



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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Curriculum for B.Sc. Medical Laboratory Technology

Amended upto BOM -55/2018, Dated 27/11/2018

Amended History

1. Approved as per BOM - 23/2012, Item No. 4, Dated 30/3/2012.
2. As Amended in BOM - 43/2015 [Resolution No. 3.3(d)], Dated 06/11/2015.
3. As Amended in BOM - 45/2016 [Resolution No. 3.6(g)], Dated 28/14/2016.
4. As Amended in BOM - 48/2017 [Resolution No.5.11], Dated 24/01/2017.
5. As Amended in BOM -51/2017, [Resolution No.1.3.14.3] Dated 28/08/2017.
6. As Amended in BOM -55/2018 [Resolution No. 4.13], Dated 27/11/2018.

Curriculum for
B.Sc. (Medical Laboratory Technology)

IN PURSUIT OF EXCELLENCE



MGM INSTITUTE OF HEALTH SCIENCES
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Navi Mumbai-410 209

www.mgmuhs.com

OUTLINE OF COURSE CURRICULUM

B.Sc. (Medical Laboratory Technology)

1. Subject and hours of teaching for Theory and Practical: The number of hours of teaching theory and practical, subject wise in first year, second year and third year are given below.
2. Main and Subsidiary subjects are common in first year for all the B.Sc. courses.

First Year

Main Subjects (First Year)

Sr. no.	Paper	Subjects	Teaching hours			University examination Marks (Only Theory)	Internal assessment marks	Total marks
			Theory	Pracs.	Total			
1	Paper I	Anatomy	35 hrs	25 hrs	60 hrs	80 marks	20 marks	100 marks
2	Paper II					80 marks ↓	20 marks ↓	100 marks
	Section A	Physiology	45 hrs	15 hrs	60 hrs.	40 marks	10 marks	
	Section B	Biochemistry	40 hrs	20 hrs	60 hrs.	40 marks	10 marks	
3	Paper III					80 marks ↓	20 marks ↓	100 marks
	Section A	Pathology	42 hrs	18 hrs	60 hrs.	40 marks	10 marks	
	Section B	Microbiology	48 hrs	12 hrs	60 hrs	40 marks	10 marks	
Total:-								300 marks

Subsidiary subject (First Year)

Sr. no.	Subjects	Teaching hours			University examination Marks	Internal assessment marks	Total marks
		Theory	Pracs	Total			
1	*English	60 hrs	-	60 hrs	-	-	-

- No Practical examination in any subject in I year.
- The candidates are required to get acquainted with English subject, but there will be no university examination. The colleges are required to conduct examination and maintain records, to be sent to University.

Second YearMain Subjects (Second Year)

Sr. no.	Paper	Subjects	Teaching hours			University examination (Theory)	University examination (Prac.)	Internal assessment marks	Total mark
			Theory	Pracs	Total				
1	Paper I	Biochemistry -II	16 hrs	19 hrs	35 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
2	Paper II	Pathology-II	25 hrs	11 hrs	36 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
3	Paper III	Microbiology -II	48 hrs	26 hrs	74 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
Total:-									450 marks

Subsidiary Subjects (Second Year)

Sr. no.	Subjects	Teaching hours			University examination Marks	Internal assessment marks	Total marks
		Theory	Pracs	Total			
1	*Research & Biostatistics	20	-	20 hrs	-	-	-
2	*Computer application & Database Management	20	-	20 hrs	-	-	-

* Students will undergo clinical posting in relevant department for hands on training and should maintain log book to be certified by the faculty.

* Subsidiary Subjects - University examinations will not be conducted for these subjects.

In addition to the above, students will have rotational posting in the various sections of departments of Biochemistry, Pathology & Microbiology for observation as well as hands on training in various laboratory procedures.

Third YearMain Subjects (Third Year)

Total marks	Paper	Subjects	Teaching hours			University examination (Theory)	University examination (Prac.)	Internal assessment marks	Total marks
			Theory	Pracs	Total				
150 marks	1	Biochemistry - III	18 hrs	08 hrs	26 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
150 marks	2.	Pathology-III	51 hrs	10hrs	61 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
450 marks	3	Microbiology -III	21 hrs	2 hrs	23 hrs	80 marks	40 marks (30Prac+10Viva)	30 marks 20(T)+10(P)	150 marks
Total:-									450 marks

First Year Common Syllabus

B.Sc. (Medical Laboratory Technology)

Paper-I
Anatomy

Placement:-First Year

Theory-35 Hours
Practical-25 Hours

Course description

Unit	Syllabus	Lecture (Hrs)	Demo (Hrs)
1	Introduction to Anatomy <ul style="list-style-type: none"> • Terminology 	1	1
2	Skeletal System <ul style="list-style-type: none"> • Classification of bones • Parts of developing long bone • Classification of joints • Appendicular skeleton • Axial skeleton 	1 1 1 1	1 1 1 1
3	Muscular system <ul style="list-style-type: none"> • Types • Muscle groups and movements • Upper limb, lower limb • Neck, back, abdomen 	1 1	1 1 1
4	Joints <ul style="list-style-type: none"> • Shoulder • Hip • Knee • Movements and muscle groups producing movements at other joints 	1 1 1 1	1 1 1 1
5	Respiratory system <ul style="list-style-type: none"> • Nose • Bronchial tree • Thoracic cage and diaphragm • Lung , Bronchopulmonary segments • Mediastinum 	1 1 1	1 1 1
6	Circulatory system <ul style="list-style-type: none"> • Types of blood vessels • Heart 	1 1	1

	<ul style="list-style-type: none"> • Circulation- Systemic and Pulmonary • Major branches from Arch of Aorta • Major Veins 	1 1	1
7	Digestive system <ul style="list-style-type: none"> • Mouth, Tongue, • Pharynx, Oesophagus, • Salivary glands • Stomach, Small and Large Intestine • Liver, Spleen, Pancreas, Gall Bladder 	1 1 1 1	½ ½ 1 2
8	Excretory system <ul style="list-style-type: none"> • Kidney, Ureter • Bladder, Urethra • Skin 	1 1 1	1 1
9	Reproductive system <ul style="list-style-type: none"> • Male- Testis, Spermatic Cord • Female- Ovaries, FT, Uterus 	1 1	½ ½
10	Lymphatic system <ul style="list-style-type: none"> • Tonsil • Lymph node groups- Cervical, Axillary, Inguinal 	1 1	
11	Endocrine system <ul style="list-style-type: none"> • Thyroid, Parathyroid • Adrenal, Pituitary 	1 1	
12	Nervous system <ul style="list-style-type: none"> • Neuron • Parts of nervous system • Brain, spinal cord, brain stem • Cranial and peripheral nerves 	1 1 1	
13	Sensory system <ul style="list-style-type: none"> • Eye and Ear 	1	
Total Hours = 60 hrs.		35 hrs	25 hrs

First Year
Paper-II
Section-A
PHYSIOLOGY

Placement:-First Year

Theory-45 Hours
Practical-15 Hours

Theory:-

Blood:

Composition, properties and functions of Blood.

Haemopoiesis

Haemogram (RBC, WBC, Platelet count, Hb Concentrations)

Blood Groups - ABO and RH grouping

Coagulations & Anticoagulants

5 Hrs

Anaemias: Causes, effects & treatment.

Body Fluid: Compartments, Composition.

Immunity – Lymphoid tissue

Cardio vascular system

Functions of Cardiovascular System

Structures of CVS & Functions.

Functional Anatomy of Heart & their functions, Cardiac cycle.

7 Hrs

Junctional tissues of heart & their functions.

Cardiac output

E C G Blood pressure Heart Rate.

Digestive system

Functions of Digestive system.

Functional Anatomy of Digestive System

Composition and functions of all Digestive juices.

Movements of Digestive System (Intestine).

Digestion & Absorption of Carbohydrate, Proteins & Fats.

4 Hrs

Respiratory System

Functions of Respiratory system

Functional (Physiological) Anatomy of Respiratory System.

Mechanism of respiration.

5 Hrs

Lung Volumes & capacities.

Transport of Respiratory Gases.

Regulation of Respiration

Nervous system

Functions of Nervous system.

Neuron – Conduction of Impulses, factors affecting.

9 Hrs

Synapse- transmission.

Receptors Reflexes

Ascending tracts

Desending tracts.

Functions of various parts of the Brain.

Cerebro Spinal Fluid (CSF): Composition , functions & Circulation.

Lumbar Puncture.

Autonomic Nervous System (ANS): Functions.

Special senses

Vision. Structure of Eye, functions of different parts.

Refractive errors of Eye and correction.

Visual Pathway.

Colour vision & tests for colour Blindness.

3 Hrs

Hearing: Structure and function of ear.
mechanism of Hearing.

Tests for Hearing (Deafness)

Muscle nerve physiology

Types of Muscle.

Structure of skeletal Muscle, sarcomere.

Neuromuscular junction& Transmission.

3 Hrs

Excitation & contraction coupling(Mechanism of contraction)

SKIN

Structure and function.

Body temperature.

Fever.

Regulation of Temperature

1 Hrs

Excretory System

Excretory organs

Kidneys: Functions.

Nephron,

Juxta Glomerular Apparatus

Renal circulation.

Mechanism of Urine formation

Mechanism of Urine Formation.

Micturition., Cystomatogram.

Diuretics.

Artificial Kidney.

4 Hrs

Reproductive systems

Structure & Functions of Reproductive system.

Male Reproductive System: spermatogenesis, Testosterone.

Female reproductive system: Ovulation, Menstrual cycle.

Oogenesis, Tests for Ovulation

Oestrogen & Progesterone 4 Hrs

Pregnancy test

Parturition. Contraceptives.

Lactation : Composition of Milk

Advantages of breast Feeding.

PRACTICALS

15 hours

Study of Microscope and its use

Collection of Blood and study of Haemocytometer 1 Hrs

Haemoglobinometry 2 Hrs

White Blood Cell count 2 Hrs

Red Blood Cell count 2 Hrs

Determination of Blood Groups 1 Hrs

Leishman's staining and Differential WBC Count 2 Hrs

Determination of Bleeding Time. { 1 Hrs

Determination of Clotting Time.

Pulse & Blood Pressure Recording 2 Hrs

Auscultation for Heart Sounds

Artificial Respiration – Demonstration

Spirometry- Demonstration 2 Hrs

First Year

Paper-II
Section-B

BIOCHEMISTRY

Placement:-First Year

Theory-40 Hours
Practical-20 Hours

No.	Syllabus	Lect. Hrs.
1	Introduction and scope of biochemistry	1
2	Chemistry of carbohydrates, proteins, lipids and nucleic acid I)Carbohydrates : Structure, properties, chemical reactions and functions. Amino acid : Essential and nonessential amino acids with structure and function. iii) Proteins: Definition, Classification, Structure of Proteins, Denaturation of Proteins, Primary, Secondary Tertiary and Quaternary (overview) iv) Lipids: Classification and properties. Introduction, Simple Lipids, Compound Lipids, Derived Lipids, Essential Fatty Acids. v) Nucleic acid : Structure of purine and pyrimidine bases, nucleotides and nucleosides. DNA and RNA : structure and properties.	2 1 2 2 2
3	Elementary knowledge of enzymes: Classification, mechanism of enzyme action, Enzyme inhibition, enzyme specificity. Role of coenzymes	3
4	Brief concept of biological oxidation: Electron transport chain. inhibitors and uncouplers briefly.	2
5	Outline of digestion, absorption and metabolism of carbohydrate, proteins and fats. i)Carbohydrate metabolism:-Glycolysis, TCA cycle, Glycogen metabolism Regulation of blood Glucose Concentration, Diabetes Mellitus, Glycosuria. ii) Proteins: General amino acid reactions. Transamination, decarboxylation, deamination. Urea cycle. iii) Lipid metabolism: Cholesterol metabolism, Ketone bodies formation and breakdown iv) Nucleic acid metabolism : Purine catabolism	2 3 2 2 1
6	Importance of some minerals- sodium, potassium, calcium, phosphorous, iron, copper, chloride, fluoride.	2
7	Nutritional aspects of carbohydrates, fats, proteins, balanced diet.	1
8	Introduction to medical lab technology: General introduction Role of medical lab technologists, and responsibility, safety measures and first aid. Cleaning and care of general laboratory glassware and equipment. Elementary knowledge of analytical biochemistry. Principles, functions and uses of balances, centrifuge machines, colorimeters.	4

9	Collection and recording of biological specimens, separation of serum plasma preservation and disposal of biological samples/materials.	2
10	Standard solutions: Various std. solutions used , their preparation ; storage of chemicals .	2
11	Units of measurements: S.I units: Definitions, conversions; Measurement of volume : Strength , Normality ,Molarity, Molality Definitions:Mole, molar and normal solutions (preparation, Standardization), pH (Definition ,Pka value, Example, importance of Henderson-Hasselbalch equation); Buffer solutions(Definition, preparation of important solutions), pH indicators (pH papers, universal & other indicators); pH measurement :different methods (pH paper, pH meter, principle of pH meter, structure, working and maintenance.	4
	Practical and demonstration: Cleaning of glassware Preparation of various solutions Maintenance of laboratory, quality control, and first aid Single pan balance, pH- meter Handling of colorimeters Operation and maintenance Distillation of water. Serum electrolytes Na.K.Cl. Demonstration of semi automated / fully automated blood analyzers. Blood gas analyzer, Elisa reader. Demonstration of disposal of laboratory waste product and infected material. Quality Control Five demonstrations on carbohydrate lipid & Protein metabolism & immunochemistry	20
	Total Theory & Practical hrs.	60 hrs.

First Year

Paper-III

Section-A

PATHOLOGY

Placement:-First Year

Theory-42 Hours
Practical-18 Hours

Sr. No.	Topic	No. of lectures	Number of Practical	Total
1	Introduction to Pathology	01	--	01
2	Working and maintenance of instruments	02	03	05
3	General principles of Histopathology techniques collection, fixation, processing & routine staining	05	03	08
4	General principles of Cytopathology techniques collection, fixation, processing & routine staining	05	02	07
5	General principles of Haematology techniques collection, fixation, processing, routine staining, Haemoglobin, TLC, DLC, Peripheral smear, automatic cell counter	05	03	08
6	General principles of Clinical Pathology techniques sample collection, processing for routine test, normal urine & urine examination	05	03	08
7	General principles of Blood Bank techniques antigen, antibody, ABO & Rh system	05	03	08
8	General principles of Autopsy & Museum	02	01	03
9	General Pathology including introduction to inflammation, circulatory disturbances & neoplasia	05	--	05
10	Systemic pathology basis and morphology of common disorders like anemia, leukemia, AIDS, TB, Hepatitis & malaria	05	--	05
11	Maintenance and medico legal importance of records and specimens	02	--	02
Total		42 + 18		60 hrs

First YearPaper-IIISection-BMicrobiology

Placement:-First Year

Theory-48 Hours
Practical-12 Hours

Unit	Syllabus	Lecture (Hrs)	Demo (Hrs)
1	Concepts and Principles of Microbiology • Historical Perspective, Koch's Postulates • Importance of Microbiology • Microscopy • Classification of Microbes	1 1 1 1	
2	General Characters of Microbes • Morphology, staining methods • Bacterial growth & nutrition • Culture media and culture methods +ABS • Collection of specimen, transport and processing • Antimicrobial mechanism and action	1 1 2 1	1 1 1
3	Sterilization and Disinfection • Concept of sterilization, Disinfection asepsis • Physical methods of Sterilization • Chemical methods (Disinfection) • OT Sterilization • Biological waste disposal	1 1 1 1 1	1
4	Infection and Infection Control • Infection, Sources, portal of entry and exit • Standard (Universal) safety Precautions • Hospital acquired infections • Hospital Infection control Programme	1 1 1 1	
5	Immunity • Types Classification • Antigen, Antibody – Definition and types • Ag-Ab reactions – Types and examples • Hypersensitivity - Definition and classification • Immunoprophylaxis – Types of vaccines, cold chain	1 1 1 1 1	1

Hours
2 Hours
Demo
(Hrs)

	<ul style="list-style-type: none"> • Immunization Schedule 	1	
	Systemic Bacteriology (Morphology, diseases caused, specimen collection & lists of laboratory tests)	1	
	• Introduction	1	
	• Gram Positive Cocci	1	1
	• Gram Negative Cocci	1	
	• Enterobacteraceae	1	
	• Imp Gram Negative-Organism	1	1
	• Mycobacteria	1	
	• Anaerobic bacteria	1	1
	• Spirochaetes	1	
	• Zoonotic diseases	1	
7	<p>Mycology</p> <ul style="list-style-type: none"> • Introduction, Classification, outline of lab diagnosis <p>List of Fungi causing:</p> <ul style="list-style-type: none"> • Superficial Mycoses • Deep mycoses • opportunistic fungi 	1	1
1		1	
1		1	
1		1	
8	<p>Virology</p> <ul style="list-style-type: none"> • Introduction, General Properties, outline of lab diagnosis • DNA & RNA Viruses-Classification, diseases caused • HIV Virus • Hepatitis Virus 	1	1
1		1	
1		1	
1		1	
9	<p>Parasitology – morphology, life cycle & outline of lab diagnosis</p> <ul style="list-style-type: none"> • Introduction, Classification • Protozoa- E. histolytica • Malarial Parasite <p>General properties, classification, list of diseases caused by:</p> <ul style="list-style-type: none"> • Cestodes and Trematodes • Intestinal Nematodes • Tissue Nematodes 	1	1
		1	
		1	
		1	
1		1	
	• Vectors		1
Total:-60 hrs.		48 hrs	12 hrs

Subsidiary Subjects

First Year

1. ENGLISH

Placement:-First Year

Theory-60 Hours

Course description : The course is designed to enable students to enhance ability to comprehend spoken and written English (and use English) required for effective communication in their professional work. Students will practice their skills in verbal and written English during clinical and classroom experience.

Specific objectives: At the end of the course the students are able to:

- 1) Develop good vocabulary skills for effective communication.
- 2) Effectively communicates with patients while rendering care.
- 3) Understands methods of writing and drafting letters in English.
- 4) Develop ability to read understand and express meaningfully, the prescribed text.
- 5) Plans and writes nursing process and records effectively.
- 6) Develops skills in listening.

Unit	Hours	Theory	Hours	Exercises
I	7 Hrs	<input type="checkbox"/> Review of Grammer <input type="checkbox"/> Remedial study of grammer <input type="checkbox"/> Building Vocabulary <input type="checkbox"/> Lexical sets	3 Hrs	<ul style="list-style-type: none"> • Use of Dictionary and Grammer • Practice appropriate words and expression • Revising parts of speech Pairs of confused words,

				synonyms & Antonyms <ul style="list-style-type: none"> • Lexical sets & collocations • Using appropriate words and expressions.
II	20 Hrs	<input type="checkbox"/> Read and comprehend prescribed course books <input type="checkbox"/> Skimming & Scanning <input type="checkbox"/> Reading in sense groups <input type="checkbox"/> Reading between the lines	07 Hrs	<ul style="list-style-type: none"> • Reading • Summarizing • Comprehension
III	5 Hrs	<input type="checkbox"/> Various forms of composition Letter writing <input type="checkbox"/> Note making & Note takings <input type="checkbox"/> Precis writings <input type="checkbox"/> Anecdotal records <input type="checkbox"/> Diary writing <input type="checkbox"/> Reports on health problem <input type="checkbox"/> Resume/CV <input type="checkbox"/> Notices, Agenda, minutes <input type="checkbox"/> Telegram <input type="checkbox"/> Essay	5 Hrs	<ul style="list-style-type: none"> • Letter writing • Note making & Note takings • Precis writings • Anecdotal records • Diary writing • Reports on health problem • Resume/CV • Notices, Agenda, minutes, telegram, essay • Discussion on written reports/documents
IV	3 Hrs	<input type="checkbox"/> Spoken English Phonetics, Public speaking <input type="checkbox"/> Oral report	3 Hrs	<ul style="list-style-type: none"> • Debate • Participating in Seminar, Panel discussion, Symposium

		<input type="checkbox"/> Group Discussion Debate <input type="checkbox"/> Telephonic Conversation Conversational skills (Formal, Neutral & informal situation)		<ul style="list-style-type: none"> • Telephonic Conversation Conversation in different situations, • Practice in public speaking
V	5 Hrs	<input type="checkbox"/> Listening Comprehension Media, audio, video, speeches etc.	2 Hrs	<ul style="list-style-type: none"> • Listening to audio, video tapes and identify the key points, accent & information pattern.

Bibliography:

1. Living English Grammer & Composition Tickoo M.L. & Subramaniam A. E, Oriental Longman, New Delhi.
2. English for practical purposes Valke, Thorat patil & Merchant, Macmillan Publication, New Delhi.
3. Enriching your competence in English, by Thorat, Valke, Orient Publication, Pune
4. English Grammer & Composition Wren & Martin, S. Chand Publications-2005, Delhi.
5. Selva Rose, Carrier English for Nurses, Ist edition-1999, published by Orient Longman Pvt. Ltd.-1997, Chennai.

Common exam pattern for all 1st year

B.Sc. courses.

Main Subjects:

Paper I: Anatomy

Theory pattern: University Examination

Time: Duration: 3hrs.

Total Marks: 80 marks.

Distribution of Marks.

Question type	No. of questions	Questions to be answered	Question X marks	Total marks
Long essays	3	2	2x10 mks	20 marks
Short essays	8	6	6x 5 mks	30 marks
Short answers	12	10	10x 3 mks	30 marks
				Total= 80 marks

Paper II: Physiology (Section A) and Biochemistry (Section B)

Theory pattern:

Time: Duration: 3hrs.

Total Marks: 80marks.(Section A: 40 marks + Section B: 40 marks)

Distribution of marks

Paper II, Section A: Physiology.

Question type	No. of questions	Questions to be answered	Question X marks	Marks
Long essays	2	1	1x10 mks	10 marks
Short essays	5	3	3 x 5 mks	15 marks
Short answers	7	5	5x 3 mks	15 marks
				Total= 40 marks

Paper II, Section B: Biochemistry.

Question type	No. of questions	Questions to be answered	Question X marks	Marks
Long essays	2	1	1x10 mks	10 marks
Short essays	5	3	3 x 5 mks	15 marks
Short answers	7	5	5x 3 mks	15 marks
				Total= 40 marks

Paper III: Pathology (Section A) and Microbiology(Section B)

Theory pattern.

Time: Duration: 3hrs.

Total Marks: 80 marks: (Section A: 40 marks + Section B: 40 marks)

Distribution of marks

Paper III, Section A: Pathology

Question type	No. of questions	Questions to be answered	Question X marks	Marks
Long essays	2	1	1x10 mks	10 marks
Short essays	5	3	3 x 5 mks	15 marks
Short answers	7	5	5x 3 mks	15 marks
				Total= 40 marks

Paper III, Section B: Microbiology

Question type	No. of questions	Questions to be answered	Question X marks	Marks
Long essays	2	1	1x10	10 marks
Short essays	5	3	3 x 5	15 marks
Short answers	7	5	5x 3	15 marks
				Total= 40 marks

Second Year B.Sc. (Medical Laboratory Technology)

Main Subjects

Paper I

BIOCHEMISTRY-II

Placement: Second Year

Theory=16 Hours

Practical=19 Hours

Sr. No.	Topic	Sessions		
		L	L/D	P
1	Methods of blood collection, use of anticoagulants	1	1	
2	Acid base balance : Definition and importance of blood pH and its maintenance, Acidosis and alkalosis	1		
3	Quality Control: Its importance. Accuracy, Reliability, Precision Internal and external quality control measure, standardization of methods, safety measures and precautions.	2	1	1
4	Serum electrophoresis, Chromatography			2
5	Blood analysis with standard curve:-			
	(a) Sugar			1
	(b) Cholesterol			1
	(c) Urea & Serum Creatinine			1
	(d) Bilirubin (total & direct)			1
	(e) Total proteins and AG ratio			1
	(f) Sodium & Potassium			1
	(g) Calcium			1
	(h) Chlorides			1
6	Preparation of standard solution, reagents, buffers and / indicators: -			
	(a) Normal solution			1
	(b) Molar concentration			1
	(c) Preparation of common reagents and buffers	1		1
	(d) Indicators		1	
	(e) pH and adjustment of pH	1		1
7	Standardization of pipettes.	1		1
8	Preparation of patients for different tests and special precautions to be taken for various test	1		
9	Examination of cerebro-spinal fluid for: -			
	(a) Proteins & Globulins			1
	(b) Sugar			1
	(c) Chlorides			1
	(d) Globulins		1	
	(e) Cells		1	
10	Normal composition of CSF	1		

Second Year

Paper II

PATHOLOGY-II

Placement: Second Year

Theory=25 Hours

Practical=11 Hours

HAEMATOLOGY INCLUDING BLOOD
TRANSFUSION

Sr. No.	Topic	Session		
		L	L/D	P
1	Introduction to Clinical Hematology	1		
2	Composition of peripheral blood	1		1
3	Erythropoiesis	1		
4	Leucopoiesis and thrombopoiesis	1		
5	Composition of Bone marrow	1		1
6	Normal hematological values & physiological Variations	1		
7	Collection of blood for hematological investigations		1	
8	Preparation of stains and buffers in hematology	1		1
9	Preparation of common anticoagulant bottles		1	
10	Preparation of peripheral blood and bone marrow smears	1		
11	Examination of peripheral blood smear	1		1
12	Romanowsky stains		1	
13	Special stains in hematology	1		
14	Identification of common haemoparasites	1		1
15	Total RBC counts	1		1
16	Total and differential WBC count	1		1
17	Estimation of Hemoglobin	1		1
18	Platelet count	1		1
19	Normal Haemostasis	1		
Total		15	04	09

CLINICAL PATHOLOGY

Sr. No.	Topic	Session		
		L	L/D	P
1	Normal composition of body fluids (semen, sputum, exudates, transudates)	1		
2	Examination of semen		1	1
3	Examination of serous effusions		1	
4	Examination of CSF		1	1
5	Pregnancy tests		1	
6	Normal composition of urine	1		
Total		2	4	2

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Second Year

Paper III

MICROBIOLOGY-II

Placement: Second Year

Theory=48 Hours
Practical=26 Hours

Sr. No.	Topic	Session		
		L	L/D	P
1	Introduction to bacteriology and safety precautions in microbiology laboratory	1		
2	A knowledge of working' and maintenance of the following: Incubators, Refrigerators, Water baths, Ovens, Steamers, Autoclaves, Inspissator, Centrifuges. Cleaning and sterilization of syringes and needles. Simple glass manipulations.		2	
3	Sterilization: Methods of sterilization and their uses.	1		
4	Elementary knowledge of common pathogens	1		
5	Classification , morphology and physiology of bacteria	1		
6	Collection of specimens for bacteriological examination	1		
7	Handling and preparation of the specimens for microscopic examination (stained and unstained)		1	
8	Common microscopic procedures and bacteriological staining techniques (Gram, ZN, Albert's stain, Wet mount, Iodine mount, KOH preparation, India Ink preparation)	1		1
9	Composition and preparation of common types of culture media.& Miscellaneous: Methods of preservation of cultures,maintenance of stock cultures, disposal of infected material and culture media.	2	1	3
10	Selective media and transport media		1	
11	Cultural Methods: Preparation and sterilization of media. Inoculation and examination of inoculated Plates.	1		1
12	Cultural Methods: Preparation and sterilization of media. Inoculation and examination of inoculated Plates.	1		1
13	Preparation and inoculation of sugar sets and other biochemical tests including TSI	1		1
14	The general principles of the methods employed in identifying an unknown organism.	1		
15	Examination of specimens such as pus, body fluids,			2

	urine, stool, sputum, throat swab etc			
16	Blood Culture including Automated culture		1	
17	Pyogenic gram positive cocci	1		1
18	Mycobacteria	1		1
19	Enterobacteriaceae	1		1
20	Pseudomonas and Acinetobacter	1		1
21	Salmonella group of organisms	1		1
22	Shigella	1		1
23	Vibrio cholera and related organisms	1		1
24	Anaerobic bacteria		1	
25	Spirochetes	1		
Total		20	7	17

Parasitology

Sr. No.	Topic	Session		
		L	L/D	P
1	Life cycle of common helminths	1		
2	Preparation of stool for examination of parasites		1	
3	Identification of common stool ova and cysts	1		1
4	Preparation of peripheral smear for Malarial parasites.		1	
Total		2	2	1

Mycology

Sr. No.	Topic	Session		
		L	L/D	P
1	Introduction to the study of fungi	1		
2	Various fungal infections	1		
3	Direct examination and staining methods for fungal studies	1		1
4	Fungal cultures and preparation of culture media	1	1	
5	Slide culture, Lactophenol cotton blue stain, germ tube test		1	
Total		4	2	1

Serology

Sr. No.	Topic	Session		
		L	L/D	P
1	Introduction to immunology, use of serological investigations in various diseases	1		
2	Collection and preservation of blood, serum and other specimens for various serological studies	1		
3	Antigen-Antibody reactions	1		
4	Agglutination tests :-			
	(a) Slide methods	1		
	(b) Tube methods			1
	(c) Widal test			1
	(d) Brucella Agglutination Test & 2 ME Test		1	
	(e) Rapid Immunological Tests for Infectious Diseases			1
	(f) Other tests		1	
5	Haemagglutination- Paul Bunnell test, cold Agglutination	1		
6	VDRL, ASO, RA, CRP, Latex agglutination tests	1		1
7	Markers of Hepatitis B Infections	1		1
8	HIV and AIDS	1		1
9	ELISA Test- qualitative and quantitative & other labeled assays.	1		1
	Total	09	02	07

Second YearSubsidiary Subjects1. RESEARCH AND BIO STATISTICS

Placement: Second Year

Theory= 20 Hours

Course Description:

Introduction to basic statistical concepts: methods of statistical analysis; and Interpretation of data

Behavioural Objectives:

Understands Statistical terms.

Possesses knowledge and skill in the use of basic statistical and research methodology.

Unit- I: Introduction

Meaning, definition, characteristics of statistics.

Importance of the study of statistics.

Branches of statistics.

Statistics and health science including nursing.

2 hrs

Parameters and estimates.

Descriptive and inferential statistics.

Variables and their types.

Measurement scales.

Unit- II: Tabulation of Data

Raw data, the array, frequency distribution.

Stem-leaf display

2 hrs

Basics principles of graphical representation.

Types of diagrams- histograms, frequency polygons, smooth frequency polygon, commulative frequency curve, ogive.

Unit- III: Measure of Central Tendency

Need for measures of central tendency

Definition and calculation of mean- ungrouped and grouped.

Trimmed mean

Meaning, interpretation and calculation of median ungrouped and grouped.
Meaning and calculation of median ungrouped and grouped. 4 hrs.
Meaning and calculation of mode.
Comparison of the mean, mode & median.
Guidelines for the use of various measures of central tendency.

Unit- IV: Measure of Variability

Need for measure of dispersion.
The range, the average deviation. 4 hrs
The variance and standard deviation.
Calculation of variance and standard deviation ungrouped and grouped.
Properties and uses of variance and SD

Unit- V: Measures of Skewness & Kurtosis

Needs for measure of skewness & Kurtosis
Karl pearson's co-efficient of skewness
Types of Kurtosis 1 hrs

Unit- VI: Sampling Techniques

Need for sampling-Criteria for good samples
Application of sampling in Community. 6 hrs
Procedures of sampling and sampling designs errors.
The normal distribution.
Sampling variation and tests of significance.
Student's t-test, chi-square test, z-test.

Unit- VII: Health Indicator

Importance of health Indicator
Indicators of population, morbidity, mortality, health services. 1 hrs
Calculation of rates, and rations of health.

Recommended Books

B.K. Mahajan & M. Gupta (1995) Text Book of Preventive & Social Medicine, 2002, 17th Edition Jaypee Brothers.

Second Year

2. Computer Application & Database Management

Placement: Second Year

Theory= 20 Hours

The course enables the students to understand the fundamentals of computer and its applications.

Introduction to data processing:

Features of computers, Advantages of using computers. Getting data into/out of computers. Role of computers. What is Data processing? Application areas of computers involved in Data processing. Common activities in processing. Types of Data processing. Characteristics of information. What are Hardware and software?

Hardware Concepts:

Architecture of computers, Classification of computers, Concept of Damage. Types of storage devices. Characteristics of disks, tapes, Terminals, Printers, Network. Applications of networking concepts of PC System care, floppy care, Data care. Concept of software.

Classification of software: System software. Application of software. Operating system.

Computer system: Computer Virus. Precaution against viruses. Dealing with viruses.

Computers in Medical electronics.

Basic Anatomy of Computers.

Principles of programming.

Computer application- principles in scientific research; work processing, medicine, libraries, museum, education, information system.

Data Processing

Computer in physical therapy- principles in EMG, Exercise testing equipment, Laser.

Third Year

III Year B.Sc. (Medical Laboratory Technology)

Main Subjects

Paper I

BIOCHEMISTRY-III

Placement: Third Year

Theory=18 Hours
Practical=08 Hours

Sr. No.	Topic	Session		
		L	L/D	P
1	Glucose tolerance test (Normal and diabetic)	1		1
2	Liver function tests. (Including SGPT, SGOT ALP)	2		3
3	Kidney function tests. (Urea, creatinine with clearance)	1		2
4	Estimation of enzymes - acid phosphatase, CPK, LDH			1
5	Automation in clinical biochemistry: Principle, types and use of Autoanalysers, Blood gas analyzers, Role of computers in the laboratory.	2	1	
6	Universal precautions	1		
7	Handling of semi auto and automatic batch and random access analyzers		1	
8	Blood Glucose, Glycosylated Hemoglobin	1		1
9	Hormonal Assays T3, T4, Prolactin Chemiluminescence	1		
10	Hormones and their physiological role	1		
11	Estimation of common hormones (T3,T4,TSH,LH,FSH)	1		
12	Tests in coronary artery disease-Cardiac profile tests.	1	1	
13	Nephelometry / Turbidometry		1	
14	Chemiluminescence / Enzyme Immuno Assay		1	
15	Dry Chemistry	1		
Total		13	05	08

Third YearPaper IIPathology -III

Placement: Third Year

Theory=51 Hours

Practical=10 Hours

HAEMATOLOGY

Sr. No.	Topic	Session		
		L	L/D	P
1	Estimation of Packed cell volume	1		1
2	Determination of ESR	1		1
3	Estimation of Absolute values	1		
4	Serum Iron, Serum Ferritin, TIBC	1		
5	LE cell phenomenon, sickling test	1		1
6	Peroxidase staining and cytochemistry, NAP scoring		1	
7	Investigations of hemolytic anaemias	1		
8	Investigations of thalassemias and Haemoglobinopathies	1		
9	Hb and serum electrophoresis and HPLC		1	
10	Blood groups	1		
11	ABO Blood grouping			1
12	Determination of bleeding time, coagulation time	1		1
13	Estimation of prothrombin time		1	
14	Abnormal development of WBCs, RBCs and platelets	1		
15	Reticulocyte count		1	
16	Identification of malarial parasites	1		1
17	Special hematology (Sickling test, Osmotic fragility, G-6-p dehydrogenase deficiency, Cytochemistry)		2	
18	Haemostasis and coagulation	1		
19	Investigations of hemorrhagic disorders	1		
20	Automation in Haematology	1		
21	Stem cells- preparation , processing and storage		1	
22	Introduction to flow cytometry	1	1*	
Total		15	08	06

CLINICAL PATHOLOGY

Sr. No.	Topic	Session		
		L	L/D	P
1	Urine Microscopic examination		1	1
2	Urine Special (Amino Aciduria, Myoglobinuria and haemoglobinuria)	1		
3	Sputum (Cytology, Micro, (AFB)	1		
4	Gastric analysis	1		
5	Demonstration of Barr bodies		1	
6	Exam of faeces for occult blood, fats and Stercobilinogen	1		
Total		4	2	1

BLOOD BANKING

Sr. No.	Topic	Session		
		L	L/D	P
1	FDA regulation and keeping records as per FDA	1		
2	Principles of ABO/Rh grouping and factors affecting results	1	1	1
3	Donor selection for transfusion	1		
4	Adverse donor reactions	1		
5	Cross matching	1	1	1
6	Blood bank administration	1		
7	Selection and bleeding of donor	1	1	
8	Anticoagulation in blood bank	1		
9	Antiglobulin test-direct and indirect	1		1
10	Antibody titration including cold agglutinants		1	
11	Autologous transfusion	1		
12	Transfusion transmitted infection	1		
13	Investigation of transfusion reaction	1		
14	Introduction to Blood components	1	1	
15	Preparation of RDP & SDP	1		
16	Storage and issue of blood components	1		1
17	Equipment maintenance		1	
18	Quality control in blood transfusion practice	1		
Total		16	6	3

Third Year

Paper III

Microbiology -III

Placement: Third Year

Theory=21 Hours

Practical=2 Hours

Sr. No.	Topic	Session		
		L	L/D	P
1	Corynebacteria, Pasteurella, Brucella	1		
2	Culture techniques in parasitology	1		
3	Introduction to virology techniques.		1	
4	Preparation of virus culture media and viral isolation Techniques	1		
5	Serological tests for viral and Rickettsial infections		1	
6	Collection and transport of specimens for viral studies	1		
7	HIV, HBV, HCV, Herpes group, Hep A, Hep E	2		2
8	Lab diagnosis of Rabies	1	1	
9	Vaccines	1		
10	Serological Methods : precipitation tests		1	
11	MRSA and methods of its identification		1	
12	ESBLs and double disc synergy tests		1	
13	Bacteriological examination of water, milk, ice cream		1	
14	QBC method for malaria detection		1	
15	Air surveillance in health care settings		2	
16	Quality control measures in microbiology	1		
17	Hospital acquired infections and waste disposal Management	1	1	
Total		10	11	02

Exam Pattern.

1. Internal Exams: TWO in number.

Theory exam

Exam	Time to conduct internal exams	Theory Marks	Practical Marks
1. Mid Term Exam	After 6 month from starting the course	40	20
2. Pre final Exam	Atleast 1 month prior to final university exam.	80	40
Total		120	60
Internal Assessment (to be scaled down from total of the two exams)		Out of 20	Out of 10

2. University Exam: (exam at the end of each year)

Final marks distribution

University Exam	Theory	Practical
University exam	80	40 (30Pra+10Viva)
Internal Assessment	20	10
Total Marks	100	50

Exam paper pattern Theory (Prefinal Exam)

Question type	No. of questions	Questions to be answered	Question X marks	Total marks
Long essays	3	2	2x10	20 marks
Short essays	8	6	6x 5	30 marks
Short answers	12	10	10x 3	30 marks
				Total= 80 marks

Exam paper pattern Theory (Midterm Exam)

Question type	No. of questions	Questions to be answered	Question X marks	Total marks
Long essays	2	1	1x10	10 marks
Short essays	4	3	3x 5	15 marks
Short answers	6	5	5x 3	15 marks
				Total= 40 marks

Heads for passing:-

1. Minimum 40% in the University paper of 80 marks and minimum 50% in the total 100 marks(80 + 20 IA)
2. 75%: (out of 100 marks): Distinction.
3. 60%: out of 100 marks): First class.
4. 50% (out of 100 marks): Pass class

A student can carry a backlog of 2 subjects in the first year but should pass the subjects in the next supplementary exam. In the second and third year, a backlog of only one subject is permitted.

Resolution No. 3.2(d): Resolved to delete the topics OSPE, Mal absorption, PUO, Gastric Analysis in Practical of Pathology (UG) for the batch of Students entering into 2nd MBBS from the academic year 2016-17 onwards.

Resolution No. 3.2(e): Resolved to add following Demos for UG Students (Pathology)-Histogram & CBC for the batch of Students entering into 2nd MBBS from the academic year 2016-17 onwards.

Resolution No. 3.2(f): Resolved that 10% of Practical marks in Grand Viva for PG examination be allotted for Dissertation Viva with immediate effect.

Keep in all 9 G courses MD/MS + ATLS

3.3 Medicine and Allied :

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

- (i) Topics in Chest Medicine : ARDS, OSA and Pulmonary Thrambo-Embolicism 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.

Resolution No. 3.3(b): Resolved to approve the changes in syllabus of MD Geriatric Medicine (Annexure-IX) with immediate effect.

Resolution No. 3.3(c): Resolved to approve the changes in syllabus of MD in Emergency Medicine (Annexure-X) with immediate effect.

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.

Keep in all UG & PG courses

Resolution No. 3.3(e): Resolved to accept the proposed pattern of redistribution of the marks in Dermatology and Psychiatry subjects in theory papers of Medicine subject at MBBS level for the batch of Students entering into 3rd MBBS (Part-II) from February 2016 onwards, as given below:

The change in Paper 2 section C should be as under:

Section C (Marks 10)

C1 Psychiatry Section (Marks 10)

Question 1 – long question (Marks 4)

Question 2- short answer question attempt any 2 (Marks 6)

- a.
- b.
- c.

C2 Dermatology Section (Marks 10)

Question 1 – long question (Marks 4)

Question 2 – Short answer question attempt any 2 (Marks 6)

- a.
- b.
- c.

✓ **Resolution No. 3.3(f):** Resolved to adopt the change in internal assessment pattern of Community Medicine (Annexure-XI) for the batch of Students entering into 2nd MBBS from August 2016 onwards.

✓ **Resolution No. 3.3(g):** Resolved to start Certificate Course and Fellowship in Critical Care Medicine (Annexure-XII) at MGM Medical College, Navi Mumbai from academic year 2016-17. Therefore, Dean, MGM Medical College, Navi Mumbai is requested to work on the feasibility and other regulatory norms to start this course.

✓ **Resolution No. 3.3(h):** Resolved to start Certificate Course and Fellowship in Sleep Medicine (Annexure-XXVIII) at MGM Medical College, Navi Mumbai from academic year 2016-17. Therefore, Dean, MGM Medical College, Navi Mumbai is requested to work on the feasibility and other regulatory norms to start this course.

✓ **Resolution No. 3.3(i):** Resolved to approve the Examination pattern for MD in Immuno Haematology & Blood Transfusion (Annexure-XIII) with immediate effect.

3.4 Surgery and Allied :

Resolution No. 3.4(a): Resolved that :

- (i) Topic of Polytrauma and its management be included in the Orthopedic UG syllabus in consultation with Surgery Department for the batch of Students entering into 3rd MBBS (Part-II) from February 2016 onwards.
- (ii) Following Topics be excluded from the Orthopedic UG syllabus for the batch of Students entering into 3rd MBBS (Part-II) from February 2016 onwards :
 - a) Acute poliomyelitis
 - b) Fungal infection and Leprosy in orthopedic
 - c) Cerebral Palsy and rehabilitation

Practical:

	OBGY.	General Surgery
VI th / VIII th Sem. & Prelim Exam.	15	20
Day to day assessment as per MCI norms	05	10
Total marks	20	30

Resolution No. 3.4(e): Resolved to accept Academic Calendar for UG (III MBBS Part 2) and PG course 2016-17. [Annexure – V of BOM-45/2016]

Resolution No. 3.5: It was resolved to start Fellowship course in Clinical Nephrology at MGM Medical College, Aurangabad from June 2016 as per the syllabus. [Annexure – X of BOM-45/2016]

✓ **Resolution No. 3.6(f):** It was resolved to accept Human Anatomy journal for 1st year B.Sc. students of Paramedical courses to be implemented from 2016-17 Batch onwards. [Annexure – XI of BOM-45/2016]

✓ **Resolution No. 3.6(g):** It was resolved to accept Microbiology Journal [Annexure - XII (A) & (B) of BOM-45/2016] & Microbiology Log book [Annexure - XIII (A) & (B) of BOM-45/2016] for B.Sc. MLT 2nd & 3rd year courses to be implemented from 2016-17 Batch onwards and old batches as well.

✓ **Resolution No. 3.6(h):** It was resolved to accept journal [Annexure - XIV of BOM-45/2016] & log book [Annexure - XV of BOM-45/2016] for 1st, 2nd & 3rd year of M.Sc. Medical Anatomy courses to be implemented from 2016-17 new Batch onwards and as well as for Students who have taken admission in 2015-16 and will be entering into their 2nd year in 2016-17.

✓ **Resolution No. 3.6(i):** It was resolved to accept journal [Annexure - XVI of BOM-45/2016] & log book [Annexure - XVII of BOM-45/2016] for 1st, 2nd & 3rd year of M.Sc. Medical Physiology to be implemented from 2016-17 new Batch onwards and as well as for Students who have taken admission in 2015-16 and will be entering into their 2nd year in 2016-17.

✓ **Resolution No. 3.6(j):** It was resolved to accept journal [Annexure - XVIII of BOM-45/2016] & log book [Annexure - XIX of BOM-45/2016] for 1st, 2nd & 3rd year of M.Sc. Medical Microbiology to be implemented from 2016-17 new Batch onwards and as well as for Students who have taken admission in 2015-16 and will be entering into their 2nd year in 2016-17.

✓ **Resolution No. 3.6(k):** It was resolved to accept log book [Annexure – XX of BOM-45/2016] for 1st, 2nd & 3rd year of M.Sc. Medical Pharmacology to be implemented from 2016-17 new Batch onwards and as well as for Students who have taken admission in 2015-16 and will be entering into their 2nd year in 2016-17.

(P.T.O)

Resolution passed in BOM – 48/2017, dated 24/01/2017

Item No. 5.11: BOS (Biomedical Sciences) dated 16.09.2016

- m) To review the structure of Theory Exam Pattern of B.Sc. (Paramedical) Courses: It was decided to change the pattern of Theory exam pattern with more options in SAQ (10 marks) and LAQ's (20 marks) for 2nd and 3rd year. For first year question paper pattern will remain same.

Resolution No. 5.11(m): Resolved to approve the change in the pattern of Theory exam of B.Sc. (Paramedical) Courses for 2nd and 3rd year [as per Annexure-IX of BOM-48/2017] while the first year question paper pattern will remain same, to be effective for batch entered in 2nd year/3rd year in Academic Year 2016-17 onwards.



MAHATMA GANDHI MISSION
MEDICAL COLLEGE & HOSPITAL
Ph-27437668, 27437990, Fax 911-22-7420320

MGMMCH/Ophthal Dept./2016/16

Date: 16.09.2016

To,
The Director,
MGM School of Bio Medical Sciences,
Kamothe, Navi Mumbai

Sub: Changing format of B.Sc Optometry Question paper.

Respected Sir

We Faculty of Ophthalmology Department of MGM College Kamothe along with external examiner from by D.Y. Patil Medical college Nerul wish to bring Change in format of Question paper since the existing one is not appropriate.

We all (Department of Ophthalmology as well as other Depts)who conduct paramedical courses feel that the question paper is very lengthy hence it is difficult to set question paper and check the Answer sheet.

We sincerely request you to effect the changes.

Thanking you.

Professor & HOD
Department of Ophthalmology

Dr. Varshnav Grose

FOR

BEAS, Chhatrapati

16/9/16

16/9/16

16/9/16

(FINAL UNIVERSITY EXAMINATION- EXISTING THEORY EXAM PATTERN)

Question type	No. of questions	Questions to be answered	Question X marks	Total marks
Long essays	3	2	2x10	20 marks
Short essays	8	6	6x 5	30 marks
Short answers	12	10	10x 3	30 marks
				Total= 80 marks



MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI
SECOND B.Sc. (Optometry Technology) UNIVERSITY EXAMINATION JULY-2015
Third Year

MGMH/KAM/OPH/2015

Subject : Community Eye Health & Eye Banking

Date :

Total marks :80

INSTRUCTION :

1. Attempt all sections
2. Maximum Marks are indicated in the right
3. Illustrate the answer with suitable diagram wherever necessary
4. Please surrender your SWITCHED OFF cell phones at entry point into the examination Hall
5. Mobile phones , pagers ,bluetooth or any other such communication devices are not allowed in the examination premises and in the adjacent area

III Year

Q.1 Long Answer Question (Answer any Two)

2x10= 20marks

1. Vision 2020:Right to sight
2. National programme for control of blindness-I
3. Rehabilitation of visually handicapped

Q.2 Short Essay Question (Answer any Six)

6x5=30marks

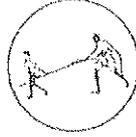
1. Screening procedures in ophthalmology
2. School eye screening programme
3. Organisation of eye camp
4. Primary eye care
5. Enucleation
6. Preservation of donor cornea
7. Methods of publicity of eye donation
8. Contra-indication of eye donation

Q.3 Short Answer Question (Answer any 10)

10x3=30marks

1. Concepts of community ophthal
2. Visual acuity testing in school children
3. Pre- operative instructions of cataract surgery
4. Post -operative instructions of cataract surgery
5. How to donate your eyes?
6. Public education regarding common eye diseases
7. Components of an eye back
8. Sac syringing
9. Methods to screen IOP
10. Presbyopic correction in an eye camp
11. Vitamin A prophylaxis:Doses & schedule
12. Blanket therapy in trachoma.

(COPY OF NEW PROPOSED QUESTION PAPER FORMAT)



MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI
SECOND B.Sc. (Optometry Technology) UNIVERSITY EXAMINATION JULY-2016
Third Year

MGMH/KAM/OPH/2016

Subject: Community Eye Health & Eye Banking

Date :

Total marks :80

INSTRUCTION :

1. Attempt all sections
2. Maximum Marks are indicated in the right
3. Illustrate the answer with suitable diagram wherever necessary
4. Please surrender your SWITCHED OFF cell phones at entry point into the examination Hall
5. Mobile phones , pagers ,bluetooth or any other such communication devices are not allowed in the examination premises and in the adjacent area

III Year

2x15=30 marks

Q.1 Long Answer Question (Answer any Two)

- 1) Methods of Eye Preservation.
- 2) Rehabilitation of visually handicapped
- 3) National programme for control of blindness-I

Q.2 Short Essay Question (Answer any five)

5x10=50marks

- 1) Vision 2020:Right to sight
- 2) Eye Banking
- 3) Organisation of eye camp
- 4) Primary eye care
- 5) Evisceration
- 6) Preoperative workup for corneal transplant.
- 7) Methods of publicity of eye donation

Resolution No. 1.3.14.3 of BOM-51/2017: Resolved to approve the List of Textbooks for B.Sc. Paramedical Courses / M.Sc. Molecular Biology. [Annexure XXXII]

Medical Laboratory Technology

Second Year & Third Year

Biochemistry	Essentials of Biochemistry	Pankaja Naik
	Biochemistry for Physiotherapy & Allied Health Sciences Students	Beena shetty, Nandini M. Vinitha Ramanath Pai
	Practices of Biochemistry	Varley
Pathology	Clinical pathology Hematology & Blood Banking for DMLT Students	Nanda Maheshwari
Microbiology		
Third Year		
Third Year	Medical Laboratory technology	Mukherjee

Investigative Orthoptics	Essentials of Ophthalmology	Pradeep Sharma
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Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1st formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1st formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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