBS (VII Sem.)
   I. **First 4 Weeks:** Basic sciences related to ophthalmology like ocular, Anatomy, Physiology, Biochemistry, Neurology, Examination Technique and orientation to Minor O.T.
   II. **Next 6 Weeks:**Clinical Ophthalmology, including ward & Theatre postings Community ophthalmology.

EVALUATION:

Ophthalmology

Methods – TheoryPractical and Viva

Pattern of theory examination including distribution of marks, questions and time

1. There shall be one theory paper, carrying 40 marks
2. The paper will have two sections, A and B
3. The paper will be of 2.5 hours duration.
4. Section A will be MCQ in each paper. Section B will have to be written in separate answer sheets.
5. MCQ section A will be given to candidates at the beginning of the examination. After 30 minutes Section A will be collected. Section B of paper will then be handed over to candidates.

THEORY: - 40 marks Duration: Two and half hours (2.5) Hours

Section A:30 min. duration

1. **Twenty MCQs- 1/2mark each : 10 marks**
2. Separate paper Single based response
3. MCQ will cover whole syllabus

Section B:2 hours duration

1. Two long questions (LAQ) of 7 marks each : 14 marks

(Will contain some preclinical / Para clinical aspects)

2. **Four/five (SAQ) short notes - 4 marks each : 16 marks**

PRACTICAL: 40 marks

Clinical

1. One long case: 30 marks: 30 min for examination and 20 minutes for assessment.

Oral (Viva voce):10 marks: 10 min duration

1. **Dark Room&Instruments5 marks**
2. **Drugs5 marks**

Internal assessment in Theory-

1. Examinations during semesters: This will be carried out by conducting two theory examinations during 4th and 6th semester (50 marks each). Total of 100 marks to be converted into 5 marks. (A/5)

2. Prelim examination: This shall be carried out during 7th semester.
   Onetheory paper of 40 marks as per university examination.
   Total of 40 marks to be converted into 5 marks. (B/5)

Total marks of internal assessment-Theory will be addition of A and B

Internal assessment in Practical-
Examinations at end of clinical postings:

1. There will be practical examination at the end of each clinical posting of Ophthalmology, 4th and 6thsemester. Each examination will be of 50 marks. Total of 2 examinations-100 marks, will be converted to 5 marks (C/5)

2. Prelim examination:This will be conducted for 40 marks as per university pattern and marks will be converted to 5 (D/5).

Total marks of internal assessment-of Practical will be addition of C and D.

Any other relevant information

Given below is a logbook guide for MBBS Ophthalmology students

CLINICAL DUTY PROTOCOL-MBBS FINAL PROF. PART-I

Name:..... **Duty Period:**.....

Roll No:.....

Batch:.....

COMPULSORY (During Ophth. Duty)

☐ Torch with good focus

☐ Corneal loupe (10 x)

IN CLINICAL CLASS

☐ Every student must present minimum **five long cases** and **ten short cases**.

☐ All students to acquire the knowledge of:

1. History taking
2. Methods of recording vision
3. Complete Local Examination including:
   a) Lids & Adnexa
   b) Cornea, Sclera
   c) Anterior Chamber
   d) Iris & Pupil
   e) Lens
   f) Muscle movements

☐ 4. Surgical Instruments

☐ 5. Dark Room Examination (Including: Visual acuity, Maddox rod, Stenopic slit, Pin hole, Lenses, Ophthalmoscopy & Retinoscopy)

CASES TO BE OBSERVED & EXAMINED

1. ☐ Cataract
2. ☐ Aphakia
3. ☐ C.S. Glaucoma
4. ☐ Lid conditions
5. ☐ Stye/Chalzion/Squint
   Entropion/ Ectropion
6. ☐ Corneal Opacity
7. ☐ Conjunctivitis
8. ☐ Pterygium
9. ☐ Epiphora
10. ☐ Corneal Ulcer/Keratitis
11. ☐ Pseudophakia

LECTURES DURING CLINICAL POSTING

1. ☐ History taking
2. ☐ Ocular examination
3. ☐ Techniques
   - ☐ Tonometry
   - ☐ Regurgitation test
   - ☐ Perimetry (incl confrontation peri.)
   - ☐ Corneal sensitivity & Staining
   - Assesment of A.C. depth ☐
   - Lid eversion ☐
   - ☐ Pupillary reflexes / reactions
   - Colour vision test ☐
   - Hirschberg test ☐

Must be able to do himself / herself

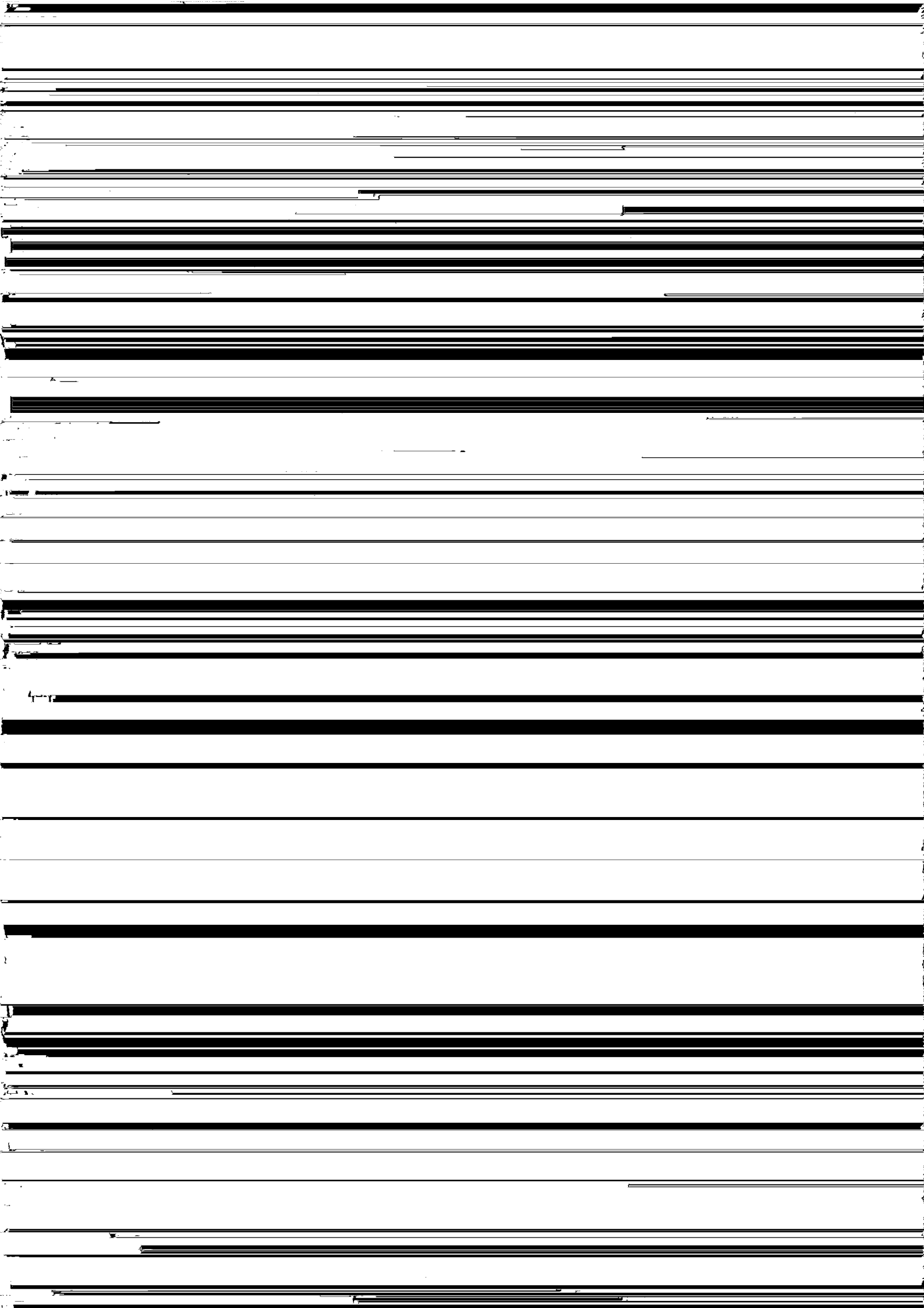
1. ☐ V.A
2. ☐ P.L.
3. ☐ P.R.
4. ☐ Pinhole test
5. ☐ V.fields by confrontation method
6. ☐ Hirschbergs test
7. ☐ Exam. of extraocular movements
8. ☐ Corneal sensitivity test
9. ☐ Pupil- size and reaction
10. ☐ Digital tonometry
11. ☐ Conj. Irrigation

Procedures to be observed

1. ☐ Removal of extraocular F.B.
2. ☐ Syringing
3. ☐ Applying an eye patch and Instillation of eye drops.
4. ☐ Epilation
5. ☐ Conj. Irrigation
6 ☐ Sub-conjunctival injection
7 ☐ Tarsorrhaphy

Surgeries to be observed

1. ☐ Entropion
2. ☐ Cataract
3. ☐ Glaucoma



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Acad to Head

9/11/17.

12. Objectives of National Programmes of Prevention and Control of Blindness, Trachoma Control Programme and vision 2020.
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Examinations at end of clinical postings:

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2. Prelim examination:This will be conducted for 40 marks as per university pattern and marks will be converted to 5 (D/5).

Total marks of internal assessment-of Practical will be addition of C and D.

Any other relevant information

Given below is a logbook guide for MBBS Ophthalmology students

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Batch:.....

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☐ 4. Surgical Instruments

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10. ☐ Corneal Ulcer/Keratitis
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   - ☐ Regurgitation test
   - ☐ Perimetry (incl confrontation peri.)
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   - Assesment of A.C. depth ☐
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3. ☐ Applying an eye patch and Instillation of eye drops.
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6 ☐ Sub-conjunctival injection
7 ☐ Tarsorrhaphy

Surgeries to be observed

1. ☐ Entropion
2. ☐ Cataract
3. ☐ Glaucoma

Text Books:

1. Parson's Diseases of the Eye. 22nd Edition 2015, EditorsRamanjitSihota and RadikaTandon. Elsevier Health Sciences, India
2. Undergraduate Ophthalmology. Editors M. Vanathi and Zia Chaudhari. Wolters Kluwer

MBBS Ophthalmology

Resolution No. 1.3.10.9 of BOM-51/2017: Resolved to approve the following pattern for Internal Assessment calculation for MBBS with effective from batch entering into III/II & III/I from February 2018 onwards:

Ophthalmology: Theory:VI:40 marks
Prelims:40marks
} reduced to 10 marks

Practical:VI:40marks
Prelims:40marks
} reduced to 10 marks

MBBS, Ophthalmology

Resolution No. 3.8.4 of BOM-52/2018: Resolved the following for MBBS, with effect from batch appearing in University January 2019 examination onwards:

Ophthalmology:

- Section A: MCQs: 16x 0.5 marks = 8 marks
- Section B: LAQs: 2x 8 marks = 16 marks
- Section C: SAQs: 4x 4 marks = 16 marks

Total = 40 marks

Resolution No. 3.8.5 of BOM-52/2018: Resolved to accept the below mentioned topics for integrated teachings in MBBS for Orthopedics, Ophthalmology, Radiology and Anesthesia:

II. Ophthalmology:

1. Optic neuritis : Neurology/Medicine
2. Traumatic optic neuropathy: Neurology/Medicine
3. Fractures floor of orbit and walls of orbit: OMFS
4. Orbitotomy : Neuro Surgery
5. Diabetes and eye: Medicine
6. Cortical blindness : Medicine

IIIrd Part - I (MBBS)

Resolution No. 3.5.9 of BOM-52/2018:

a) BOM reiterated the earlier BOM resolution as mentioned below:

Resolution No. 1.3.7.5 of BOM-51/2017: It was resolved that

i) In all the subjects of all courses, MCQ weightage (Section A) shall be a maximum of 20% of the total marks in each paper.

ii) BOS will have to accordingly workout the changes in Section B & C weightage and put up in forthcoming BOS meeting.

iii) Further University Examination section must validate the MCQ Question Bank by Faculties before giving it to question paper-setter.

b) To be effective from:

(i) Ist MBBS - Batch appearing in University August/September 2018 examination onwards.

(ii) IInd MBBS - Batch appearing in University January 2019 examination onwards.

(iii) IIIrd MBBS (Part I) and IIIrd MBBS (Part II) - Batch appearing in University January 2019 examination onwards.

Resolution No. 3.8.4 of BOM-52/2018: Resolved the following for MBBS, with effect from batch appearing in University January 2019 examination onwards:

Ophthalmology:

- Section A: MCQs: 16x 0.5 marks = 8 marks
- Section B: LAQs: 2x 8 marks = 16 marks
- Section C: SAQs: 4x 4 marks = 16 marks

Total = 40 marks