

Assessment Methods for Learning Outcome

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Under Graduate

Phase I

ASSESSMENT METHODS OF LEARNING OUTCOME – I MBBS (ANATOMY)

Sr.no	Learning outcome Knowledge	Assessment
1.	Describe the anatomy of female reproductive system, correlate the gross, microscopic and embryological aspects and their clinical significance	<ul style="list-style-type: none"> • Draw & label test • Formative assessment on Google Classroom –scenario based MCQ • Part completion test theory & practical's • MCQ, BAQ, SAQ & LAQ • Summative assessment
2.	Describe and discuss the structural & functional correlation of Microscopic anatomy of gastrointestinal tract.	<ul style="list-style-type: none"> • Draw & label test • Formative assessment on Google Classroom scenario based MCQ • Part completion test • Weekly Spots • MCQ, BAQ & SAQ • Summative assessment
3.	Describe the brachial plexus Formation, its branches and applied aspect. Describe the root value course & relations of nerves of upper limb and discuss the anatomical basis of nerve injuries.	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • Part completion test - –MCQ, BAQ, SAQ & LAQ • OSPE Summative assessment

4.	Describe the Morphology, Lymphatic drainage, Blood supply and applied anatomy of Mammary gland. Discuss the microscopic structure of lactating and nonlactating mammary gland.	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • Short answer question test • Draw & label test • Part completion test - –MCQ, BAQ, SAQ & LAQ • OSPE • Summative assessment
5.	Describe the parts, attachments, ossification & applied aspect of bones of the Superior Extremity.	<ul style="list-style-type: none"> • Osteology test • Part completion osteology viva • OSPE • Summative assessment

Sr.no	Learning outcome Knowledge	Assessment
6.	Describe the anatomy of Pleura, correlate the gross and embryological aspects and their clinical significance	<ul style="list-style-type: none"> • Draw & label test • Formative assessment on Google Classroom • MCQ, BAQ, SAQ • OSPE • Summative assessment
7.	Describe and discuss the Veins of the inferior extremity . Discuss the varicose veins and its anatomical basis	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • BAQ , SAQ & LAQ • OSPE • Summative assessment
8.	Describe & discuss the Anterior abdominal wall ,its layers , modifications & surgical anatomy. Describe the Inguinal canal and discuss the anatomical basis of inguinal hernia.	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • Part completion test • OSPE • Summative assessment

9.	Describe & discuss the development of Pharyngeal arches & face. Discuss the embryological basis of developmental anomalies of face & pharyngeal arches.	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • Short answer question test • Draw & label test • MCQ, SAQ & BAQ
10.	Describe & Discuss the gross features, Blood supply & embryology of heart. Discuss the anatomical basis of cardiovascular disease.	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • Short answer question test • Draw & label test • MCQ, SAQ & BAQ

Sr.no	Learning outcome Skill	Assessment
1.	Describe the living anatomy of superior extremity & its clinical correlations.	<ul style="list-style-type: none"> • Viva • OSPE
2.	Describe and discuss specimens of Head Neck & Face region – Larynx, Pharynx, Tongue, Triangles of neck, Sagittal sections of head & neck	<ul style="list-style-type: none"> • Formative assessment on Google Classroom • BAQ, SAQ & LAQ • OSPE • Viva

ASSESSMENT METHODS OF LEARNING OUTCOME – I MBBS (PHYSIOLOGY)

Sr.No	Learning Outcome	Assessment Methods
1	Describe the role various organs and organ systems in normal human body for maintaining homeostasis	Formative and Summative assessment. MCQ, BAQ, SAQ, LAQ & VIVA
2	Describe the pathophysiology of various diseases which occur due to failure of homeostatic mechanisms.	Formative and Summative assessment. MCQ, BAQ, SAQ, LAQ & VIVA
3	Explain the physiological basis of management of disease conditions which occurs due to failure of homeostatic mechanisms	Formative and Summative assessment. MCQ, BAQ, SAQ, LAQ & VIVA
4	Perform the various basic haematological investigations and interpret the normal findings	Practical examination, OSPE & VIVA
5	Perform and interpret the findings of clinical examination on normal human volunteers	Practical examination, OSPE & VIVA
6	Perform and interpret the findings of various investigations like, ECG, Spirometry, Stethography, Ergography etc. on normal human volunteers.	Practical examination, OSPE & VIVA
7	Interpret the findings of experiments on amphibian heart and nerve muscle using graphs and charts	OSPE & VIVA
8	Perform the Basic Life Support effectively on manikin	Practical examination, OSPE & VIVA

ASSESSMENT METHODS OF LEARNING OUTCOME- I MBBS (BIOCHEMISTRY)

Learning Outcome Knowledge	Assessment
1. Explain the Biochemical basis of life	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ,BAQ,SAQ & LAQ
2. Describe the overview of different metabolism	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ,BAQ,SAQ & LAQ • Viva • Log book
3. Nutrition – Clinical significance	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ,BAQ,SAQ & LAQ • Viva • Practical examination • OSPE
4. Understanding of molecular biology	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ,BAQ,SAQ & LAQ
5. Advance biochemistry and their role in diagnosis and management	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ,BAQ,SAQ & LAQ • OSPE
Skills	
1. Biochemical lab investigation	<ul style="list-style-type: none"> • Practical examination • Log book
2. Collection & storage of different biological fluids. Exposure to biomedical waste & quality control in labs	<ul style="list-style-type: none"> • Pre and post MCQ test • OSPE
3. Qualitative and quantitative experiments	<ul style="list-style-type: none"> • Practical examination and viva

4. Perform simple bedside tests on blood, urine and other biological fluid samples.	<ul style="list-style-type: none">• Practical examination• Log book
5. Exposure to various instruments CCL	<ul style="list-style-type: none">• Formative & Summative examination, comprising of MCQ,BAQ,SAQ & LAQ• Viva

Phase II

ASSESSMENT METHODS OF LEARNING OUTCOME- II MBBS (PHARMACOLOGY)

Learning Outcome Knowledge	Assessment
Describe Absorption, distribution, Metabolism, Excretion of drugs	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Describe principles of Pharmacovigilance & ADR reporting systems	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva • Practical examination • OSPE
Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
<p>4. Describe the mechanisms of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like:</p> <ol style="list-style-type: none"> 1. Drugs used in anemias 2. Colony stimulating factors 	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, amebiasis and intestinal helminthiasis	Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Skills	
Demonstrate understanding of the use of various dosage forms (oral/local/ parenteral: solid/liquid)	<ul style="list-style-type: none"> • Skill assessment

Prepare oral rehydration solution from ORS packet and explain its use.	<ul style="list-style-type: none"> • Skill assessment
Perform a critical evaluation of the drug promotional	<ul style="list-style-type: none"> • OSPE

Literature	
Communicate with the patient with empathy and ethics on all aspects of drug use	<ul style="list-style-type: none"> • Skill station
Administer drugs through various routes in a simulated environment using mannequins	<ul style="list-style-type: none"> • Skill assessment

ASSESSMENT METHODS OF LEARNING OUTCOME- II MBBS (FMT)

Sr.No	Learning Outcome Knowledge	Assessment
1	Comprehend the Criminal Administration Justice System & Medical Jurisprudence.	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ
2	Know Medico Legal Duties of a Registered Medical Practitioner.	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ
3	Be competent to examine and prepare report or certificate in medico legal cases/situations inaccordance with the law of Land.	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ
4	Acquaint with procedure of medico legal postmortem examination and interpret findings and results of other relevant investigations to logically conclude the cause, and relevant opinion	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ
5	Inculcate principles of Bioethics medical ethics, etiquette, duties, rights, medical negligence and legal responsibilities of RMP, towards patient, profession, society, state and humanity.	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ
6	To be conversant with provisions of MTP Act, 1971with latest Amendments 2021,The POCSO Act, 2012, Amended Criminal ProcedureAct with respect to Offences perpetrated on young girls, women with reference to harassment at work place.	Formative AssessmentAnd Summative Assessment MCQ, SAQ, LAQ

Skills:		
1	Grasp minutely facts and arrive at logical inferences so as to assist Investigating Officers.	Practical examination Assessment of skills like Age assessment, Injury Report, Weapon report
2	Diagnose and treat common emergencies in poisoning and manage chronic toxicity.	Practical examination Eg: Alcohol Intoxication case
3	Medico legal autopsy examination	Viva , SAQ, LAQ
4	Observe the principles of Bio Ethics & Medical Ethics	Formative Assessment And Summative Assessment MCQ, SAQ, LAQ
5	Proper collection , preservation , labeling and sealing of trace elements ,specimens collected at PM examination or examination of victim or accused	Formative Assessment And Summative Assessment MCQ, SAQ, LAQ Viva

ASSESSMENT METHODS OF LEARNING OUTCOME- II MBBS (MICROBIOLOGY)

Learning Outcome Knowledge	Assessment
State the etiology, pathogenesis and methods of laboratory diagnosis and apply that knowledge in the diagnosis, treatment, prevention and control of communicable diseases caused by microorganisms.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQs, BAQs, SAQs & LAQs Viva - QSPE
Understand commensal, opportunistic and pathogenic organisms of human body and describe host parasite relationship.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ • Viva- QSPE
Know and describe the pathogenesis of diseases caused by microorganisms.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising BAQ, SAQ & LAQ
State the sources and modes of transmission of pathogenic and opportunistic microorganisms including knowledge of insect vectors & their role in transmission of infectious diseases.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising MCQ, BAQ, SAQ & LAQ
choose appropriate laboratory investigations required for clinical diagnosis	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ • Viva • Choose appropriate culture media/metrical for cultivation of micro organism

Skills	
Plan and interpret laboratory investigations for diagnosis of infectious diseases and correlate the clinical manifestations with the etiological agent.	<ul style="list-style-type: none"> • Gram Staining • ZN staining • OSPE, Viva
Identify common infectious agents with the help of laboratory procedure, acquire knowledge of antimicrobial agents, use of antimicrobial sensitivity tests to select suitable antimicrobial agents for treatment.	<ul style="list-style-type: none"> • Special staining • Culture methods • Biochemical reactions • ABST- Viva
Perform simple laboratory tests, which help to arrive at rapid diagnosis.	<ul style="list-style-type: none"> • Gram stain & ZN stain stool exam, KOH munt serological rapid tests • Practical examination and viva
Be conversant with proper methods of collection, storage & transport of clinical material for microbiological investigations.	<p>MCQ Viva</p>
Understand the principles of immunology and its application in the diagnosis and prevention of infectious diseases including immunization schedule, acquire knowledge of the scope of immunotherapy and different vaccines available for the prevention of communicable diseases.	<ul style="list-style-type: none"> • SAQS , MCQs • Viva
Understand methods of disinfection and sterilization and their application to control and prevent hospital and community acquired infections including universal biosafety precautions and waste disposal	<ul style="list-style-type: none"> • SAQS , MCQs • Viva •
Recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.	<ul style="list-style-type: none"> • Viva

<p>8. The student should be well equipped with the knowledge of prevalent communicable diseases of national importance and of the newer emerging pathogens</p>	<ul style="list-style-type: none">• Viva
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**ASSESSMENT METHODS OF LEARNING OUTCOME- II MBBS
(PATHOLOGY)**

Learning Outcome	Assessment
Knowledge	
Explain the Patho physiological processes which governs the maintenance of homeostasis, mechanism of their disturbances and the morphological and clinical manifestation associated with it.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ
Describe the mechanisms and patterns of tissue response to injury to appreciate the Pathophysiology of disease processes and their clinical manifestations	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ • Viva
Correlate the gross and microscopic alterations of different organ systems in common diseases to the extent needed to understand disease processes and their clinical significance..	<ul style="list-style-type: none"> • Formative & Summative assessment comprising of MCQ, BAQ, SAQ & LAQ • Viva • Practical examination • OSPE
Develop an understanding of neoplastic change in the body in order to appreciate need for early diagnosis and further management of neoplasia	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ
Understand mechanisms of common haematological disorders and develop a logical approach in their diagnosis and management.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ • OSPE • Hemogram interpretation • Clinical tray viva
Skills	
Demonstrate & perform various haematological & clinical pathological diagnostic laboratory tests	<ul style="list-style-type: none"> • Practical examination

Interpret diagnostic laboratory tests and correlate with clinical and morphological features of diseases	<ul style="list-style-type: none"> • Pre and post MCQ test • OSPE
Perform simple bedside tests on blood, urine and other biological fluid samples.	<ul style="list-style-type: none"> • Practical examination and viva
Recognize morbid anatomical and histopathological changes for the diagnosis of common disorder.	<ul style="list-style-type: none"> • Gross specimen viva • Histopathology slide diagnosis and viva
Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with pre-clinical departments.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ • Viva

Phase III Minor

ASSESSMENT METHODS OF LEARNING OUTCOME III MBBS (COMMUNITY MEDICINE)

Learning Outcome	Assessment
Knowledge	
Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	Written/ Viva voce
Describe poverty and Social security measures and its relationship to health and disease	Written/ Viva voce
Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting	Written/ Viva voce
Describe the common sources of various nutrients and special nutritional requirements according to age, sex activity, physiological conditions	Written/ Viva voce
Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non-communicable diseases	Written/ Viva voce
Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for non- Communicable diseases (diabetes, Hypertension, stroke, Obesity and cancer etc.)	Written/ Viva voce
Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (MNCI) and other existing	Written/ Viva voce

Programs	
Enumerate and describe specific occupational health hazards, their risk factors and preventivemeasures	Written/ Viva voce
Skill	
Demonstrate Infection controlpractices and use ofpersonal protective Equipment (PPE)	Skill assessment
Elicit document and present a medical history that helps delineatethe etiology of thesediseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel	Skill assessment
Visit a Child Developmentary unitand observe its functioning	Log book Entry
Describe and discuss the principlesand demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data	Written/ Viva voce/ Skill assessment

**ASSESSMENT METHODS OF LEARNING OUTCOME- III/I MBBS
(Ophthalmology)**

Learning Outcome	Assessment
Knowledge	
1. Explain various methods of recording visual acuity and assessment of central vision with pin hole	<ul style="list-style-type: none"> • OSCE • OSPE
2. Describe the procedure of estimation of Intra Ocular pressure by digital tonometry	<ul style="list-style-type: none"> • OSCE • OSPE
3. How to instill eye medication	<ul style="list-style-type: none"> • OSPE
4. Understanding various types of color blindness and assessment of color vision on Ichihara's chart	<ul style="list-style-type: none"> • OSCE • OSPE
5. Assessing anterior chamber depth on torch light examination in order to diagnose angle closure glaucoma	<ul style="list-style-type: none"> • OSPE • OSCE
Skills	
1. Measurement of IOP by digital tonometry	<ul style="list-style-type: none"> • Practical examination
2. Sac Syringing	<ul style="list-style-type: none"> • Practical Examination
3. Confrontation field testing and its importance	<ul style="list-style-type: none"> • Practical Examination
4. Pupillary reaction elicitation and clinical correlation	<ul style="list-style-type: none"> • Practical Examination
5. Ocular motility testing in all positions of gaze	<ul style="list-style-type: none"> • Practical Examination

ASSESSMENT METHODS OF LEARNING OUTCOME- III MBBS (E.N.T)

Learning Outcome	Assessment
Knowledge	
1. Elicit document and present a correct history, demonstrate, and describe the clinical features, choose the correct investigations, and describe the principles of management of diseases of the external Ear	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce • DOAP session,
2. Elicit document and present a correct history, demonstrate, and describe the clinical features, choose the correct investigations and describe the principles of management of ASOM	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce
3. Describe the clinical features, investigations, and principles of management of Meniere's Disease	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce
4. Describe the clinical features, investigations, and principles of management of trauma to the face & neck	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce
5. Observe and describe the indications for and steps involved in a tonsillectomy /adenoidectomy	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce
Skills	
1. Enumerate the indications and interpret the results of an audiogram	<ul style="list-style-type: none"> • Practical examination • Skill assessment
2. Demonstrate the correct technique for syringing wax from the ear in a simulated environment	<ul style="list-style-type: none"> • Practical examination • Skill assessment
3. Observe and describe the indications for and steps involved in the performance of diagnostic nasal Endoscopy	<ul style="list-style-type: none"> • Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ • Viva voce

<p>4. Observe and describe the indications for and steps involved in the performance of Otomicroscopic examination in a simulated environment</p>	<ul style="list-style-type: none">• Formative & Summative examination comprising of MCQ,BAQ,SAQ & LAQ• Viva voce
<p>5. Demonstrate the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum</p>	<ul style="list-style-type: none">• Skill assessment/ OSCE

Phase III Major

ASSESSMENT METHODS OF LEARNING OUTCOME- III / I MBBS (Gen. Medicine)

Learning Outcome	Assessment
Knowledge	
1. Explain pathophysiology of acute coronary syndrome and the management of acute coronary syndrome.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, SAQ & LAQ OSCE
2. Explain pathophysiology of the movement disorders and the management of Parkinson's disease.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, SAQ & LAQ OSCE • Viva
Approach to case of chronic liver disease with ascites. Diagnostic and therapeutic interventions..	<ul style="list-style-type: none"> • Formative & Summative assessment comprising of MCQ, BAQ, SAQ & LAQ • Clinics • Viva • OSCE
Diabetes Mellitus management and complications. Use of various insulin combinations	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, SAQ & LAQ OSCE
5. ECG interpretation	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, SAQ & LAQ • Viva
Skills	
1. Pleural tapping	<ul style="list-style-type: none"> • Clinics
2. Lumbar puncture	<ul style="list-style-type: none"> • Clinics in casualty and ICU
3. Perform simple	<ul style="list-style-type: none"> • Clinics

bedside tests on blood, urine and other biological fluid samples.	
4. Ascitic tapping.	<ul style="list-style-type: none">• Clinics

ASSESSMENT METHODS OF LEARNING OUTCOME- UG(MBBS - PAEDIATRICS)

Learning outcome	Assessment
Cognitive domain; Knowledge	
1. Explain the components of the Universal immunization Program and Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQs, BAQs, SAQs & LAQs. • Viva Voce.
2. Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in children.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQs & LAQs.
3. Discuss the epidemiology, clinical features, types and complications of Tuberculosis in Children and Adolescents	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQs, SAQs & LAQs. Viva Voce. OSCE
4. Describe the etio- pathogenesis, WHO classification, clinical features, complications and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM)	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ. • Viva and OSCE
5. Discuss the etio pathogenesis, classification, clinical presentation and management of Diarrheal diseases in children	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ • Viva • OSCE

SKILLS	
Examine Normal Neonate physical and Neuromuscular criteria, and demonstrate Neonatal Reflexes.	<ul style="list-style-type: none"> • Bedside Practical examination. • OSCE
Examine a Case of PEM, and assess signs of Kwashiorkor and Marasmus.	<ul style="list-style-type: none"> • Bedside Practical examination • OSCE
Describe various routes of administration of Vaccines and Perform IM Injection .	<ul style="list-style-type: none"> • Practical examination and viva.
Describe methods of Neonatal Resuscitation, and Perform AmbuBag & mask Ventilation on Mannequin.	<ul style="list-style-type: none"> • Viva and Practical Examination.
Discuss Causes of Hepatosplenomegaly, and demonstrate methods of Palpation of Liver, and Spleen.	<ul style="list-style-type: none"> • SAQs & LAQs. • Viva

**ASSESSMENT METHODS OF LEARNING OUTCOME- II MBBS
(SURGERY)**

Learning Outcome	Assessment
Knowledge	
1. Explain the Patho physiological processes which governs the maintenance of homeostasis, mechanism of their disturbances and the morphological and clinical manifestation associated with these disturbances which present as common surgical problems in outpatients.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ
2. Describe the mechanisms and patterns of tissue response to injury to appreciate the Pathophysiology of disease processes and their various clinical manifestations in patients attending surgical opd as well as indoor admitted patients and plan their management.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ • Viva
3. Correlate the clinical symptoms and signs due to alterations of different organ systems in common diseases to the extent needed to understand disease processes and their clinical significance, so as to effectively design a plan of management for such commonly presenting case scenarios.	<ul style="list-style-type: none"> • Formative & Summative assessment comprising of MCQ, BAQ, SAQ & LAQ • Viva • Practical examination • OSPE • OSCE
4. Develop an understanding of the clinical presentation of neoplastic change in the body in order to appreciate need for early diagnosis and further management of common neoplasia cases.	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ

<p>5. Understand mechanisms of common surgical disorders and develop a logical approach in their diagnosis and management.</p>	<ul style="list-style-type: none">• Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ• OSPE• OSCE• Clinical viva
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Skills	
<p>1. Demonstrate & perform various clinical assessments of organ systems in common surgical patients.</p>	<ul style="list-style-type: none"> • Practical examination • OSCE • OSPE
<p>2. Elicit a complete patient history develop the ability to correlate with clinical and morphological features of common surgical diseases</p>	<ul style="list-style-type: none"> • Pre and post MCQ test • OSPE
<p>3. Perform simple bedside tests on in ward patients to elicit specific signs of common surgical diseases.</p>	<ul style="list-style-type: none"> • Practical examination and viva
<p>4. Recognize morbid anatomical and radiological changes for the diagnosis of common surgical disorders</p>	<ul style="list-style-type: none"> • Gross specimen viva • Radiological diagnosis and viva
<p>5. Understand clinical and physical disturbances that occur as a result of disease in collaboration with pre-clinical departments.</p>	<ul style="list-style-type: none"> • Formative & Summative assessment, comprising of MCQ, BAQ, SAQ & LAQ • Viva

**ASSESSMENT METHODS OF LEARNING OUTCOME (MBBS
OBSTETRICS&GYNAECOLOGY)**

LEARNING OUTCOME		ASSESSMENT
KNOWLEDGE	SLO	
Anatomy of the female reproductive tract,	Describe the anatomy of female reproductive tract Describe relationship of pelvic organs to one another Describe the blood supply, nerve supply, and lymphatic drainage of female genital organs Describe the development of female reproductive tract Applied anatomy	LAQ, SAQ, MCQs
Physiology of menstruation	Describe physiology of menstruation and its neuroendocrine control through HPO axis.	LAQ, SAQ, MCQs
Physiology of gametogenesis, Ovulation, conception, implantation, & reproductive endocrinology	Describe spermatogenesis, oogenesis, fertilization, implantation and early decidual changes	LAQ, SAQ, MCQs
Early development of embryo and fetus, development of Placenta, amniotic fluid, cord		LAQ, SAQ, MCQs

Embryology and developmental defects of female genital tract	List investigation for diagnosis of Mullerian duct anomalies Clinical significance of Mullerian duct anomalies	LAQ,SAQ,MCQs
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Diagnosis of pregnancy	Describe clinical features of pregnancy correctly Discuss d/d of suprapubic lump in women Describe chemical tests of pregnancy
SKILL	
Antenatal Care, detailed history, and Obstetric examination	Define antenatal care Enumerate aims and objectives of ANC care Categorise a patient into high risk/low risk according to history

Psychomotor Domain	
1. Able to perform routine examination in the opd and IPD. Conduct normal deliveries Assist in Major and minor Obgy procedures confidently and correctly	<ul style="list-style-type: none"> • Practical and viva • Day to day assessment

ASSESSMENT METHODS OF LEARNING OUTCOME- III/I MBBS (Ophthalmology)

Learning Outcome	Assessment
Knowledge	
1. Explain various methods of recording visual acuity and assessment of central vision with pin hole	<ul style="list-style-type: none"> • OSCE • OSPE
2. Describe the procedure of estimation of Intra Ocular pressure by digital tonometry	<ul style="list-style-type: none"> • OSCE • OSPE
3. How to instill eye medication	<ul style="list-style-type: none"> • OSPE
4. Understanding various types of color blindness and assessment of color vision on Ichihara's chart	<ul style="list-style-type: none"> • OSCE • OSPE
5. Assessing anterior chamber depth on torch light examination in order to diagnose angle closure glaucoma	<ul style="list-style-type: none"> • OSPE • OSCE
Skills	
1. Measurement of IOP by digital tonometry	<ul style="list-style-type: none"> • Practical examination
2. Sac Syringing	<ul style="list-style-type: none"> • Practical Examination
3. Confrontation field testing and its importance	<ul style="list-style-type: none"> • Practical Examination
4. Pupillary reaction elicitation and clinical correlation	<ul style="list-style-type: none"> • Practical Examination
5. Ocular motility testing in all positions of gaze	<ul style="list-style-type: none"> • Practical Examination

PG

ASSESSMENT METHODS OF LEARNING OUTCOME- Post Graduation –MS (Ophthalmology)

Learning Outcome	Assessment
Knowledge	
1. Understanding the correct method of performing indirect ophthalmoscopy	<ul style="list-style-type: none"> • OSCE • OSPE
2. Describe the importance and method of eye irrigation in cases of chemical injury	<ul style="list-style-type: none"> • OSPE • OSCE
3. Understanding of various layers of retina on OCT and interpretation of various retinal diseases	<ul style="list-style-type: none"> • OSPE
4. Interpretation of visual field defects in Glaucoma in perimetry and its clinical correlation	<ul style="list-style-type: none"> • OSCE • OSPE
5. Assist/observe therapeutic procedure such as subconjunctival injection in post cataract surgery patient	<ul style="list-style-type: none"> • OSPE
Skills	
1. Performing corneo scleral tunnel in goats eye	<ul style="list-style-type: none"> • Practical examination
2. Fluorescein staining in cases of corneal ulcer	<ul style="list-style-type: none"> • Practical examination and viva
3. Demonstrate correct procedure in step wise fashion to remove corneal foreign body	<ul style="list-style-type: none"> • Practical Examination

4. Procedure of epilation in cases of trichiasis	• Practical Examination
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5. Correct method of performing B-scan	<ul style="list-style-type: none">• Practical Examination

ASSESSMENT METHODS OF LEARNING OUTCOME- MD (BIOCHEMISTRY)

Learning Outcome	Assessment
Knowledge	
1. Explain the Biochemical basis of life	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
2. Describe the overview of different metabolism	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ • Viva
3. Nutrition – Clinical significance	<ul style="list-style-type: none"> • Formative & Summative examination comprising of SAQ & LAQ • Viva • Practical examination
4. Understanding of molecular biology	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
5. Advance biochemistry and their role in diagnosis and management	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
Skills	
1. Demonstrate & perform various biochemical diagnostic laboratory tests	<ul style="list-style-type: none"> • Practical examination • Log book
2. Interpret molecular diagnostic technique	<ul style="list-style-type: none"> • Viva • Microteaching

<p>3. Perform special tests on blood, urine and other biological fluid samples.</p>	<ul style="list-style-type: none"> • Practical examination and viva
<p>4. Collection & storage of different biological fluids. Exposure to biomedical waste & quality control in labs</p>	<ul style="list-style-type: none"> • Viva • Log book
<p>5. Exposure to various instruments CCL. Exposure to CCL procedures & hand on training with various equipments.</p>	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ • Viva
<p>6. Analyze, discuss research work</p>	<ul style="list-style-type: none"> • Thesis • Oral presentation in conference • Log book

ASSESSMENT METHODS OF LEARNING OUTCOME- PG(MD Medicine)

Learning outcome	Assessment
Cognitive domain	
1. Detailed history taking with relevant examination and management plan	<ul style="list-style-type: none"> • Viva voce
2. Clinic pathologic and radiological correlation and treatment plan.	<ul style="list-style-type: none"> • Clinical chart interpretation • Viva • Log book
3. Analysing complicated cases and cases having multiple organ involvement . Management including medical as well as surgical treatment	<ul style="list-style-type: none"> • Clinical case examination • Viva voce • Log book
4. Cases requiring the super specialty in depth knowledge and complicated cases .	<ul style="list-style-type: none"> • Clinical case examination • Viva voce • Log book
5. Should be able to teach Medicine to undergraduates, nurses and paramedical staff	<ul style="list-style-type: none"> • Microteaching
6. Plan, execute, analyse and present research work.	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book
7. Make and record observations systematically and maintain accurate patient records. deductive reasoning and drawing inferences from clinical and lab data	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working

Affective Domain	
1. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Psychomotor Domain	
1. Able to do basic ward procedures like pleural and ascetic tapping liver and kidney biopsy.	<ul style="list-style-type: none"> • Skill assessment in ward procedures
2. Able to do ICU procedures like intubation and central line insertion planning the critical care of the patients.	<ul style="list-style-type: none"> • Skill assessment in ICU procedures • Viva voce

ASSESSMENT METHODS OF LEARNING OUTCOME- PG (MD PATHOLOGY)

Learning outcome	Assessment
Cognitive domain	
1. Diagnose routine and complex clinical problems on the basis of histopathology (surgical pathology) and cytopathology specimens, blood and bone marrow examination and various tests of Laboratory Medicine (clinical pathology, clinical biochemistry) as well as Blood Banking (Transfusion Medicine).	<ul style="list-style-type: none"> • Interpretation of reports • Slide seminars-Hematology, histopathology, cytology
2. Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.	<ul style="list-style-type: none"> • Clinical chart interpretation • Viva • Log book
3. Advise on the appropriate specimens and tests necessary to arrive at a diagnosis in a problematic case.	<ul style="list-style-type: none"> • Clinical case examination
4. Correlate clinical and laboratory findings with pathology findings at autopsy, identify misrelations and the causes of death due to diseases (apart from purely metabolic causes)	<ul style="list-style-type: none"> • Practical examination of autopsy – case based • Log book
5. Should be able to teach Pathology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.	<ul style="list-style-type: none"> • Microteaching
6. Plan, execute, analyse and present research work.	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book

<p>7. Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time. Identify problems in the laboratory, offer solutions thereof and maintain a high order of quality control</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
<p>Affective Domain</p>	
<p>1. Develop communication skills toward reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day Working
<p>Psychomotor Domain</p>	
<p>1. Able to perform routine tests in a Pathology Laboratory including grossing of specimens, processing, cutting of paraffin and frozen sections, making smears, and staining.</p>	<ul style="list-style-type: none"> • Practical and viva on histotechniques • Day to day assessment of grossing of Specimens
<p>2. Able to collect specimens by routinely performing non-invasive out-patient procedures such as venipuncture, finger-prick, fine needle aspiration of superficial lumps and bone-</p>	<ul style="list-style-type: none"> • Formative assessment while doing procedure. • Viva

<p>marrow aspirates, and provide appropriate help to colleagues performing an invasive procedure such as a biopsy or an imaging guided biopsy</p>	
<p>3. Perform an autopsy, dissect various organ complexes and display the gross findings</p>	<ul style="list-style-type: none">• Practical examination• Viva
<p>4. Should be familiar with the function, handling and routine care of equipments in the laboratory.</p>	<ul style="list-style-type: none">• Formative assessment by observation in day to day working

ASSESSMENT METHODS OF LEARNING OUTCOME- PG (MD PHARMACOLOGY)

Learning outcome	Assessment
Cognitive domain	
<ul style="list-style-type: none"> • Explain pharmacodynamics and pharmacokinetics of drugs 	<ul style="list-style-type: none"> • Seminars
<ul style="list-style-type: none"> • Acquire knowledge on pharmacovigilance 	<ul style="list-style-type: none"> • ADR reporting • Log book
<ul style="list-style-type: none"> • Apply and integrate knowledge of pathophysiology of diseases and its modulation by drugs 	<ul style="list-style-type: none"> • Seminars
<ul style="list-style-type: none"> • Acquire knowledge on essential medicines 	<ul style="list-style-type: none"> • Preparation of essential drug list for various diseases
<ul style="list-style-type: none"> • Acquire knowledge on rational use of drugs and prescription auditing. 	<ul style="list-style-type: none"> • Microteaching
<ul style="list-style-type: none"> • Plan, execute, analyse and present research work. 	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book
<ul style="list-style-type: none"> • Acquire knowledge on the legal and ethical issues involved in drug development and research. 	<ul style="list-style-type: none"> • Seminar
Affective Domain	
<ol style="list-style-type: none"> 1. Effectively explain to patients, the effects and side effects of drugs, including the need for medication adherence 	<ul style="list-style-type: none"> • Formative assessment
Psychomotor Domain	
<ol style="list-style-type: none"> 1. Able to predict efficacy and adverse effects associated with use of drugs, along with causality assessment 	<ul style="list-style-type: none"> • Practical and viva
<ol style="list-style-type: none"> 2. Perform major in vivo and invitro animal experiments 	<ul style="list-style-type: none"> • Formative assessment while doing procedure. • Viva

3. Demonstrate presentation skills at academic meetings, publications and writing research projects for funding agencies.	<ul style="list-style-type: none">• Research workpresentation
4. Demonstrate skills for prescription writing	<ul style="list-style-type: none">• Formative assessment

ASSESSMENT METHODS OF LEARNING OUTCOME- PG (DERMATOLOGY)

Learning Outcome	Assessment
<p>Knowledge</p> <p>1. Basic sciences- Explain structure functions & development of human skin including its microscopic & ultra-microscopic structures.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 1 yr. • Summative examination • MCQ, SAQ, LAQ
<p>2. Describe epidemiology, pathogenesis, clinical features, investigations & management of all infectious diseases i.e. bacterial, fungal, viral & parasitic infestations.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 1 yr. • Summative examination • MCQ, SAQ, LAQ • Viva • Spotters • Case presentations
<p>3. Describe epidemiology, pathogenesis, clinical features, investigations & management of inflammatory skin disorders like psoriasis, vesicobullous disorders.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 1 yr. • Summative examination • MCQ, SAQ, LAQ • Long & short case presentations during formative & summative exams
<p>4. Describe epidemiology, pathogenesis, clinical features, investigations & management of contact allergic & irritant dermatitis, photo dermatitis, occupational dermatitis & dermatitis due to other physical factors.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 2 years • Summative examination • MCQ, SAQ, LAQ • Spotters

<p>5. Describe epidemiology, pathogenesis, clinical features, investigations & management of precancerous & cancerous skin conditions like Squamous cell carcinoma, Basal cell carcinoma.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 2 years • Summative examination • MCQ, SAQ, LAQ • Spotters
<p>6. Describe various disorders associated with systemic diseases – renal cardiovascular, pulmonary system & rheumatology, vasculitis, collagen vascular disorders.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 2 years • Summative examination • MCQ, SAQ, LAQ • Spotters • Case presentation (Long case & short case)
<p>7. Describe epidemiology, pathogenesis, clinical features, investigations & management of Leprosy & Sexually transmitted diseases.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 1 yr. • Summative examination • MCQ, SAQ, LAQ • Viva • Spotters • Case presentations
<p>8. Describe various topical & systemic drug therapy including recent advances.</p>	<ul style="list-style-type: none"> • Formative examination conducted at the end of 1 yr. • Summative examination • MCQ, SAQ, LAQ • Table viva
<p>Skills</p>	

<p>1. To be able to perform & order various bed side tests like KOH staining, Giemsa staining & acid-faststaining, Woods lamp, culture, routinelab investigations & skin biopsy.</p>	<ul style="list-style-type: none"> • Practical examination
<p>2. To be able to order & interpret laboratory test to reach the diagnosis.</p>	<ul style="list-style-type: none"> • OSPE • Pre & post MCQtest
<p>3. To be able to take incisions, sutures, do peels, acne surgery,vitiligo surgery,radiofrequency,cryotherapy & electrocautery .</p>	<ul style="list-style-type: none"> • Practical examination • Table viva duringsummative exam • OSPE duringformative exam

ASSESSMENT METHODS OF LEARNING OUTCOME- PG (MS- OBSTETRICS&GYNAECOLOGY)

Learning outcome	Assessment
Cognitive domain	
1. Develop competence in the medical history taking and physical examination of women and incorporate ethical, social, and diversity perspectives to provide culturally competent health care	<ul style="list-style-type: none"> • Ward work • Log book
2. Demonstrate knowledge of preconception care including the impact of genetics, medical conditions and environmental factors on maternal health and fetal development.	<ul style="list-style-type: none"> • Clinical case interpretation • Viva • Log book
3. Explain the normal physiologic changes of pregnancy including interpretation of common diagnostic studies.	<ul style="list-style-type: none"> • Clinical case examination
4. Describe common problems in obstetrics	<ul style="list-style-type: none"> • Practical examination • Log book
5. Demonstrate knowledge of intrapartum care. 8. Demonstrate knowledge of postpartum care of the mother and newborn.	<ul style="list-style-type: none"> • Management of Labour room • IPD Patient
6. Describe menstrual cycle physiology, discuss puberty and menopause and explain normal and abnormal bleeding. Demonstrate knowledge of common benign gynaecological conditions.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
7. Plan, execute, analyse and present research work.	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book
8. Demonstrate knowledge of perioperative care and familiarity with gynecological procedures.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
9. Describe gynecological malignancies including risk factors, signs and symptoms and initial evaluation.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working

Affective Domain	
1. Develop communication skills to interact with patients, relatives, peers and paramedical staff.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Psychomotor Domain	
1. Able to perform routine examination in the opd and IPD. Conduct normal and complicated labour. Major and minor Obgy procedures confidently and correctly	<ul style="list-style-type: none"> • Practical and viva • Day to day assessment

ASSESSMENT METHODS OF LEARNING OUTCOME- POST GRADUATE(MD MICROBIOLOGY)

Learning outcome	Assessment
Cognitive domain/ Knowledge	
1) Diagnosis of infectious diseases and its application in the treatment prevention and control of communicable diseases caused by micro-organisms	<ul style="list-style-type: none"> • DOAP • Interpretation of reports • Slide seminars
2) Explain the principles of immunological phenomenon.	<ul style="list-style-type: none"> • Formative and Summative assessment
3) Practice Laboratory medicine for diagnosis of infectious diseases in hospital & community	<ul style="list-style-type: none"> • Clinical case examination
4) Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.	<ul style="list-style-type: none"> • Clinical chart interpretation • Viva • Log book
5) Advise on the appropriate specimens and tests necessary to arrive at a diagnosis in a problematic case.	<ul style="list-style-type: none"> • Clinical case examination
6) Prevention and control of communicable diseases in Community	<ul style="list-style-type: none"> • Log book • Viva
7) Principal of Prevention and control of health care associated infections and rational antibiotic policy	<ul style="list-style-type: none"> • Formative & summative assessment • Viva
8) Recent advances in medical Microbiology	<ul style="list-style-type: none"> • Formative & summative assessment
9) Should be able to teach Microbiology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.	<ul style="list-style-type: none"> • Microteaching

10) Plan, execute, analyse and present research work.	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book
11) Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time. Identify problems in the laboratory, offer solutions thereof and maintain a high order of quality control.	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Affective Domain	
1) Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.	<ul style="list-style-type: none"> • Formative assessment by observation in day today working
Psychomotor Domain	
1) Able to perform routine tests to arrive at the etiological diagnosis of infectious diseases causes by micro-organisms	<ul style="list-style-type: none"> • Day to day assessment of practical and viva • Log book
2) Operation of routine and Sophisticated instruments in laboratory	<ul style="list-style-type: none"> • Day to day formative assessment. • Practical and Viva

MIMER Medical College, Talegaon Dabhade

Department of Community Medicine

ASSESSMENT METHODS OF LEARNING OUTCOME- POST GRADUATE

(MD Community Medicine)

Learning outcome	Assessment
Cognitive domain	
1. Describe conceptual (and applied) understanding of public health community Medicineclinical and disease –oriented approach preventive approach &health promotion, disease control & promotion.	<ul style="list-style-type: none"> • Lecture, • Practicals, • seminars
2. Apply the principles of epidemiology, health research and Bio- statistics, application of qualitative researchmethods.	<ul style="list-style-type: none"> • Interpretationofreports • Research projects
3. Knowledge about communicable andnon-communicable diseases, their epidemiology.	<ul style="list-style-type: none"> • Clinical case examination
4. To describe the concept of environmental healthand its varioushealth issues.	<ul style="list-style-type: none"> • Entomology practical • Log book

<p>5. Should be able to teach Community Medicine to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.</p>	<ul style="list-style-type: none">• Microteaching
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<p>6. Plan, execute, analyse and present researchwork.</p>	<ul style="list-style-type: none"> • Thesis • Oral paper presentation in conferences • Log book
<p>7. Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time.</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Affective Domain	
<p>1. Develop communication skills to write reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Psychomotor Domain	
<p>Able to carry out research and report Writing</p>	<p>Research projects in urban and rural area</p>
<p>1. Able to perform routine tests in a Public Health Laboratory.</p>	<ul style="list-style-type: none"> • Practical and viva on chlorination, insecticides, nutrition specimens, Biomedical waste management

<p>2. Able to collect water specimens, Plan a diet ,Detect adulteration of foods and study of entomology specimens</p>	<ul style="list-style-type: none"> • Formative assessment while doing procedure. • Viva • Practical
<p>3. Perform data collection, carry out</p>	<ul style="list-style-type: none"> • Research projects
<p>4 Be familiar with</p>	<ul style="list-style-type: none"> • Formative
<p>epidemiology public health legislations, occupational health</p>	<p>assessment by observation in day to day working</p> <ul style="list-style-type: none"> • Seminar , Microteaching

ASSESSMENT METHODS OF **LEARNING OUTCOME - POST GRADUATE(MS
SURGERY)**

Learning outcome	Assessment
Cognitive domain	
1. Diagnose routine and complex clinical problems on the basis of presenting clinical symptoms and elicit various relevant clinical signs in OPD patients.	<ul style="list-style-type: none"> • Interpretation of reports • Interpretation of Clinical Signs • Arriving at a clinical diagnosis • Mapping a Management Plan
2. Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.	<ul style="list-style-type: none"> • Clinical chart interpretation • Viva • Log book
3. Advise on the appropriate laboratory and radiological tests necessary to arrive at a diagnosis in a problematic case.	<ul style="list-style-type: none"> • Clinical case examination • Practical exams
4. Correlate clinical and laboratory findings with pathology findings at autopsy, identify miscorrelations and the causes of death due to diseases (apart from purely metabolic causes)	<ul style="list-style-type: none"> • Practical examination • Surgical Pathology Specimen viva • Log book
5. Should be able to teach Surgery to undergraduates.	<ul style="list-style-type: none"> • Microteaching • Log book
6. Plan, execute, analyse and present research work.	<ul style="list-style-type: none"> • Thesis • Oral paper presentation

	<p>conferences</p> <ul style="list-style-type: none"> • Case Reports • Log book
<p>7. Make and record observations systematically and maintain accurate records of patients preoperatively with the intention of posting them for definitive surgical procedures</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Affective Domain	
<p>1. Develop communication skills toward reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working
Psychomotor Domain	
<p>1. Able to perform routine clinical tests in OPD and Ward setting.</p>	<ul style="list-style-type: none"> • Practical and viva • Day to day assessment of grossing of specimens
<p>2. Able to perform common interventions in emergent and elective patients.</p>	<ul style="list-style-type: none"> • Formative assessment while doing procedure. • Viva
<p>3. Able to perform common surgical procedures considered as the main stay of surgical technique in Minor OT independently and in Major OT under supervised guidance.</p>	<ul style="list-style-type: none"> • Practical examination • Viva
<p>4. Should be familiar with the function, handling and routine care of equipments in the ward, ICU and Operation Theatre.</p>	<ul style="list-style-type: none"> • Formative assessment by observation in day to day working

MIMER MEDICAL COLLEGE & DR. B. S. T. R. HSOPITAL, TALEGAONDABHADE

DEPARTMENT OF ORTHOPAEDICS

**ASSESSMENT METHODS OF LEARNING OUTCOME-POST GRADUATE(MS
ORTHOPAEDICS)**

Learning outcome	Assessment
1. Describe the principles of injury, its mechanism and mode, its clinical presentation, plan and interpret the appropriate investigations, and institute the management of musculoskeletally injured injured patient.	Written/vivavoce/ OSCE/MCQ
2. Identify and describe the surface anatomy and relationships within of the various bones, joints, ligaments, major arteries, veins and nerves of the musculoskeletal system of the spine, upper limb, lower limb and the pelvis, chest, abdomen and head & neck.	Written/vivavoce/ OSCE/MCQ
3. Define and describe pathophysiology of shock (circulatory failure)	Written/vivavoce/ OSCE/MCQ
4. Describe the principles and stages of bone and soft tissue healing.	Written/vivavoce/ OSCE/MCQ
5. Enumerate, classify and describe the various bony/ soft tissue injuries affecting the axial and appendicular skeletal system in adults and	Written/vivavoce/ OSCE/MCQ

children	
6. Describe the principles of internal and external fixation for stabilization of bone and joint injuries.	Written/viva voce/ OSCE/MC Q
7. Describe the mechanism of homeostasis, fibrinolysis and methods to control haemorrhage.	Written/viva voce/ OSCE/MC Q
8. Describe the pharmacokinetics and dynamics of drug metabolism and excretion of analgesics, anti inflammatory, antibiotics, disease modifying agents and chemotherapeutic agents.	Written/viva voce/ OSCE/MC Q
9. Describe the clinical presentation and plan and interpret investigations, institute management and prevention of the following diseases conditions a. Nutritional deficiency diseases affecting the bones and joints b. Deposition arthropathies c. Endocrine abnormalities of the musculoskeletal system d. Metabolic abnormalities of the musculoskeletal system e. Congenital anomalies of the musculoskeletal system f. Developmental skeletal disorder of the musculoskeletal system.	Written/vi va voce/ OSCE/MC Q
10. Describe the pathogenesis, clinical features plan and interpret investigations and institute management in	Written/vi va voce/ OSCE/MC Q

<p>adults and children in</p> <p>a) Tubercular infections of bone and joints (musculoskeletal system)</p> <p>b) Pyogenic infections of musculoskeletal system</p> <p>c) Mycotic infections of musculoskeletal system</p> <p>D) Autoimmune disorders of the musculoskeletal system</p> <p>e) Rheumatoid arthropathy, Ankylosing spondylitis, seronegative arthropathy</p> <p>f) Osteoarthritis and spondylosis</p>	
<p>11. Describe the pathogenesis, clinical presentation, plan and interpret investigations and institute appropriate treatment in the following conditions;</p> <p>a) Post polio residual paralysis</p> <p>b) Cerebral palsy</p> <p>c) Muscular dystrophies and myopathies</p> <p>d) Nerve injuries</p> <p>e) Entrapment neuropathies</p>	<p>Written/viva voce/ OSCE/MCQ</p>
<p>12. Identify the diagnosis and describe management of musculoskeletal manifestation of AIDS and HIV infection.</p>	<p>Written/viva voce/ OSCE/MCQ</p>
<p>13. Describe the aetiopathogenesis, identify, plan and interpret investigation and institute the management of osteonecrosis of bones</p>	<p>Written/viva voce/ OSCE/MCQ</p>
<p>14. Describe the aetiopathogenesis, clinical</p>	<p>Written/viva voce/ OSCE/MCQ</p>

<p>presentation, Identification, Plan investigation and institute treatment for oncologic problems of musculoskeletal system both benign and malignancies, primary and secondary</p>	
<p>15. Understand the basis , principles of biomaterials and orthopaedic metallurgy</p>	<p>Written/viva voce/OSCE/MCQ</p>
<p>16. Describe the principles of normal and abnormal gait and understand the biomedical principles of posture and replacementsurgeries.</p>	<p>Written/viva voce/OSCE/MCQ</p>
<p>1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion</p>	<p>Formative assessment by observation in by day to day working/ mini CEX</p>
<p>2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.</p>	<p>Formative assessment by observation in by day to day working/ mini CEX</p>

3. Develop communication skills to ward reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for	Formative assessment by observation in by day to day working/ mini CEX
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effective teaching	
1. Elicit a clinical history from a patient, do a physical examination, document in a case record, order appropriate investigations and make a clinical diagnosis	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
2. Apply all types of POP casts/ slabs, splints and tractions as per need	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
3. Perform split thickness skin Grafting	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
4. Take an informed consent for standard orthopaedic procedures	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
5. Perform closed/ open biopsies for lesions of bone, joints and soft tissues	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
6. Perform split thickness skin grafting and local flaps	OSCE with simulation based assessment, viva

	Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
7. Perform on bone models,internal fixation with k-wires, screws, plates. Dynamic hip/ condylar screws/ nailing.	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
8. Perform sequestrectomy and saucerisation	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
9. Perform Arthrotomy of joints like hip/ shoulder,ankle, elbow	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
10. Perform repair of openhand injuries including tendon repair	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
11. Perform arthodesis of small joints	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book

12. Perform diagnostic arthroscopy on models and their patients	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
13. Perform carpal tunnel/tarsal tunnel release	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
14. Apply Ilizarov external fixator	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
15. Perform soft tissue releases in contractures, tendon lengthening and correction of deformities	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
16. Perform amputations at different levels.	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting examination theory and practical / OSPE/ log book
17. Perform corrective surgeries for CTEV, DDH, perthes/ skeletal dysplasia.	OSCE with simulation based assessment, viva Formative assessment by observation in day to day working/ end of final posting

	examination theory and practical / OSPE/ log book
18. Assist in the surgical management of polytraumapatient	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
19. Assist in Arthroplasty surgeries of hip, knee, shoulder and the ankle.	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
20. Assist in spinal decompressions and spinalstabilizations	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
21. Assist in operative arthroscopy of variousjoints	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination atthe end of each semester
22. Assist/ perform Arthrodesis of major jointslike hip, knee, shoulder, elbow.	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination atthe end of each semester
23. Assist in corrective osteotomies.	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination atthe end of each semester
24. Assist in surgical operations on benign andmalignant musculoskeletal tumor including radical excision and custom prosthesis replacement.	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination atthe end of each semester
25. Assist in open reduction	Viva, formative assessment by

and internal fixations of complex fractures of Acetabular, pelvis, IPSI lateral floating knee/ elbow injuries, shoulder girdle and hand	observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
26. Assist in spinal deformity corrections	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
27. Independently perform closed/ open reduction and internal fixation with DCP, LCP intramedullary nailing, LRS	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
28. Assist in limb lengthening procedures	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
29. Assist in Revision surgeries	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
30. Provide pre and post OP care	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester
31. Perform all clinical skills related to the specialty	Viva, formative assessment by observation in day to day working/ MiniCEX/ log book/ Practical examination at the end of each semester

PGDMLT

ASSESSMENT METHODS OF LEARNING OUTCOME- DMLT (BIOCHEMISTRY)

Learning Outcome	Assessment
Knowledge	
1. Explain the basis and rational of biochemical tests	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
2. Understand the mechanism and overview of different metabolism	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ • Viva
3. Use of commonly use equipments/ techniques in biochemistry lab	<ul style="list-style-type: none"> • Formative & Summative examination comprising of SAQ & LAQ • Viva • Practical examination • OSPE
4. Understand principles of special techniques and develop a logical approach in their diagnosis and management.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
5. Exposure to CCL procedures & hand on training with various equipment.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ
Skills	
1. Perform various biochemical diagnostic laboratory tests	<ul style="list-style-type: none"> • Practical examination
2. Demonstrations and standardization of various estimations	<ul style="list-style-type: none"> • Viva
3. Perform simple bedside tests on blood, urine and other biological fluid samples.	<ul style="list-style-type: none"> • Practical examination and viva
4. Collection & storage of different biological fluids. Exposure to biomedical waste & quality control in labs disorder.	<ul style="list-style-type: none"> • Practical examination and viva
5. Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with pre-clinical departments.	<ul style="list-style-type: none"> • Formative & Summative examination, comprising of SAQ & LAQ • Viva

ASSESSMENT METHODS OF LEARNING OUTCOME - PG DMLT (PATHOLOGY)

Learning outcome	Assessment
1. Able to describe principles of technical procedures of diagnostic hematological, cytological, histopathological and blood banking tests	<ul style="list-style-type: none"> • Formative & Summative assessment (BAQ , SAQ & LAQ) • Practical examination • Viva
2. Perform tests on blood, urine, stool and body fluids and their interpretation	<ul style="list-style-type: none"> • Formative & Summative assessment (BAQ , SAQ & LAQ) • Practical examination • Viva
3. Perform histo techniques – Tissue processing, section cutting, routine and special Stains	<ul style="list-style-type: none"> • Practical examination • Viva • Formative & Summative assessment (BAQ , SAQ & LAQ)
4. Perform blood banking tests – blood group, cross-matching, Coombs test	<ul style="list-style-type: none"> • Practical examination • Viva • Formative & Summative assessment (BAQ , SAQ & LAQ)
5. Understand and explain about factors in causation of hematological disorders	<ul style="list-style-type: none"> • Formative & Summative examination (BAQ, SAQ & LAQ)
6. Able to identify vital organs on gross and microscopic examination.	<ul style="list-style-type: none"> • Practical examination • Viva
7. Able to tell about working, maintenance and use of the instruments in hematology and histopathology	<ul style="list-style-type: none"> • Practical examination • Viva • Formative & Summative assessment (BAQ, SAQ & LAQ)
8. Able to understand laboratory management, receiving and recording of specimens and maintaining of records	<ul style="list-style-type: none"> • Formative & Summative assessment (BAQ, SAQ & LAQ) • Practical examination • Viva

**ASSESSMENT METHODS OF LEARNING OUTCOME -
PG DMLT(MICROBIOLOGY)**

Learning outcome	Assessment
<p>1. Able to describe principles of technical procedures of diagnostic Bacteriology, Mycology, Parasitology, Immunology & Virology</p>	<ul style="list-style-type: none"> • Formative & Summative assessment (BAQ, SAQ & LAQ) • Practical examination • Viva
<p>2. Perform tests on various clinical specimens such as urine, pus, blood, sputum, stool, serum, body fluids and their interpretation</p>	<ul style="list-style-type: none"> • Formative & Summative assessment (BAQ, SAQ & LAQ) • Practical examination • Viva
<p>3. Able to prepare routinely required culture media e.g. BAMAC, CH, MH, NA, & also special media</p>	<ul style="list-style-type: none"> • Practical examination • Viva
<p>4. Able to perform culture techniques, biochemicals and ABST</p>	<ul style="list-style-type: none"> • Practical examination • Viva

<p>5. Able to tell about working, maintenance and use of the microscope and instruments used in Bacteriology, Virology, Mycology, Immunology. Parasitology and Mycology Lab</p>	<ul style="list-style-type: none">• Practical examination• Viva• Formative and Summative assessment (BAQ,SAQ & LAQ)
<p>6. Able to understand laboratory management, receiving and recording of specimens and maintaining of records</p>	<ul style="list-style-type: none">• Practical examination• Viva• Formative and Summative assessment• (BAQ,SAQ & LAQ)

CCMP

ASSESSMENT METHODS OF LEARNING OUTCOME- CCMP

Dept. of Pharmacology

Learning Outcome	Assessment
Knowledge	
Describe Absorption, distribution, Metabolism, Excretion of drugs	<ul style="list-style-type: none"> Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Describe principles of Pharmacovigilance & ADR reporting systems	<ul style="list-style-type: none"> Formative & Summative examination comprising of MCQ, BAQ, SAQ & LAQ Viva Practical examination OSPE
Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	<ul style="list-style-type: none"> Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
4. Describe the mechanisms of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: <ol style="list-style-type: none"> Drugs used in anemias Colony stimulating factors 	<ul style="list-style-type: none"> Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, amebiasis and intestinal helminthiasis	6. Formative & Summative examination, comprising of MCQ, BAQ, SAQ & LAQ
Skills	
Demonstrate understanding of the use of various dosage forms (oral/local/ parenteral: solid/liquid)	<ul style="list-style-type: none"> Skill assessment
Prepare oral rehydration solution from ORS packet and explain its use.	<ul style="list-style-type: none"> Skill assessment
Perform a critical evaluation of the drug promotional literature	<ul style="list-style-type: none"> OSPE

Communicate with the patient with empathy and ethics on all aspects of drug use	<ul style="list-style-type: none">• Skill station
5. Administer drugs through various routes in a simulated environment using mannequins	<ul style="list-style-type: none">• Skill assessment

Medical Graduate Attributes Assessment

MIMER MEDICAL COLLEGE, TALEGAON (D)

Assessment methods:

The interns are expected to maintain the log book during their tenure.

Based on the record of the work, students are graded with the score from 0-5 on five-point Likertscale.

(0-poor, 1- below average, 2-fair, 3-average, 4-above average, 5-excellent)

A Score of less than 3 in any of above items will represent unsatisfactory completion of the tenure
Students will get scoring under following headings;

1. Proficiency of knowledge required for each case

2. Responsibility, punctuality, work up of case, involvement in treatment, follow-up reports

3. Capacity to work in a team (Behavior with colleagues, nursing staff and relationship with paramedical staff).

4. Initiative, participation in discussions, research aptitude

For Post Graduate

The competency in skills expected to attain

A) Competency for performance of self-performance,

B) Competency of having observed,

C). Competency in having assisted the procedure

D) Competency in performing the procedures independently

Post graduate students have to appear for end of tenure examination where they are assessed for their knowledge (theory and practice)

