PONDICHERRY UNIVERSITY

MBBS CURRICULUM 2019

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CHAPTER I

GENERAL CONSIDERATIONS AND TEACHING APPROACH

1. The provisions contained in Part II of these Regulations shall apply to the MBBS course starting from academic year 2019-20 onwards

2. Indian Medical Graduate Training Programme

The undergraduate medical education programme is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training programme are hereby prescribed:-

2.1. National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

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

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

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

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

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

2.2. Institutional Goals

(1) In consonance with the national goals each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

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

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

(c) appreciate rationale for different therapeutic modalities; be familiar with the administration of "essential medicines" and their common adverse effects.

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

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

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

(i) Family Welfare and Maternal and Child Health (MCH)
(ii) Sanitation and water supply
(iii) Prevention and control of communicable and non-communicable diseases
(iv) Immunization
(v) Health Education
(vi) Indian Public Health Standards (IPHS), at various levels of service delivery
(vii) Bio-medical waste disposal
(viii) Organizational and/or institutional arrangements.

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

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

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

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

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

(2) All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate.

2.3. Goals and Roles for the Learner

In order to fulfil the goal of the IMG training programme, the medical graduate must be able to function in the following roles appropriately and effectively:-

2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

2.3.2. Leader and member of the health care team and system with capabilities to collect analyze, synthesize and communicate health data appropriately.

2.3.3. Communicator with patients, families, colleagues and community.

2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.

2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion

3.1.1. Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioural and social perspective.

3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.

3.1.3. Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

3.1.4. Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7. Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8. Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9. Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10. Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frame works.

3.1.11. Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12. Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

(i) Disease prevention,

(ii) Health promotion and cure,

(iii) Pain and distress alleviation, and

(iv) Rehabilitation.

3.1.13. Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.

3.1.14. Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.

3.1.15. Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3.2. Leader and member of the health care team and system

3.2.1. Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2. Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3. Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4. Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.

3.2.5. Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6. Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancers, in collaboration with other members of the health care team.

3.2.7. Communicator with patients, families, colleagues and community

Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.

Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.

Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

3.3. Lifelong learner committed to continuous improvement of skills and knowledge

3.3.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.3.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.3.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.3.4. Demonstrate ability to search (including through electronic means), and critically evaluate the medical literature and apply the information in the care of the patient.

3.3.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5. Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession

3.5.1 Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2 Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

4. Broad Outline on training format

4.1. In order to ensure that training is in alignment with the goals and competencies listed in sub-clause 2 and 3 above:

4.1.1. There shall be a "Foundation Course" to orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.

4.1.2. The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible in order to enhance learner's interest and eliminate redundancy and overlap.

4.1.3. Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case based learning.

4.1.4. Clinical training shall emphasize early clinical exposure, skill acquisition, certification in essential skills; community/primary/secondary care-based learning experiences and emergencies.

4.1.5. Training shall primarily focus on preventive and community based approaches to health and disease, with specific emphasis on national health priorities such as family welfare, communicable and non- communicable diseases including cancer, epidemics and disaster management.

4.1.6.1. Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories.

4.1.7. The development of ethical values and overall professional growth as integral part of curriculum shall be emphasized through a structured longitudinal and dedicated programme on professional development including attitude, ethics and communication.

4.1.8. Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill-based training shall be also maintained.

4.1.9. Appropriate Faculty Development Programmes shall be conducted regularly by institutions to facilitate medical teachers at all levels to continuously update their professional and teaching skills, and align their teaching skills to curricular objectives.

CHAPTER II

ADMISSION TO INDIAN MEDICAL GRADUATE PROGRAMME: NATIONAL ELIGIBILITY-CUM- ENTRANCE TEST AND COMMON COUNSELLING

5. Admission to the Indian Medical Graduate Programme

The provision as contained in Part I – Chapter II shall be the governing provisions.

CHAPTER III

MIGRATION

6. Migration

The provision as contained in Part I - Chapter II Clause 6 shall be the governing provisions.

CHAPTER IV

PHASE WISE TRAINING AND TIME DISTRIBUTION FOR PROFESSIONAL DEVELOPMENT

The Competency based Undergraduate Curriculum and Attitude, Ethics and Communication (AETCOM) course, as published by the Medical Council of India and also made available on the Council's website, shall be the curriculum for the batches admitted in MBBS from the academic year 2019-20 onwards.

Provided that in respect of batches admitted prior to the academic year 2019-20, the governing provisions shall remain as contained in the Part I of these Regulations.

7. **Training period and time distribution**:

7.1. Every learner shall undergo a period of certified study extending over 4 ½ academic years, divided into nine semesters from the date of commencement of course to the date of completion of examination which shall be followed by one year of compulsory rotating internship.

7.2. Each academic year will have at least 240 teaching days with a minimum of eight hours of working on each day including one hour as lunch break.

7.3. Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension. Learner centered learning methods should include problem oriented learning, case studies, community oriented learning, self- directed and experiential learning.

7.4. The period of 4 ½ years is divided as follows:

7.4.1. Pre-Clinical Phase [(Phase I) - First Professional phase of 13 months preceded by Foundation Course of one month]: will consist of preclinical subjects – Human Anatomy, Physiology, Biochemistry, Introduction to Community

Medicine, Humanities, Professional development including Attitude, Ethics & Communication (AETCOM) module and early clinical exposure, ensuring both horizontal and vertical integration.

7.4.2. Para-clinical phase [(Phase II) - Second Professional (12 months)]: will consist of Para-clinical subjects namely Pathology, Pharmacology, Microbiology, Community Medicine, Forensic Medicine and Toxicology, Professional development including Attitude, Ethics & Communication (AETCOM) module and introduction to clinical subjects ensuring both horizontal and vertical integration.

The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings should take place at the *primary level* of health care. It is desirable to provide learning experiences in secondary health care, wherever possible**.** This will involve:

(a) Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,

(b) Involvement in patient care as a team member,

(c) Involvement in patient management and performance of basic procedures.

7.4.3. Clinical Phase – [(Phase III) Third Professional (28 months)]

(a) Part I (13 months) - The clinical subjects include General Medicine, General Surgery, Obstetrics & Gynaecology, Pediatrics, Orthopaedics, Dermatology, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Psychiatry, Respiratory Medicine, Radiodiagnosis & Radiotherapy and Anaesthesiology & Professional development including AETCOM module.

(b) Electives (2 months) - To provide learners with opportunity for diverse learning experiences, to do research/community projects that will stimulate enquiry, self directed experimental learning and lateral thinking [9.3].

(c) Part II (13 months) - Clinical subjects include:

i. Medicine and allied specialties (General Medicine, Psychiatry, Dermatology Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis)

ii. Surgery and allied specialties (General Surgery, Orthopedics [including trauma]), Dentistry, Physical Medicine and rehabilitation, Anaesthesiology and Radiodiagnosis)

iii. Obstetrics and Gynecology (including Family Welfare)

iv. Pediatrics

v. AETCOM module

7.4. Didactic lectures shall not exceed one third of the schedule; two third of the schedule shall include interactive sessions, practicals, clinical or/and group discussions. The learning process should include clinical experiences, problem oriented approach, case studies and community health care activities.

The admission shall be made strictly in accordance with the statutory notified time schedule towards the same.

7.5. Universities shall organize admission timing and admission process in such a way that teaching in the first Professional year commences with induction through the Foundation Course by the 1st of August of each year.

(i) Supplementary examinations shall not be conducted later than 90 days from the date of declaration of the results of the main examination, so that the learners who pass can join the main batch for progression and the remainder would appear for the examination in the subsequent year.

(ii) A learner shall not be entitled to graduate later than ten (10) years of her/his joining the first MBBS course.

7.6. No more than four attempts shall be allowed for a candidate to pass the first Professional examination. The total period for successful completion of first Professional course shall not exceed four (4) years. Partial attendance of examination in any subject shall be counted as an attempt.

7.7. A learner, who fails in the second Professional examination, shall not be allowed to appear in third Professional Part I examination unless she/he passes all subjects of second Professional examination.

7.8. Passing in third Professional (Part I) examination is not compulsory before starting part II training; however, passing of third Professional (Part I) is compulsory for being eligible for third Professional (Part II) examination.

7.9. During para-clinical and clinical phases, including prescribed 2 months of electives, clinical postings of three hours duration daily as specified in Tables 5, 6, 7 and 8 would apply for various departments.

7.10. Passing in first Professional is compulsory before proceeding to phase II training

8. Phase distribution and timing of examination

8.1. Time distribution of the MBBS programme is given in Table 1.

8.2. Distribution of subjects by Professional Phase-wise is given in Table 2.

8.3. Minimum teaching hours prescribed in various disciplines are as under Tables 3-7.

8.4. Distribution of clinical postings is given in Table 8.

8.5. Duration of clinical postings will be:

8.5.1. Second Professional : 36 weeks of clinical posting (Three hours per day - five days per week : Total 540 hours)

8.5.2. Third Professional part I: 42 weeks of clinical posting (Three hours per day - six days per week : Total 756 hours)

8.5.3. Third Professional part II: 44 weeks of clinical posting (Three hours per day - six days per week : Total 792 hours)

8.6. Time allotted excludes time reserved for internal / University examinations, and vacation.

8.7. Second professional clinical postings shall commence before / after declaration of results of the first professional phase examinations, as decided by the institution/ University. Third Professional parts I and part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.

8.8. 25% of allotted time of third Professional shall be utilized for integrated learning with pre- and para- clinical subjects. This will be included in the assessment of clinical subjects.

Table 1: Time distribution of MBBS Programme & Examination Schedule

<table>
<tr><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Foundation Course</td><td colspan="4">I MBBS</td></tr>
<tr><td colspan="8">I MBBS</td><td>Exam I MBBS</td><td colspan="3">II MBBS</td></tr>
<tr><td colspan="8">II MBBS</td><td>Exam II MBBS</td><td colspan="3">III MBBS</td></tr>
<tr><td colspan="9">III MBBS Part I</td><td>Exam III MBBS Part I</td><td>Electives & Skills</td></tr>
<tr><td colspan="12">III MBBS Part II</td></tr>
<tr><td>Exam III MBBS Part II</td><td></td><td colspan="10">Internship</td></tr>
<tr><td colspan="2">Internship</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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- One month is provided at the end of every professional year for completion of examination and declaration of results.

Table 2: Distribution of subjects by Professional Phase

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	Foundation Course (1 month) Human Anatomy, Physiology & Biochemistry, introduction to Community Medicine, Humanities Early Clinical Exposure	1 + 13 months	I Professional
	Attitude, Ethics, and Communication Module (AETCOM)		
Second Professional MBBS	• Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical postings • Attitude, Ethics & Communication Module (AETCOM)	12 months	II Professional
Third Professional MBBS Part I	• General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis & Radiotherapy, Anesthesiology • Clinical subjects /postings • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part I)
Electives	• Electives, Skills and assessment*	2 months	
Third Professional MBBS Part II	• General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM)	13 months	III Professional (Part II)

*Assessment of electives shall be included in Internal Assessment.

Table 3: Foundation Course (one month)

Subjects/ Contents	Teaching hours	Self Directed Learning (hours)	Total hours
Orientation [1]	30	0	30
Skills Module [2]	35	0	35
Field visit to Community Health Center	8	0	8
Introduction to Professional Development & AETCOM module	-	-	40
Sports and extracurricular activities	22	0	22
Enhancement of language/ computer skills[3]	40	0	40
	-	-	175

1. Orientation course will be completed as single block in the first week and will contain elements outlined in 9.1.
2. Skills modules will contain elements outlined in 9.1.
3. Based on perceived need of learners, one may choose language enhancement (English or local spoken or both) and computer skills. This should be provided longitudinally through the duration of the Foundation Course.

   Teaching of Foundation Course will be organized by pre-clinical departments.

Table 4: First Professional teaching hours

Subjects	Lectures (hours)	Small Group Teaching/ Tutorials/ Integrated learning/ Practical (hours)	Self directed learning (hours)	Total (hours)
Human Anatomy	220	415	40	675
Physiology*	160	310	25	495
Biochemistry	80	150	20	250
Early Clinical Exposure**	90	-	0	90
Community Medicine	20	27	5	52
Attitude, Ethics & Communication Module (AETCOM) ***	-	26	8	34
Sports and extracurricular activities	-	-	-	60

Formative assessment and Term examinations	-	-	-	80
Total	-	-	-	1736

* including Molecular Biology.

** Early clinical exposure hours to be divided equally in all three subjects.

*** AETCOM module shall be a longitudinal programme.

Table 5: Second Professional teaching hours

Subjects	Lectures (hours)	Small group learning (Tutorials / Seminars) /Integrated learning (hours)	Clinical Postings (hours) *	Self - Directed Learning (hours)	Total (hours)
Pathology	80	138	-	12	230
Pharmacology	80	138	-	12	230
Microbiology	70	110	-	10	190
Community Medicine	20	30	-	10	60
Forensic Medicine and Toxicology	15	30	-	5	50
Clinical Subjects	75**	-	540***		615
Attitude, Ethics & Communication Module (AETCOM)		29	-	8	37
Sports and extracurricular activities	-	-	-	28	28
Total	-	-	-	-	1440

* At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics.

** 25 hours each for Medicine, Surgery and Gynecology & Obstetrics.

***The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday).

Table 6: Third Professional Part I teaching hours

Subjects	Teaching Hours	Tutorials/ Seminars /Integrated Teaching (hours)	Self-Directed Learning (hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopaedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	2	20
Otorhinolaryngology	25	40	5	70
Ophthalmology	30	60	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings*	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

** The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).*

Table 7: Third Professional Part II teaching hours

Subjects	Teaching Hours	Tutorials/Seminars / Integrated Teaching (hours)	Self - Directed Learning (hours)	Total* (hours)
General Medicine	70	125	15	210
General Surgery	70	125	15	210
Obstetrics and Gynecology	70	125	15	210
Pediatrics	20	35	10	65
Orthopaedics	20	25	5	50

Clinical Postings**				792
Attitude, Ethics & Communication Module (AETCOM)***	28		16	43
Electives				200
Total	250	435	60	1780

* 25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

** *The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday).*

*** Hours from clinical postings can also be used for AETCOM modules.

Table 8: Clinical postings

Subjects	**Period of training in weeks**			**Total weeks**
	II MBBS	**III MBBS Part I**	**III MBBS Part II**	
Electives	-	-	8* (4 regular clinical posting)	4
General Medicine[1]	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics &Gynaecology[2]	4	4	8 +4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics - including Trauma[3]	2	4	2	8
Otorhinolaryngology	4	4	-	8
Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis[4]	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anesthesia	-	2	-	2
Casualty	-	2	-	2
	36	4 2	48	126

* In four of the eight weeks of electives, regular clinical postings shall be ccommodated. Clinical postings may be adjusted within the time framework.

[1] This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

[2] This includes maternity training and family welfare (including Family Planning).

[3] This posting includes Physical Medicine and Rehabilitation.

[4] This posting includes Radiotherapy, wherever available.

9. New teaching / learning elements

9.1. Foundation Course

9.2. **Goal:** The goal of the Foundation Course is to prepare a learner to study medicine effectively. It will be of one month duration after admission.

9.2.1. **Objectives:** The objectives are to:

(a) Orient the learner to:

(i) The medical profession and the physician's role in society

(ii) The MBBS programme

(iii) Alternate health systems in the country and history of medicine

(iv) Medical ethics, attitudes and professionalism

(v) Health care system and its delivery

(vi) National health programmes and policies

(vii) Universal precautions and vaccinations

(viii) Patient safety and biohazard safety

(ix) Principles of primary care (general and community based care)

(x) The academic ambience

(b) Enable the learner to acquire enhanced skills in:

(i) Language

(ii) Interpersonal relationships

(iii) Communication

(iv) Learning including self-directed learning

(v) Time management

(vi) Stress management

(vii) Use of information technology

(c) Train the learner to provide:

a. First-aid

b. Basic life support

9.1.3. In addition to the above, learners may be enrolled in one of the following programmes which will be run concurrently:

(a) Local language programme
(b) English language programme
(c) Computer skills
(d) These may be done in the last two hours of the day for the duration of the Foundation Course.

9.1.4. These sessions must be as interactive as possible.

9.1.5. Sports (to be used through the Foundation Course as protected 04 hours / week).

9.1.6. Leisure and extracurricular activity (to be used through the Foundation Course as protected 02 hours per week).

9.1.7. Institutions shall develop learning modules and identify the appropriate resource persons for their delivery.

9.1.8. The time committed for the Foundation Course may not be used for any other curricular activity.

9.1.9. The Foundation Course will have compulsory 75% attendance. This will be certified by the Dean of the college.

9.1.10. The Foundation Course will be organized by the Coordinator appointed by the Dean of the college and will be under supervision of the heads of the preclinical departments.

9.1.11. Every college must arrange for a meeting with parents and their wards.

9.2. Early Clinical Exposure

9.2.1. Objectives: The objectives of early clinical exposure of the first-year medical learners are to enable the learner to:

(a) Recognize the relevance of basic sciences in diagnosis, patient care and treatment,

(b) Provide a context that will enhance basic science learning,

(c) Relate to experience of patients as a motivation to learn,

(d) Recognize attitude, ethics and professionalism as integral to the doctor-patient relationship,

(e) Understand the socio-cultural context of disease through the study of humanities.

9.2.2. Elements

(a) Basic science correlation: i.e. apply and correlate principles of basic sciences as they relate to the care of the patient (this will be part of integrated modules).

(b) Clinical skills: to include basic skills in interviewing patients, doctor-patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training will be imparted in the time allotted for early clinical exposure).

(c) Humanities: To introduce learners to a broader understanding of the socio-economic framework and cultural context within which health is delivered through the study of humanities and social sciences.

9.3.Electives

9.3.1. Objectives: To provide the learner with opportunities:

(a) For diverse learning experiences,

(b) To do research/community projects that will stimulate enquiry, self-directed, experiential learning and lateral thinking.

9.3.2. Two months are designated for elective rotations after completion of the examination at end of the third MBBS Part I and before commencement of third MBBS Part II.

9.3.3. It is mandatory for learners to do an elective. The elective time should not be used to make up for missed clinical postings, shortage of attendance or other purposes.

9.3.4. Structure

(a) The learner shall rotate through two elective blocks of 04 weeks each.

(b) Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a researcher in an ongoing research project.

During the electives regular clinical postings shall continue.

(c) Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution.

OR

as a supervised learning experience at a rural or urban community clinic.

(d) Institutions will pre-determine the number and nature of electives, names of the supervisors, and the number of learners in each elective based on the local conditions, available resources and faculty.

9.3.5. Each institution will develop its own mechanism for allocation of electives.

9.3.6. It is preferable that elective choices are made available to the learners in the beginning of the academic year.

9.3.7. The learner must submit a learning log book based on both blocks of the elective.

9.3.8. 75% attendance in the electives and submission of log book maintained during elective is required for eligibility to appear in the final MBBS examination.

9.3.9. Institutions may use part of this time for strengthening basic skill certification.

9.4. Professional Development including Attitude, Ethics and Communication Module (AETCOM)

9.4.1. Objectives of the programme: At the end of the programme, the learner must demonstrate ability to:

(a) understand and apply principles of bioethics and law as they apply to medical practice and research understand and apply the principles of clinical reasoning as they apply to the care of the patients,

(b) understand and apply the principles of system based care as they relate to the care of the patient,

(c) understand and apply empathy and other human values to the care of the patient,

(d) communicate effectively with patients, families, colleagues and other health care professionals,

(e) understand the strengths and limitations of alternative systems of medicine,

(f) respond to events and issues in a professional, considerate and humane fashion,

(g) translate learning from the humanities in order to further his / her professional and personal growth.

9.4.2. Learning experiences:

(a) This will be a longitudinal programme spread across the continuum of the MBBS programme including internship,

(b) Learning experiences may include – small group discussions, patient care scenarios, workshop, seminars, role plays, lectures etc.

(c) Attitude, Ethics &Communication Module (AETCOM module) developed by Medical Council of India should be used longitudinally for purposes of instruction.

9.4.3. 75% attendance in Professional Development Programme (AETCOM Module) is required for eligibility to appear for final examination in each professional year.

9.4.4. Internal Assessment will include:

(a) Written tests comprising of short notes and creative writing experiences,

(b) OSCE based clinical scenarios / viva voce.

9.4.5. At least one question in each paper of the clinical specialties in the University examination should test knowledge competencies acquired during the professional development programme.

9.4.6. Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce.

9.5. Learner-doctor method of clinical training (Clinical Clerkship)

9.5.1. Goal: To provide learners with experience in:

(a) Longitudinal patient care,

(b) Being part of the health care team,

(c) Hands-on care of patients in outpatient and inpatient setting.

9.5.2. Structure:

(a) The first clinical posting in second professional shall orient learners to the patient, their roles and the specialty.

(b) The learner-doctor programme will progress as outlined in Table 9.

(c) The learner will function as a part of the health care team with the following responsibilities:

(i) Be part of the unit's outpatient services on admission days,

(ii) Remain with the admission unit until 6 PM except during designated class hours,

(iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,

(iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,

(v) Follow the patient's progress throughout the hospital stay until discharge,

(vi) Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),

(vii) Participate in unit rounds on at least one other day of the week excluding the admission day,

(viii) Discuss ethical and other humanitarian issues during unit rounds,

(ix) Attend all scheduled classes and educational activities,

(x) Document his/her observations in a prescribed log book / case record.

(d) **No learner will be given independent charge of the patient**

(e) The supervising physician will be responsible for all patient care decisions

9.5.3. Assessment:

(a) A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.

(b) The log book/ case record must include the written case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.

(c) The log book should also include records of outpatients assigned. Submission of the log book/ case record to the department is required for eligibility to appear for the final examination of the subject.

Table 9: Learner - Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner - Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

CHAPTER V

COMPETENCY BASED CURRICULUM OF THE INDIAN MEDICAL GRADUATE PROGRAMME

10. Specific Competencies

10.1. Preamble: The salient feature of the revision of the medical curriculum in 2019 is the emphasis on learning which is competency-based, integrated and learner-centered acquisition of skills and ethical & humanistic values.

Each of the competencies described below must be read in conjunction with the goals of the medical education as listed in items 2 to 3.5.5

It is recommended that didactic teaching be restricted to less than one third of the total time allotted for that discipline. Greater emphasis is to be laid on hands-on training, symposia, seminars, small group discussions, problem-oriented and problem-based discussions and self-directed learning. Learners must be encouraged to take active part in and shared responsibility for their learning.

The global competencies to be achieved by the learner are outlined above in Chapter 1- section 3. Since the MBBS programme assessment will continue to be subject based, subject specific competencies have been outlined. These have to be acquired by the learner in the corresponding professional year. These competencies must be interpreted in the larger context outlined in section 3 and may be considered as "sub competencies" of the global competencies.

10.2. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). As far as possible, it is desirable that teaching/learning occurs in each phase through study of organ systems or disease blocks in order to align the learning process. Clinical cases must be used to integrate and link learning across disciplines.

10.3. Pre-clinical Subjects

10.3.1. Human Anatomy

a) Competencies: The undergraduate must demonstrate:

1. Understanding of the gross and microscopic structure and development of human body,
2. Comprehension of the normal regulation and integration of the functions of the organs and systems on basis of the structure and genetic pattern,
3. Understanding of the clinical correlation of the organs and structures involved and interpret the anatomical basis of the disease presentations.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems with clinical correlation that will provide a context for the learner to understand the relationship between structure and function and interpret the anatomical basis of various clinical conditions and procedures.

10.3.2. **Physiology**

(a) **Competencies:** The undergraduates must demonstrate:

1. Understanding of the normal functioning of the organs and organ systems of the body,
2. Comprehension of the normal structure and organization of the organs and systems on basis of the functions,
3. Understanding of age-related physiological changes in the organ functions that reflect normal growth and development,
4. Understand the physiological basis of diseases.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems in order to provide a context in which normal function can be correlated both with structure and with the biological basis, its clinical features, diagnosis and therapy.

10.3.3. **Biochemistry**

The course will comprise Molecular and Cellular Biochemistry.

(a) **Competencies**: The learner must demonstrate an understanding of:

1. Biochemical and molecular processes involved in health and disease,
2. Importance of nutrition in health and disease,
3. Biochemical basis and rationale of clinical laboratory tests,and demonstrate ability to interpret these in the clinical context.

(b) **Integration**: The teaching/learning programme should be integrated horizontally and vertically, as much as possible, to enable learners to make clinical correlations and to acquire an understanding of the cellular and molecular basis of health and disease.

10.3.4. **Introduction to Community Medicine**

(a) **Competencies**: The undergraduate must demonstrate:

1. Understanding of the concept of health and disease,
2. Understanding of demography, population dynamics and disease burden in National and global context,
3. Comprehension of principles of health economics and hospital management,
4. Understanding of interventions to promote health and prevent diseases as envisioned in National and State Health Programmes.

10.4. Second Professional (Para-Clinical)

10.4.1. Pathology

(a) Competencies: The undergraduate must demonstrate:

1. Comprehension of the causes, evolution and mechanisms of diseases,
2. Knowledge of alterations in gross and cellular morphology of organs in disease states,
3. Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy,

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing deviations from normal structure and function and clinically correlated so as to provide an overall understanding of the etiology, mechanisms, laboratory diagnosis, and management of diseases.

10.4.2. Microbiology

(a) Competencies: The undergraduate learner demonstrate:

1. Understanding of role of microbial agents in health and disease,
2. Understanding of the immunological mechanisms in health and disease,
3. Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents,
4. Knowledge of the principles and application of infection control measures,
5. An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.

10.4.3. Pharmacology

(a) Competencies: The undergraduate must demonstrate:

1. Knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics,
2. Ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance,
3. Knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship,
4. Ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems.

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing the interaction between drug, host and disease in order to provide an overall understanding of the context of therapy.

10.4.4. Forensic Medicine and Toxicology

(a) **Competencies**: The learner must demonstrate:

1. Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
2. Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
3. Ability to manage medical and legal issues in cases of poisoning / overdose,
4. Understanding the medico-legal framework of medical practice and medical negligence,
5. Understanding of codes of conduct and medical ethics.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

10.4.5. Community Medicine – as per 10.3.4

10.5. Third Professional (Part I)

10.5.1. General Medicine

(a) **Competencies**: The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:

1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
2. Competently interview and examine an adult patient and make a clinical diagnosis,
3. Appropriately order and interpret laboratory tests,
4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
5. Follow up of patients with medical problems and refer whenever required,
6. Communicate effectively, educate and counsel the patient and family,
7. Manage common medical emergencies and refer when required,
8. Independently perform common medical procedures safely and understand patient safety issues.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.

10.5.2. General Surgery

(a) **Competencies**: The student must demonstrate:

1. Understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children,
2. Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition,
3. Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice,
4. Knowledge of common malignancies in India and their prevention, early detection and therapy,
5. Ability to perform common diagnostic and surgical procedures at the primary care level,
6. Ability to recognize, resuscitate, stabilize and provide Basic & Advanced Life Support to patients following trauma,
7. Ability to administer informed consent and counsel patient prior to surgical procedures,
8. Commitment to advancement of quality and patient safety in surgical practice.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

10.5.3. Obstetrics and Gynaecology

(a) **Competencies in Obstetrics**: The student must demonstrate ability to:

1. Provide peri-conceptional counseling and antenatal care,
2. Identify high-risk pregnancies and refer appropriately,
3. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings,
4. Prescribe drugs safely and appropriately in pregnancy and lactation,
5. Diagnose complications of labor, institute primary care and refer in a timely manner,
6. Perform early neonatal resuscitation,
7. Provide postnatal care, including education in breast-feeding,
8. Counsel and support couples in the correct choice of contraception,
9. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient,
10. Apply medico-legal principles as they apply to tubectomy, Medical

Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related Acts.

Competencies in Gynecology: The student must demonstrate ability to:

1. Elicit a gynecologic history, perform appropriate physical and pelvic examinations and PAP smear in the primary care setting,
2. Recognize, diagnose and manage common reproductive tract infections in the primary care setting,
3. Recognize and diagnose common genital cancers and refer them appropriately.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for women in their reproductive years and beyond, based on a sound knowledge of structure, functions and disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

10.5.4. Pediatrics

(a) **Competencies:** The student must demonstrate:

1. Ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal,
2. Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate,
3. Ability to perform procedures as indicated for children of all ages in the primary care setting,
4. Ability to recognize children with special needs and refer appropriately,
5. Ability to promote health and prevent diseases in children,
6. Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,
7. Ability to communicate appropriately and effectively.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

10.5.5. Orthopaedics (including Trauma)

(a) Competencies: The student must demonstrate:

1. Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,
2. Knowledge of the medico-legal aspects of trauma,
3. Ability to recognize and manage common infections of bone and joints in the primary care setting,
4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,
5. Ability to perform simple orthopaedic techniques as applicable to a primary care setting,
6. Ability to recommend rehabilitative services for common orthopaedic problems across all ages.

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of orthopaedic problems, their management and correlation with function, rehabilitation and quality of life.

10.5.6. Forensic Medicine and Toxicology – as per 10.4.4

10.5.7. Community medicine

(a) Competencies: The learner must demonstrate:

1. Understanding of physical, social, psychological, economic and environmental determinants of health and disease,
2. Ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,
3. Ability to Implement and monitor National Health Programmes in the primary care setting,
4. Knowledge of maternal and child wellness as they apply to national health care priorities and programmes,
5. Ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.

(b) Integration: The teaching should be aligned and integrated **horizontally** and vertically in order to allow the learner to understand the impact of environment, society and national health priorities as they relate to the promotion of health and prevention and cure of disease.

10.5.8. Dermatology, Venereology & Leprosy

(a) Competencies: The undergraduate student must demonstrate:

1. Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,
2. Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate,
3. A syndromic approach to the recognition, diagnosis, prevention,

counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities,

4. Ability to recognize and treat emergencies including drug reactions and refer as appropriate.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to emphasize the biologic basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.

10.5.9. Psychiatry

(a) **Competencies**: The student must demonstrate:

1. Ability to promote mental health and mental hygiene,
2. Knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages,
3. Ability to recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage, and refer appropriately,
4. Ability to recognize alcohol/ substance abuse disorders and refer them to appropriate centers,
5. Ability to assess risk for suicide and refer appropriately,
6. Ability to recognize temperamental difficulties and personality disorders,
7. Assess mental disability and rehabilitate appropriately,
8. Understanding of National and State programmes that address mental health and welfare of patients and community.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand bio-psycho-social-environmental interactions that lead to diseases/ disorders for preventive, promotive, curative, rehabilitative services and medico-legal implications in the care of patients both in family and community.

10.5.10. Respiratory Medicine

(a) **Competencies:** The student must demonstrate:

1. Knowledge of common chest diseases, their clinical manifestations, diagnosis and management,
2. Ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National Tuberculosis Control programme,
3. Ability to manage common respiratory emergencies in primary care setting and refer appropriately.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to recognize diagnose and treat TB in the context of the society, national health priorities, drug resistance and co-morbid conditions like HIV.

10.5.11. Otorhinolaryngology

(a) **Competencies:** The learner must demonstrate:

1. Knowledge of the common Otorhinolaryngological (ENT) emergencies and problems,
2. Ability to recognize, diagnose and manage common ENT emergencies and problems in primary care setting,
3. Ability to perform simple ENT procedures as applicable in a primary care setting,
4. Ability to recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality of life.

10.5.12. Ophthalmology

(a) **Competencies**: The student must demonstrate:

1. Knowledge of common eye problems in the community
2. Recognize, diagnose and manage common eye problems and identify indications for referral,
3. Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.

(b) **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.

10.5.13.a. Radiodiagnosis

(a) **Competencies**: The student must demonstrate:

1. Understanding of indications for various radiological investigations in common clinical practice,
2. Awareness of the ill effects of radiation and various radiation protective measures to be employed,
3. Ability to identify abnormalities in common radiological investigations.

(b) **Integration:** Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis and therapy.

10.5.13.b. Radiotherapy

(a) Competencies: The student must demonstrate understanding of:

1. Clinical presentations of various cancers,
2. Appropriate treatment modalities for various types of malignancies,
3. Principles of radiotherapy and techniques.

(b) Integration: Horizontal and vertical integration to enable basic understanding of fundamental principles of radio-therapeutic procedures.

10.5.14. Anaesthesiology

(a) Competencies in Anaesthesiology: The student must demonstrate ability to:

1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anaesthesia / surgery,
2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anaesthesia and recovery (including variations in recovery from anaesthesia and anaesthetic complications),
3. Describe and discuss the management of acute and chronic pain, including labour analgesia,
4. Demonstrate awareness about the maintenance of airway in children and adults in various situations,
5. Demonstrate the awareness about the indications, selection of cases and execution of cardio- pulmonary resuscitation in emergencies and in the intensive care and high dependency units,
6. Choose cases for local / regional anaesthesia and demonstrate the ability to administer the same,
7. Discuss the implications and obtain informed consent for various procedures and to maintain the documents.

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for patients undergoing various surgeries, in patients with pain, in intensive care and in cardio respiratory emergencies. Integration with the preclinical department of Anatomy, para- clinical department of Pharmacology and horizontal integration with any/all surgical specialities is proposed.

10.6. Third Professional (Part II)

10.6.1. General Medicine – as per 10.5.1

10.6.2. General Surgery – as per 10.5.2

10.6.3. Obstetrics & Gynaecology – as per 10.5.3

10.6.4. Pediatrics – as per 10.5.4

10.6.5 Orthopaedics – as per 10.5.5

CHAPTER 6

ASSESSMENT

11. Assessment

11.1. Eligibility to appear for Professional examinations

I. ATTENDANCE

a. Attendance requirements are 75% in theory and 80% in practical/ clinical for eligibility to appear for the University examinations in that subject. In subjects that are taught in more than one phase – the student must have 75% attendance in theory and 80% in practical in each phase of instruction in that subject.

b. If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the student must have 75% attendance in each subject and 80% attendance in each clinical posting.

c. Students who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

II. INTERNAL ASSESSMENT

1. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three internal assessment examinations in each Preclinical / Para-clinical subject and no less than two examinations in each clinical subject in a professional year. An end of posting clinical assessment shall be conducted for each clinical posting in each professional year.

2. When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment. For example, General Medicine must be assessed in second Professional, third Professional Part I and third Professional Part II, independently.

3. Day to day records and log book (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.

4. The final internal assessment in a broad clinical specialty (e.g., Surgery and allied specialties etc.) shall comprise of marks from all the constituent specialties. The proportion of the marks for each constituent specialty shall be determined by the time of instruction allotted to each.

5. Learners must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.

6. The results of internal assessment should be displayed on the notice board within 15 days of the test. Universities shall guide the colleges regarding formulating

policies for remedial measures for students who are either not able to score qualifying marks or have missed on some assessments due to any reason.

7. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.
8. Students are expected to have required competencies for that phase of training as a condition for appearing in the Final University Examinations. Possession of required competencies by the student should be certified by the HOD of that subject and Dean of the College and supported by the completed Log Book. They are all subject to the scrutiny by the University.
9. Average of all internal assessment examinations marks, including model exam, is to be taken for calculating final internal assessment marks.
10. The minimum number of internal assessment examinations to be held in each professional phase is mentioned in **Table 1 and Annexure 1**

Table 1: Minimum number of Internal Assessment examinations

PHASE	SUBJECTS	Exams
I MBBS	Anatomy	3
	Physiology	3
	Biochemistry	3
	Community Medicine	1
II MBBS	Pathology	3
	Pharmacology	3
	Microbiology	3
	General Medicine	2
	General Surgery	2
	Obstetrics & Gynaecology	2
	Forensic Medicine & Toxicology	2
	Community Medicine	2
III (Part 1) MBBS	Forensic Medicine & Toxicology	2
	Community Medicine	2
	Ophthalmology	2
	Otorhinolaryngology	2
	General Medicine	2
	General Surgery	2
	Obstetrics & Gynaecology	2
	Pediatrics	2
III (Part 2) MBBS	General Medicine	2
	General Surgery	2
	Obstetrics & Gynaecology	2
	Pediatrics	2

11. Final internal assessment calculation is as follows:
    The Theory examination constitutes 50 marks & the Practical/ Clinical 50 marks.

    Viva, if included, is to be for a maximum of 10 marks and is added to practical/ clinical. Marks for record book, if included, is added to practical/ clinical.

    Practical/ Clinical internal assessment calculation is

    Practical/ Clinical 40 marks + Viva 10 marks = Total 50 marks

12. Minimum eligibility criteria of internal assessment to appear for University examination:
    a. Theory (50) - 40%, that is 20/ 50 separately
    b. Practical (50 i.e. practical 40 + viva 10) - 40%, that is 20/ 50 separately
    c. Theory (50) + Practical (50) - 50 %, that is 50/100 combined
    d. Theory and practical marks are separately uploaded on the University portal.

13. The hard copy of internal assessment marks of students eligible to appear for University examination is to be signed by the concerned student, the concerned subject HOD and the Dean of the medical college. Signed hard copy is to be submitted to the COE 15 days before the commencement of the University Theory examination as per **Table 2**.

Table 2: Internal assessment marks of students eligible for University examination

Subject:

S No.	Reg No.	Name	Theory Marks/ 50	Practical Marks/ 50	Total Marks/ 100	Signature of student

Signature of HOD

Signature of Dean

14. The list of students not eligible to appear for the University examination is to be submitted to the COE 15 days before the commencement of the University Theory examination as per **Table 3**.

Table 3: Students not eligible for University Examination

University Examination:

S No.	Reg No.	Name of student

Signature of all HODs of concerned professional phase subjects

Signature of Dean

Internal assessment marks only of students eligible to appear for the University examination are to be uploaded on the University portal 7 days before the commencement of the University Theory examination.

15. Internal assessment marks once uploaded cannot be improved or changed at any point of time, for any reason.
16. Institutions should formulate policies for remedial measures for students who are either not able to score qualifying marks or have missed on some assessments due to any reason(s)
17. Documents for internal assessment, including theory answer papers, log books should be preserved by the concerned department till the candidate passes the said professional year University examination. These documents are subject to scrutiny by the University authorities without prior notice.

11.2. UNIVERSITY EXAMINATIONS

Summative assessment consists of University examinations. Each theory paper will have 100 marks. Marks distribution for various subjects are as follows:

Table 4: Marks distribution for subjects in University examinations

Phase of Course	Written Theory Total	Total Practical/ Clinical		Total
		Practical/ Clinical	Viva	
First Professional				
Anatomy - 2 papers	200	80	20	300
Physiology - 2 papers	200	80	20	300
Biochemistry - 2 papers	200	80	20	300
Second Professional				
Pharmacology - 2 papers	200	80	20	300
Pathology - 2 papers	200	80	20	300
Microbiology - 2 papers	200	80	20	300
Third Professional Part – I				
Forensic Medicine & Toxicology -1 paper	100	80	20	200
Ophthalmology - 1 paper	100	80	20	200
Otorhinolaryngology - 1 paper	100	80	20	200
Community Medicine - 2 papers	200	80	20	300
Third Professional Part – II				
General Medicine - 2 papers	200	160	40	400
General Surgery - 2 papers	200	160	40	400
Pediatrics - 1 paper	100	80	20	200
Obstetrics & Gynaecology - 2 papers	200	160	40	400

NOTE: Internal assessment marks will not be added to University examinations marks but will be shown separately in the grade card. At least one question in each paper of the clinical specialties should test knowledge - competencies acquired during the professional development programme (AETCOM module); Skills competencies acquired during the Professional Development programme (AETCOM module) must be tested during clinical, practical and viva.

In subjects that have two papers, the learner must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass in the said subject.

Pass Criteria for University Examinations

I. **Theory:** Minimum 40% marks separately in Paper I & Paper II and 50% in both papers together (Paper I + Paper II).

II. **Practical/ Clinical:** Minimum 50% marks (Practical + Viva)

Note: Viva marks are added only to practical & not to theory.

III. **Combined Theory & Practical:** Minimum 50% marks in Theory + Practical/ Clinical (including viva)

Table 5: Minimum eligibility marks to pass at University examination

THEORY					
Paper I		**Paper II**		**Total**	
Maximum marks	**Minimum pass**	**Maximum marks**	**Minimum pass**	**Maximum marks**	**Minimum pass**
100	**40**	**100**	**40**	**200**	**100**
PRACTICAL					
Maximum marks	**Minimum pass**	**Maximum marks**	**Minimum pass**		
100	**50**	**200**	**100**		
COMBINED THEORY & PRACTICAL					
Maximum marks	**Minimum pass**	**Maximum marks**	**Minimum pass**	**Maximum marks**	**Minimum pass**
200	**100**	**300**	**150**	**400**	**200**

University Examination Schedule

The regular University examinations will be held in the month of September for first & second phase and in October for final phase part 1. The examination for final phase part 2 will be held in the month of January as follows:

Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
							Foundation Course	I MBBS			
I MBBS - Regular								Exam I MBBS **September**		II MBBS	
I MBBS - Supplementary								**November**			
II MBBS - Regular								Exam II MBBS **September**		III MBBS	
II MBBS - Supplementary								**November**			
III MBBS Part 1 - Regular								Exam III MBBS (I) **October**		Elective & Skills	
III MBBS Part 1 - Supplementary								**December**			
III MBBS Part 2											

Regular Exam III MBBS Part 2 **January**	Supplementary Exam III MBBS Part 2 **March**	Internship
Internship		

Supplementary Examinations:

The supplementary examinations for every Professional examination shall be scheduled a month from the declaration of results of the regular examination.

Eligibility to appear for the supplementary examination are:

1. Students who have failed in the regular examination.
2. Students who were not eligible to write the regular exams are also eligible to write supplementary examinations if the following conditions are fulfilled:
   a. The College has submitted to the University the list of ineligible students with reasons thereof, seven days prior to the commencement of regular examination.
   b. The college has taken systematic efforts to make the ineligible students eligible by taking extra classes, conducting additional examinations, additional practical or clinical practices.

Colleges are required to commence the next Professional year course as per schedule irrespective of the declaration of University results, except internship.

University Examination medal winners will be drawn on the basis of highest marks secured only at the Regular University Examination, excluding internal assessment.

University Examination Theory Marks

The allocation of marks for University theory examinations is as follows for each paper out of a total of 100 marks and 3 hours: (All Questions are compulsory; no choices would be given)

Part I: MCQs* 20 X 1 mark each 20 marks

Part II: Structured LAQs 3 X 10 marks each 30 marks

Part III: SAQs 10 X 5 marks each 50 marks

* MCQs are to be answered in the first 30 minutes of Examinations. NO negative marks for wrong answer. Overwriting and correction in the MCQ answers is not permitted.

Example of theory paper and some examples of questions are given in **Annexure 2**. Model question papers and practical examination model for each subject is provided at the end of this document.

University Examinations

1. University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals that are necessary for him/her to function effectively and appropriately as a first contact physician. Assessment shall be carried out on an objective basis to the extent possible.

2. Practical/ clinical examinations will be conducted in the laboratories and/ or hospital wards. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form a logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

3. Viva/ oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, identification of specimens, ECG, etc. is also assessed.

4. There shall be one main examination in an academic year and a supplementary examination held for all Professional examinations (MBBS I, II, III Part 1 and III Part 2) at the earliest feasible date, scheduled after a month of declaration of results of the regular examination and not later than 90 days after the declaration of the results of the main examination.

5. A student shall not be entitled to graduate after **10 years** of his/ her joining of the first part of the MBBS course. Graduation includes the completion of internship, therefore, a student is required to pass the MBBS Part II examination within **9 years** of joining the I MBBS course and complete internship in the subsequent year.

6. University Examinations shall be held as under:

(a) First Professional

1. The first Professional examination shall be held at the end of first Professional Training (1+12 months), in the subjects of Human Anatomy, Physiology and Biochemistry.

2. A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within **4 years** of admission to the said course. Partial attendance at

any University examination shall be counted as an availed attempt. Registering for an University examination is considered as an attempt irrespective of appearance for the examination. A candidate cannot register in part or separately in individual subjects during the first appearance at the Professional Examination.

3. Passing in first Professional is compulsory before proceeding to phase II training

(b) Second Professional

1. The second Professional examination shall be held at the end of second professional training (11 months), in the subjects of Pathology, Microbiology, and Pharmacology. A candidate cannot register in part or separately in individual subjects during the first appearance at the Professional Examination.
2. Passing in second Professional examination is not compulsory before starting third Professional Part I training; however, passing second Professional is compulsory for being eligible for the third Professional Part I examination.

(c) Third Professional

1. Third Professional Part I shall be held at end of third Professional part 1 of training (12 months) in the subjects of Ophthalmology, Otorhinolaryngology, Community Medicine, Forensic Medicine and Toxicology. A candidate cannot register in part or separately in individual subjects during the first appearance at the Professional Examination.
2. Passing in third Professional (Part I) examination is not compulsory before starting part II training; however, passing of third Professional (Part I) is compulsory for being eligible for third Professional (Part II) examination.

3. Third Professional Part II - (Final Professional) examination shall be at the end of training (14 months, including 2 months of electives) in the subjects of General Medicine, General Surgery, Obstetrics & Gynaecology and Pediatrics. The discipline of Orthopaedics, Anaesthesiology, Dentistry and Radiodiagnosis will constitute 25% of the total theory marks incorporated as a separate section in paper II of General Surgery. The discipline of Psychiatry and Dermatology, Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis will constitute 25% of the total theory marks in General Medicine incorporated as a separate section in paper II of General Medicine. A candidate cannot register in part or separately in individual subjects during the first appearance at the Professional Examination.

Appointment of Examiners:

(a) Medical teacher appointed as an examiner in the particular subject must have at least **four** years of total teaching experience as assistant professor after obtaining postgraduate degree, MD/ MS in the subject in a college affiliated to a recognized/ approved/ permitted medical college.

(b) For the Practical/ Clinical examinations, there shall be atleast four examiners for 100 students, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and co-ordinator

of the whole examination programme so that uniformity in the matter of assessment of students is maintained. Where students appearing are more than 100, two additional examiners (one external & one internal) for every additional 50, or for a part there of students appearing, be appointed. If required number of internal examiners are not available for Practical examination, University would postpone the Practical examination of that college.

(c) In case of non-availability of medical teachers, approved teachers without a medical degree (engaged in the teaching of MBBS students as whole-time teachers in a recognized medical college), may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and four years teaching experience (as Assistant Professors of MBBS students), after having obtained a PhD in the subject. Further, it is required that 50% of the examiners (Internal & External) are from the medical qualification stream.

(d) External examiners may not be from the same University.

(e) The internal examiner in a subject shall not be external examiner for a college from which external examiner is appointed in his/ her subject.

(f) A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.

(g) External examiners shall rotate at an interval of 2 years.

(h) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.

(i) All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.

(j) All theory paper assessment should be done as a central assessment program (CAP) of concerned university.

(k) Internal examiners should be appointed from same institution for unitary examination in the same institution. For pooled examinations at one centre approved internal examiners from the same university may be appointed.

(l) **Grace marks:** Grace marks up to a maximum of **five** marks may be awarded, at the discretion of the University, to the total marks obtained in Paper I and Paper II theory examinations together, only under the following conditions:

i) Student should have written all the subjects of that professional phase at that examination and failed in only one subject of that professional phase. Grace marks are not awarded to student who fails in more than one subject in that professional phase.
ii) Grace marks are not to be awarded for passing a subject/s resulting from exemption of other subjects of that professional phase examination.
iii) Grace marks are only for Theory and not for Practical/Clinical examinations.

(m) All theory answer papers will be double evaluated by an internal and an external examiner, therefore re-evaluation of papers is not permitted. Re-totalling of theory papers is permissible.

Annexure 1

Phase wise schedule of internal assessment examinations

Phase	Minimum Number of tests during the year	Remarks
1st	Human Anatomy 3, Physiology 3,Biochemistry 3, Community Medicine 1	ECE assessment should be included subject-wise. There should be at least one short question from AETCOM in each subject. One of the 3 tests in preclinical subjects should be prelim or pre-university examination.
2nd	Pathology 3, Pharmacology 3,Microbiology 3 Two tests for General Medicine (Including Psychiatry, Dermatology, Venereology & Leprosy (DVL) and Respiratory Medicine including Tuberculosis), General Surgery (Including Orthopaedics, Dentistry, Anaesthesiology and Radiodiagnosis), Obstetrics & Gynaecology, Forensic Medicine & Toxicology and Community Medicine End of posting (EOP) examination at each clinical posting including those of allied subjects	Clinical subjects should also be assessed at end of each posting (EOP) - Theory and Practical There should be at least one short question from AETCOM in each subject One of the 3 tests in Para-clinical subjects should be prelim or pre-university examination
3rd	Forensic Medicine & Toxicology 2, Community Medicine 2 Ophthalmology 2, Otorhinolaryngology 2, Two tests for General Medicine (Including Psychiatry, Dermatology, Venereology & Leprosy (DVL) and Respiratory Medicineincluding Tuberculosis), General Surgery (Including Orthopaedics,Anaesthesiology and Radiodiagnosis), Pediatrics, Obstetrics &Gynaecology EOP examination at each clinical posting including allied subjects	Clinical subjects should also be tested at end of each posting (EOP)-Theory and Practical There should be at least one short question from AETCOM in each subject One of the tests in Ophthalmology, Otorhinolaryngology /Forensic Medicine &Toxicology/ Community Medicine should be prelim or pre-university examination

4th	Two Tests for- General Medicine (Including Psychiatry, Dermatology, Venereology & Leprosy (DVL) and Respiratory Medicineincluding Tuberculosis),General Surgery (Including Orthopaedics,Anaesthesiology and Radiodiagnosis), Pediatrics, Obstetrics & Gynaecology EOP examination at each clinical posting including that in allied subjects	Clinical subjects should also be tested at end of each posting (EOP) -Theory and Practical. There should be at leastoneshort question from AETCOM in each subjectOne of the tests in Medicine, Surgery, Pediatrics and Obstetrics & Gynaecology should be prelim or pre-university examination Assessment of electives to be included in IA AETCOM: Attitude, Ethics and Communication

Twenty five percent of weightage in theory tests in Medicine and Surgery should be given to allied subjects and there should be at least one question from each allied subject.

Annexure 2

Examples of theory questions

Sl.No.	Type	Explanation	Examples
1	Long Answer Question (LAQ)	The question should pose a clinical/ practical question problem to the students and require them to apply knowledge and integrate it with disciplines. Avoid giving one liners as questions. The question stem should be structured and marking distribution should be provided. Use action verbs from higher domainsas given in this document.Please avoid simple recall based questions.What is asked in the examination generally setsthe agenda of what and how the students learn.	A 6 days old term neonate has presented with jaundicenoted at 3 days of age. He is born out of normal delivery at home. On examination, he looks pale, has a liver of 5 cms and spleen of 2 cms. Other systemicexamination is normal. a.What is your provisional diagnosis? b.Which other conditions need to be considered? c. Enumerate the lab tests that you will order andtheir likely reports in each of the diagnosis that youconsidered. d.Explain the physical findings in the light ofunderlying derangements. Describe the clinical features,complications and management of type 2 diabetes mellitus. (3+3+4=10)

2.	Short Answer Question (SAQ)	These provide opportunity to sample a wider content, albeit in a short time. The questions should be task oriented rather than 'Write a short note on xxx'. (Two questions based onECE in Phase 1 in internal assessment) (Two questions based on integration in Phase 2 &3 in internal assessment)	1. What are the various ways in which acute glomerulonephritis can present during childhood? 2. What is the role of antibiotics in childhood diarrhoeas? 3.What is the utility of routine vitamin K administration during new born period? 4. Compare and contrast the use of ramipril and amlodipine in treatment of hypertension.
3.	Reasoning Questions	These provide excellent opportunities for testing integration, clinical reasoning and analytic ability of the student.	Which components of breast milk help inprevention of neonatal infections? How do they help in prevention of infection? 2.Plan immunization for a 2 years old totally un-immunized child. 3.What is the physiological basis of origin ofrespiratory sounds? How can they help us inmaking a diagnosis? 4.Explain why adrenaline is the preferred medication in anaphylactic shock.
4.	SAQ Applied aspects	(Pre & Para-Clinical subjects: questions on applied aspect)	Pre & Para-Clinical subjects: Describe clinical significance Applied of half-life of drugs.
		(Clinical subjects: questions on preclinical basis)	Clinical subjects: Explain patho-physiological basis of clinical features of heart failure
5	Short notes AETCOM	(One question on AETCOM in all subjects in all phases)	Pharmacovigilance program of India AETCOM: What are the rights of a patient in a hospital setting
6	MCQs	MCQs should be scenario based, single response with 4 options in answers. Avoid one liner and negative terms in stem of question. Avoid 'all of above' and 'none of above'in options.	A 25 year old lady was using oral contraceptives successfully for last two years. She got tuberculosis and was prescribed Rifampicin. She became pregnant after 2months of starting Rifampicin despite continuing the oral contraceptives. Which ofthe following effects of Rifampicin can be the reason for this?

			A. Induction of oral contraceptive metabolism B. Stimulation of ovulation C. Interruption of entero-hepatic circulation D. Increased excretion of oral contraceptives Key: A
	MCQs		2. A 2 year old child presents with excessive weight gain over last 1 week. He has puffy eyes, pitting edema and normal blood pressure. Urine examination shows no RBCs but massiveproteinuria. Which of the following biochemical parameters is likely to be elevated in this child? A. Urea B. Cholesterol C. Creatinine D. Uric acid Key B
			3. Which of the following term best describes the decreased effects of beta adrenergic agonists in bronchial asthma after long term use? A. Pharmacokinetic tolerance B. Pharmacodynamic tolerance C. Tachyphylaxis Drug dependence Key: B

Note: AETCOM question should be based on competencies (primarily knowledge based) acquired during teaching of the AETCOM module. At least one question in each paper should test knowledge - competencies acquired during the professional development programme (AETCOM module); Skills competencies acquired during the Professional Development programme (AETCOM module) must be tested during clinical, practical and viva.

In subjects that have two papers, the student must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass in the said subject.

Theory Model Question Paper and Practical Model for University Examinations

1. **Anatomy**
2. **Physiology**
3. **Biochemistry**
4. **Pathology**
5. **Microbiology**
6. **Pharmacology**
7. **Forensic Medicine**
8. **Community Medicine**
9. **Ophthalmology**
10. **Otorhinolaryngology**
11. **Medicine**
12. **Surgery**
13. **Obstetrics and Gynaecology**
14. **Paediatrics**

ANATOMY

THEORY QUESTION PAPER PATTERN

THEORY II PAPERS: 200 Marks (100 marks each paper)

Total Marks :100 **Time : 3 hrs**

1. MCQs	:	20 x 1 =20	- 30 mins
2. Essay	:	3 x 10 = 30	- 2 1/2hour
3. Short Answers	:	10 x 5 = 50	

PRACTICAL: 80 MARKS100 Marks

VIVA : 20 MARKS

THEORY QUESTION PAPER WITH REGION WISE DISTRIBUTION OF MARKSINCLUDING MCQ

I. PAPER- 1 **100 marks**

1. Upper Limb & Lower Limb = 30 Marks
2. Abdomen & Pelvis = 25 Marks
3. General Embryology = 5 Marks
4. Systemic Embryology =5 Marks
5. General Histology = 5 Marks
6. Systemic Histology = 5 Marks
7. AETCOM = 5 Marks

   One essay should be from upper limb, one essay from lower limb & one essay from Abdomen & Pelvis
8. MCQ = 20 Marks

   (UL5+LL5+Abd6+GE1+SE1+GH1+SH1 = 20)

II. PAPER – 2 **100 marks**

1. Thorax = 15 Marks
2. Neuroanatomy = 10 Marks
3. Head & Neck = 30 Marks
4. General Anatomy = 5 Marks

5. Genetics = 5 Marks

6. Systemic Embryology = 5 Marks

7. Systemic Histology = 5 Marks

8. AETCOM = 5 Marks

One essay should be from Thorax&Two essays from Head & Neck

9. MCQ = 20 Marks

(TH6+NA4+H&N6+GA1+GE1+SE1+SH1 = 20)

PRACTICAL & VIVA EVALUATION PATTERN WITH MARK DISTRIBUTION

TOTAL MARKS – 100

PRACTICAL – 80 MARKS

I. GROSS ANATOMY: (40 Marks)

1. Spotters: 15 x 2 = 30

Upper Limb	-2
Lower Limb	-2
Thorax	-2
Abdomen	-2
Pelvis	-2
Head & Neck	-2
Neuroanatomy	-2
Sectional Anatomy (Specimen/Chart)	-1

2. Discussion : 2 x 5 = 10(Paper -1/Paper -2)

II. HISTOLOGY: (40 Marks)

1. **Spotters : 10 x 2 = 20** (General Histology–4 &Systemic Histology–6)
2. **Discussion : 1 x 5 = 5**(1General or 1Systemic Histology slide)

3. **OSPE : 3 x 5 = 15** (Genetics – 1 & Clinical Anatomy - 2)

VIVA - 20 MARKS

Osteology	- 5
Embryology	- 5
Radiology	- 5
Surface Anatomy	- 5

ANATOMY PAPER -1

Date:…….. **Time: 10.00 AM – 01.00 PM** **Max. Marks: 80**

- **Attempt all the questions.**
- **Draw diagrams wherever necessary with suitable colours.**

I.ESSAYS: **(10X3 = 30)**

1. A College student fell on his right shoulder in a motor cycle accident and it was observed that his right arm was adducted and medially rotated and his right forearm was extended and pronated.

   a) Write the name of the clinical condition with the mention of the spinal root values affected. Describe Brachial plexus under the following headings:
   b) Formation
   c) Branches & muscles supplied by the branches. **(2+2+6 = 10)**

2. Due torepeated childbirths, a female felt a structure coming out of vagina, especially while straining.

   a) What is the diagnosis &
   b) two clinical conditions that can cause this. Write about Uterus under the following headings:
   c) Normal position
   d) Supports. **(1+2+2+5 = 10)**

3. A traffic police came with complaints of dilated tortuous structures in his legs & swelling of both feet on prolonged standing.

   a) What is the clinical condition.
   b) Write about the formation & termination of great & short saphenous veins .
   c) Add a not on the perforator veins.

   (1+4+5=10)

II. SHORT NOTES: **(10x5 = 50)**

1. Femoral Triangle
2. Gluteus maximus muscle
3. Dorsalis pedis artery
4. Gall bladder
5. Rectus sheath
6. Histology of bone
7. Notochord
8. Development of Pancreas
9. Histology of Liver
10. Ideal ways of handling of cadaver

ANATOMY PAPER -II

Date:…….. **Time: 10.00 AM – 01.00 PM** **Max. Marks: 80**

- **Attempt all the questions.**
- **Draw diagrams wherever necessary with suitable colours.**

I. ESSAYS: **(10X3 = 30)**

1. 45-year-old male, a chronic smoker & a diabetic, presented to the OPD with h/o breathlessness & a compressive pain in the chest radiating to left shoulder tip on exertion. Patient is relieved of pain after rest. ECG is normal.

   a)What is the diagnosis for this condition.Describe the
   b) origin
   c) course
   d) branches,
   e) distribution of coronary arteries
   f) What is meant by coronary dominance.

   (1+1+3+4+1=10)

2. A 50-year-old lady, complained of palpitation, restlessness for a month's duration along with a midline neck swelling since 6 months. Examination revealed - A Nodular swelling moving with deglutition, mild tremor of the hands, tachycardia, slightly prominent eyeball. **(1+2+1+1+2+3 =10)**

   a) What is the suspected clinical condition?
   b) What is the embryological basis for the swelling moving on deglutition?
   Describe the gross features of the involved gland under the following headings:
   c) location,
   d) parts,
   e) coverings &
   f) Histology

3. A 60-year-old female, who underwent superficial parotidectomy surgery came with complaints of excessive sweating over the affected side of the face whenever she attempts to eat.
   a) What is the diagnosis
   b) explain the anatomical basis of the lesion. Also describe the
   c) external features
   d) secretomotor pathway &
   e) structures lying inside the Parotid gland. **(1+2+3+3+1 = 10)**

II. SHORT NOTES: **(10x5 = 50)**

Thoracic duct

2. Scalp – Layers and applied aspects
3. Cadaveric oath
4. Muscles of the Pharynx and nerve Supply
5. White matter of cerebrum
6. Superior mediastinum – Boundaries and contents
7. Development of Inter atrial septum
8. Circle of Willis
9. Sex linked recessive inheritance
10. Synovial joint

PHYSIOLOGY

1. SUBJECT: PHYSIOLOGY **MINIMUM MARKS FOR PASSING**

THEORY – 2 PAPERS 100 MARKS EACH		40 IN EACH PAPER
THEORY	2 X 100 = 200	100
PRACTICALS	= 100 (VIVA=20 MARKS)	50
TOTAL	= 300	150
PRACTICALS	= 80	
VIVA	=20	
TOTAL	=100	50

2. ELIGIBILITY IN INTERNAL ASSESSMENT

THEORY	= 50	20
PRACTICAL	= 50 (VIVA = 10 IF INCLUDED)	20
TOTAL	=100	50

3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs	20 x 1 = 20 MARKS
LAQs	3 x 10 = 30 MARKS
SAQs	10 x 5 = 50 MARKS

4. DISTRIBUTION OF CONTENT OF PHYSIOLOGY DEPARTMENT

PAPER I – General Physiology , Blood, ANS, Gastro intestinal system, Endocrine Physiology, Physiology of reproduction and Renal system, AETCOM .

PAPER I	**MCQs**	**LAQs**	**SAQs**
General physiology	3x1=3	1x15=15	1x5=5
Blood	4 x1=4		2x5=5
ANS	1 x1=1		1 x5=5
Gastro intestinal system	3 x1=3	1x15=15	1 x5=5
Endocrine Physiology	3 x1=3		2 x5=5
Physiology of reproduction	3 x1=3		1 x5=5
Renal system	3 x1=3		1 x5=5
AETCOM(5)			1 x5=5
TOTAL	**20**	**30**	**50**

Applied questions should comprise 20 marks of each paper of 100 marks.

PAPER II –Cardiovascular system, Respiratory System& environmental system, Nerve muscle Physiology, Neurophysiology, Special sense, Integrative Physiology + AETCOM (1 SHORT NOTE)

PAPER II	**MCQs**	**LAQs**	**SAQs**
Cardiovascular system	4 x1=4	1x15=15	2x5=10
Respiratory System& environmental system	4 x1=4		2x5=10
Nerve muscle Physiology	3x1=3		1x5=5
Neurophysiology	5 x1=5	1x15-15	2x5=10
Special sense	3 x1=3		1x5=5
Integrative Physiology	1x1=1		1x5=5
AETCOM(5)			1x5=5
TOTAL	**20**	**30**	**50**

Applied questions should comprise 20 marks of each paper of 100 marks.

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS FOR PHYSIOLOGY DEPAERTMENT

VIVA	= 20 MARKS
SUBJECT EXERCISES	= 80 MARKS

Haematology	**: 20 marks**
OSPE - Skilled	: 5 marks
OSPE - Non skilled	: 5 marks
Experiment	: 10 marks
Clinical	**: 60 marks**
OSCE - Skilled	: 20 marks
OSCE - Non skilled	: 20 marks
Major	: 10 marks
2 Minor	: 10 marks
Total practical marks	**: 80 marks**
Theory Viva	**: 20 marks**

MODEL QUESTION PAPER - PAPER I& PAPER II
PHYSIOLOGY
Paper - 1

Time: Three Hours Maximum **Marks: 100**

Illustrate your answers with suitable diagrams
(General Physiology , Blood, ANS, Gastro intestinal system, Endocrine Physiology, Physiology of reproduction and Renal system, AETCOM)

Main question **(3x 10=30)**

1. a. Explain in detail about the mechanism of coagulation (7+3=10)
   b. Explain fibrinolytic system

2. a. Mechanism of formation of Thyroid hormone (5+5=10)
   b. Functions of Thyroid hormone

3. a. Define GFR (2+3+5=10)
   b. what are the factors regulating GFR
   c. Explain the regulation of GFR

3**. Explain briefly: (10X5=50)**

a) Explain secondary active transport. Give two examples.
b) Stages of erythropoiesis.
c) Tests for ovulation.
d) Describe the micturition reflex. Add a note on atonic bladder.
e) Mechanism of action of growth hormone.
f) Physiological actions of insulin
g) A 23 old women complains of constant pain in the upper part of the abdomen, the pain is worse between meals, she often wakes up with severe pain, test for occult blood in the stools were positive.
   I) What is the diagnosis?
   II) What is the physiological basis of treatment?
   III) Why does the pain worsen between meals and at night?
h) Rh incompatibility
i) Flight and fight reaction
j) How to you demonstrate empathy in a patient encounter

Paper – II

Time: Three Hours Maximum **Marks: 100**

Illustrate your answers with suitable diagrams
(Cardiovascular system, Respiratory System& environmental system, Nerve muscle Physiology, Neurophysiology, Special sense, Integrative Physiology + AETCOM)
Explain briefly **10x3=30**

1 a. Define cardiac output (2+5+3=10)

b. Discuss in detail the factors regulating the cardiac output

c. The patient develops breathlessness on lying down and is relieved on erect posture. Explain the pathophysiology of this condition.

2 a. Classify the descending tracts (2+5+3=10)

b. With a neat diagram, trace the corticospinal pathway and list the functions of this tract.

c. Write down the features of upper neuron lesion

3. a. With a neat diagram explain the visual pathways (5+5=10)

b. Explain the effects of lesions at various levels of visual pathway

4. Write short notes on **(5x10=50)**

a) Short term regulation of blood pressure.
b) Special features of coronary circulation.
c) Role of surfactant in pulmonary function. Write a note on ARDS.
d) Role of "pattern generators" in the regulation of respiration.
e) Acclimatization to high altitude. Add a note on chronic mountain sickness.
f) Describe the pain pathway. Add a note on pain gating.
g) Functions of hypothalamus.
h) Theory of Hearing. Add a note conductive deafness.
I) Excitation contraction coupling in skeletal muscle
J) Enumerate and describe professional qualities and roles of physician.

BIOCHEMISTRY

1. SUBJECT: BIOCHEMISTRY **MINIMUM MARKS FOR PASSING**

THEORY – 2 PAPERS 100 MARKS EACH		40 IN EACH PAPER
THEORY	2 X 100 = 200	100
PRACTICALS	= 100 (VIVA=20 MARKS)	50
TOTAL	= 300	150
PRACTICALS	= 80	
VIVA	=20	
TOTAL	=100	50

2. ELIGIBILITY IN INTERNAL ASSESSMENT

THEORY	= 50	20
PRACTICAL	= 50 (VIVA = 10 IF INCLUDED)	20
TOTAL	=100	50

3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs	20 x 1 MARK = 20 MARKS	
LAQs	3 x 10MARKS	= 30 MARKS
SAQs	10 x 5 MARKS	= 50 MARKS

4. DISTRIBUTION OF CONTENT:

PAPER I – Biomolecules-Structure function correlation, Cell organization, Enzymes, Extracellular matrix , Bioenergetics & Biological oxidation, Digestion & absorption of nutrients, Metabolism of carbohydrates and diabetes Mellitus, Metabolism of lipids, Influence of hormones with associated inborn errors, Integration of intermediary metabolism (including metabolism in fed & starving states), Body fluids (Blood, urine, CSF), Fluid electrolyte & acid base balance-associated disorders, Hepatobiliary,Gastric, Pancreatic function tests with interpretation of lab data, +AETCOM-Module 1.1 (What does it mean to be a doctor) (1 SHORT NOTE)

PAPER I	MCQs	LAQs	SAQs
Biomolecules-Structure function correlation, Cell organization, Extracellular matrix& Enzymes (20)	5	-	15
Digestion & absorption of nutrients (8)	3	-	5
Metabolism of carbohydrates and Diabetes Mellitus (20)	-	15	5
Metabolism of lipids and associated disorders (20)	5	15	-
Bioenergetics & Biological oxidation, Influence of hormones with associated inborn errors, Integration of intermediary metabolism (12)	2	-	10
Body fluids, Fluid electrolyte & acid base balance-associated disorders (7)	2	-	5
Hepatobiliary,Gastric, Pancreatic function tests with interpretation of lab data (8)	3	-	5
AETCOM Module 1.1 (What does it mean to be a doctor)(5)	-	-	5
TOTAL	**20**	**30**	**50**

PAPER II –Metabolism of proteins & amino acids, Hemoglobin(structure, function & hemoglobinopathies, heme synthesis & Porphyria, Heme degradation, bilirubin metabolism & Jaundice), Nucleotides (Purines &Pyrimidines – metabolism, regulation & associated disorders), Molecular Biology & human genetics, Immunology, Vitamins & Minerals, Nutrition (basic concepts, associated disorders & modifications in different clinical scenarios), Free radicals & antioxidant systems, Xenobiotics, Environmental hazards &cancer biology, Thyroid, Adrenocortical and renal function tests with interpretation of laboratory data, Instrumentation and techniques used in Biochemistry +AETCOM Module 1.2 (What does it mean to be a patient) (1 SHORT NOTE)

PAPER II	MCQs	LAQs	SAQs
Metabolism of proteins & amino acids (17)	2	15	-
Hemoglobin(structure, function & hemoglobinopathies, heme synthesis & Porphyria, Heme degradation, bilirubin metabolism & Jaundice)(13)	3	-	10
Nucleotides (Purines & Pyrimidines – metabolism, regulation & associated disorders) (8)	3	-	5
Molecular Biology & human genetics, Immunology (17)	2	15	-
Vitamins & Minerals, Nutrition (basic concepts, associated disorders & modifications in different clinical scenarios), Free radicals & antioxidant systems (17)	2	-	15
Xenobiotics, Environmental hazards &cancer biology (8)	3	-	5
Thyroid, Adrenocortical and renal function tests with interpretation of laboratory data (8)	3	-	5
Instrumentation and techniques used in Biochemistry (7)	2	-	5
AETCOM Module 1.2 (What does it mean to be a patient)(5)	-	-	5
TOTAL	**20**	**30**	**50**

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS

VIVA = 20 MARKS

SUBJECT EXERCISES (OSPE pattern) = 80 MARKS

- Performance station- Normal component of urine (2 × 8 MARKS)
- Performance station – Abnormal component of urine (2 × 8 MARKS)
- Performance station – Qualitative detection of biomolecules (1 × 8 MARKS)
- Performance station – Quantitative detection of biomolecules (1 × 8 MARKS)
- Case Scenarios (2 × 8 MARKS)
- Instruments & techniques (2 × 8 MARKS)

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BIOCHEMISTRY –Paper I

Time: 3 hours **Maximum: 100 Marks**
MCQs 20 marks

Answer **ALL** questions

I. Long Answer Questions: **(3 x 10 = 30)**

1. A 3 year old orphan was admitted with guiddiness and blurring of vision. His random serum glucose was 40 mg/dl.
   a) Mention the substrates needed for glucose synthesis in fasting state.
   b) Explain the gluconeogenesis pathway with its regulation. (2+8=10)

2. A 70 year old woman presented with muscle twitching and tetany. Her serum calcium was 7.8 mg/dl.
   a) Write the normal serum calcium levels.
   b) Explain how serum calcium is regulated in humans.
   c) What are the causes for hypocalcemia? (1+6+3=10)

3. A chronic alcoholic person was brought with complaints of edema of the legs, walking difficulty and swelling of abdomen. Ultrasound abdomen shows ascitis with no organomegaly.
   a) Mention the probable vitamin deficient in this patient
   b) Write the sources and functions of this vitamin
   c) How will you confirm the diagnosis in laboratory? (2+6+2=10)

II. Short Answer Questions: **(10 x 5 = 50)**

4. Describe the cell membrane transporters with examples. Mention the inhibitor of Na-k ATPase pump.
5. Explain the phase-II detoxification process in humans with suitable examples.
6. Classify enzymes with examples.
7. Describe the organisation of electron transport chain complexes with their functions. Mention their inhibitors.
8. Discuss the steps and applications of polymerase chain reaction.
9. 50 years old female complained severe pain in right great toe. Her serum uric acid was raised. Mention the normal serum uric acid levels. How uric acid is synthesised in humans?
10. Classify renal function tests. Describe clearance tests.
11. Write notes on anti-oxidant defence systems in humans.
12. Mention the various DNA repair mechanisms and describe any one in detail.
13. Write the rights and responsibilities of patients.

BIOCHEMISTRY Paper 2

Time: 3 hours **Maximum: 100 Marks**
MCQs 20 marks

Answer **ALL** questions

I. Long Answer Questions: **(3 x 10 = 30)**

1. A 50 years old male admitted with complaints of jaundice, altered conscious levels and sleepless nights. He had previous history of admissions for alcoholic liver disease. Presently he is diagnosed to have alcoholic hepatic encephalopathy due to hyper-ammonemia.

   a) How ammonia is synthesised and transported in humans
   b) Explain the steps involved in ammonia detoxification in liver.
   c) Enumerate the inborn errors related to ammonia detoxification. (2+6+2=10)

2. A 60 years old known diabetic came with chest pain. ECG confirmed the cardiac involvement. Serum showed hypercholesterolemia and hyper triglyceridemia.

   a) Mention the normal cholesterol and triglyceride levels
   b) Explain how dietary triglycerides are transported in humans
   c) Enumerate the various types of hyper-lipoproteinemias with their molecular defects (2+5+3=10)

3. A known diabetic had semiconscious spells with fruity smell in his breath. His serum glucose was 400 mg/dl and urine Rothera's test was positive.

   a) Write the acid base imbalance expected in this patient.
   b) How pH is regulated by Kidney?
   c) Comment on anion gap in this condition. (2+6+2=10)

II. Short Answer Questions: **(10 x 5 = 50)**

4. What is the enzyme deficiency in acute intermittent porphyria? Mention its clinical features and diagnostic tests.
5. Describe the synthesis of collagen.
6. Write in detail about how insulin regulates metabolism of nutrients in well-fed state.
7. Discuss the role of T-helper cells in immune response.
8. What are oncogenes and anti-oncogenes? How oncogenes are activated?
9. Enumerate the types and discuss the applications of electrophoresis.
10. Discuss the influence of social and economical dimensions of an illness in a patient.
11. Mention the types, causes, clinical effects and diagnostic tests of protein energy malnutrition.
12. What is the molecular defect in HbS? Describe the sickling process, clinical features and tests to diagnose the case of sickle cell anemia.
13. Discuss the secondary structure of proteins. Mention the structural changes seen in Prion disease.

PHARMACOLOGY

1. SUBJECT: PHARMACOLOGY **MINIMUM MARKS FOR PASSING**

THEORY – 2 PAPERS - 100 MARKS EACH **40 IN EACH PAPER**
THEORY 2 X 100 = 200 **100**
PRACTICALS = 100 (VIVA=20 MARKS) **50**

TOTAL = 300 **150**

PRACTICALS = 80
VIVA = 20

TOTAL =100 **50**

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2. ELIGIBILITY IN INTERNAL ASSESSMENT
THEORY = 50 **20**
PRACTICAL = 50 (VIVA = 10 IF INCLUDED) **20**

TOTAL =100 **50**

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3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs 20 x 1 = 20 MARKS
LAQs 3 x 10 = 30 MARKS
SAQs 10 x 5 = 50 MARKS

4. DISTRIBUTION OF CONTENT:

Column 1	Column 2	Column 3					Column 4				
Topics	MCQs (20x1=20marks)	LAQs (3x10=30)					SAQs(10x5=50)				
		S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
GP	4	0	1	0	1	0	2	1	2	1	3
ANS	4	1	0	1	0	1	1	3	1	3	1
CVS	4	1	1	1	1	1	1	1	1	1	1
BLOOD	4	0	0	1	0	0	3	2	1	2	2
AUTOCOIDS	2	1	0	0	0	1	0	2	2	2	0
RS	2	0	1	0	1	0	2	0	2	0	2
AETCOM	0	0	0	0	0	0	1	1	1	1	1

PAPER-I (100 marks)

I. **Multiple choice questions (MCQs) 20 x 1 = 20 MARKS**
II. **Long answer questions (LAQs) 3 x 10 = 30 MARKS**
III. **Short answer questions (SAQs) 10 x 5 = 50 MARKS**

PAPER-II (100 marks)

Column 1	Column 2	Column 3			Column 4		
Topics	**MCQs**	**LAQs (3x10=30)**			**SAQs**		
		S1	**S2**	**S3**	**S1**	**S2**	**S3**
CHEMO	5	1	1	1	3	3	3
CNS	5	1	1	1	2	2	2
HORMONES	5	0	1	0	3	1	3
GIT	3	1	0	1	0	2	0
MISCELLANEOUS	2	0	0	0	1	1	1
AETCOM	0	0	0	0	1	1	1

- The above tables contain the mark distribution in various topics in Pharmacology Paper 1 & Paper 2 respectively
- The first column represents the topics in pharmacology
- The second column depicts the numberof MCQs from each topic with 1 mark for one MCQ, totally 20 MCQs per paper
- The third and fourth columns represent the long answer questions (LAQs) and short answer questions (SAQs) with different sets (S1, S2, ...) in each respectively.
- Correlate S1 LAQs with S1 SAQs for equal mark distribution (e.g. if three LAQs were asked from 3 topics, then SAQs are to be set in such a way to allocate appropriate weightage across the topics)
- E.g: in Set 1 (S1) of paper 1, one LAQ is from ANS, one LAQ from CVS and one LAQ from autocoids hence the SAQs are to be set to give appropriate weightage across all topics.
- Similarly, correlate Set 2 (S2) LAQ with Set 2 (S2) SAQ and so on...
- The questions in LAQs and SAQs may better be structured (indicating the allotted marks for each sub-question) for more objectivity. (Refer Annexure 2 of Module MCI Competency Based Assessment)

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS (100 MARKS)

1. PRACTICAL EXERCISES = 80 MARKS

PRACTICALS –

PART A. Spotters (10 marks)

Sl No.	Topics	Marks
1.	Spotters *	10

PART-B Clinical Pharmacology (40 marks)

Sl.No	Topics	Marks
1	Prescription writing *	10
2	Prescription audit (CCR) *	10
3	Problem Solving Exercise	1 x 5 = 5
4	Adverse Drug Reactions (ADR)	1 x 5 = 5
5	Pharmacoeconomics	1 x 5 = 5
6	Dosage calculation	1 x 5 = 5

**** The Number in each may be decided by institution***

PART-C: Assessment of demonstration and communication skills # (30 marks)

Sl.No	Topics	Marks
1	CAL (Computer Assisted Learning) - **Experimental Pharmacology**	10
2	PDC (Patient Doctor Communication) - **AETCOM**	10
3	Routes of drug administration(Inhalational, Injections)**-OSPE**	10

 # Table viva optional

2. **VIVA VOCE = 20 MARKS**

1. **PRACTICAL EXERCISES = 80 MARKS**
2. **VIVA VOCE = 20 MARKS**

TOTAL (1+2) = 100 MARKS

6. MODEL QUESTION PAPER - PAPER I& PAPER II

(Set 1 was selected for both paper I and paper II)

PHARMACOLOGY- Paper I

Time: 3 hours **Maximum marks:** 100

Direction: Answer ALL Questions.

Illustrate your answers with suitable diagrams

GENERAL PHARMACOLOGY, AUTONOMIC NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, BLOOD,AUTACOIDS, RESPIRATORY SYSTEMAND AETCOM

I.MCQs (20 x 1=20 marks)

II.Long answer questions (3 x 10=30 marks)

1. A 48-year-old male came to the casualty with complaints of retrosternal chest discomfortradiating to the left shoulder following a bout of exercise. The pain was relieved on taking rest. He was diagnosed as a case of classical angina.

(1+3+4+2)

a) Write one drug that can be used to abort an acute attack of this condition.
b) Explain the mechanism of pain relief for the said drug.
c) List the adverse effects, other clinical indications and precautions to be taken for the said drug.
d) With one example each, enumerate any two drug classes for the prevention of further attacks

2. A 30-year-old male was brought to the casualty with h/o consumption of an insecticide 30 min earlier. He presented with cough, soiled clothes due to urination and defecation. On examination, he haddrooling of saliva, profuse sweating, miosis, low volume pulsewithBP (90/60 mm Hg). He was diagnosed as a case of Organophosphorus poisoning (OP).

(2+1+2+5)

a) Mention the pharmacotherapy along with the rationale for the drugs chosen to treat the above case.
b) Mention the clinical importance of "Enzyme Aging" in OP poisoning.
c) Enlist two reversible anticholinesterase drugs and their clinical indications.
d) List the adverse effects and other clinical indications of the antidote that specifically antagonises the symptoms and signs of the above condition.

3. A 44-year-old women presented to OPD with the complaints of phalangeal joint swelling and stiffness for the past 2 months. Clinical examination and serological investigations confirmed as a case of Rheumatoid arthritis **(2+4+2+2)**

a. List four DMARD agents that may be useful in the above said condition.
b. Write briefly on the mechanism of action and adverse effects of any one non biological agent.
c. Enlist two anti-inflammatory drugs for immediate pain relief with minimal GI adverse effects.
d. Brief the role of corticosteroids in the above said condition.

III.<u>Short Answer Questions (10 x 5 = 50)</u>

4. With suitable examples,state the clinical significance of 'Plasma protein binding' in relation to drug-drug interaction.

5. Differentiate type A and type B adverse drug reactions. Outline the pharmacological management of each type. **(2+3)**

6. Enumerate two drug groups with examples that arrest/reverse the disease progression in congestive cardiac failure. Briefly explain the rationale for their use and two adverse effects for each. **(1+2+2)**

7. List two cardio selective and non-selective beta-blockers. Compare and contrast the two groups. **(2+3)**

8. Briefly describe the pharmacology of any one group of drugs used in the management of dyslipidemia.

9. Mention the stepwise management of bronchial asthma based on severity. Briefly explain the mechanism of aspirin induced bronchial asthma. **(3+2)**

10. Enumerate two oral and parenteral formulations used for the management of microcytic hypochromic anaemia due to nutritional deficiency. List two clinical situations where parenteral formulations are indicated in the above said anaemia. Mention the precautions to be taken prior to the administration of the said parenteral formulation. **(2+2+1)**

11. Enumerate two fibrinolytic drugsand their adverse effects. Briefly explain the rationale behind the usage of fibrinolytics in acute myocardial infarction. **(1+1+3)**

12. Briefly explain the symptomatic drug treatment approach with their mechanism of action involved in productive and non-productive cough.

13. A 30-year-old (Gravida-2, Para-0, Live birth-0, Abortion-1) on anti-hypertensive treatment since last three years, with gestational age of 32 weeks came for routine antenatal check-up. Ultrasound scan revealed that the foetus had no cardiac activity, suggestive of intrauterine death (IUD). On detailed history it was found that she was on treatment with Tab. ENALAPRIL 10 mg BD since three years and the BP was well controlled as per the case records. The husband has a doubt whether the earlier abortion and the present loss of foetus could be due to any familial reason from his wife's side. **(1+1+1+1+1)**

a. Does the patient have the right to know about the probable cause of IUD?
b. Explain, if there is any maleficence on part of the drug treatment in relation to earlier abortion and the present foetal loss?
c. If this IUD is distinguished as an adverse event, what is your professional responsibility to a related National Program?
d. What are the shared responsibilities on the part of the patient and the physician?
e. How will you clear the husband'sdoubt empathetically?

PHARMACOLOGY- Paper II

Time: 3 hours **Maximum marks:** 100

Direction: Answer ALL Questions.

Illustrate your answers with suitable diagrams

CHEMOTHERAPY, CENTRAL NERVOUS SYSTEM, ENDOCRINE, GIT, MISCELLANEOUS AND AETCOM

I. MCQs (20 x 1 = 20 marks)

II. Long answer questions (3 x 10 = 30 marks)

1. A female patient aged 26 yrs has come to the out-patient department with one episode of generalized tonic–clonic seizure lasting for two minutes. Her liver functions are normal. She was married 6 months earlier. **(1+3+6= 10)**

a. Enlist the drugs which can be used in this condition.
b. Explain the mechanism of action, adverse effects, and other clinical uses of any one drug used in this patient.
c. With justification, enumerate the drugs that are contraindicated in this patient in case she is pregnant.

2. A 40-year-old patient, weighing 50 kg,came with h/o cough and expectoration, evening rise of temperature and loss of weight since 15days. Sputum examination and chest x-ray confirmed the diagnosis as pulmonary tuberculosis (TB). **(8+2)**

a. List the drugs that are to be administered for this newly diagnosed condition and describe the mechanism of action, adverse effects and drug interactions of any one drug.
b. Assuming this patient to be a case of drug sensitive TB, write down the recommended RNTCP regimen?

3. List the various targets of drugs used in the treatment of acid peptic disease with suitable diagrams. Discuss the MOA, uses and adverse effects of any one commonly used group. **(4+6)**

III.Short Answer Questions (10 x 5 = 50)

4. Name any two anti-HIV regimens and explain the rationale of using fixed drug regimen. **(3+2)**
5. Mention any two hormonal drugs with their indication in cancer chemotherapy along with the rationale for each. **(2+3)**
6. List any two non-benzodiazepine drugs used as anti-anxiety agents and mention the advantages of them over benzodiazepines. **(1+4)**
7. Enumerate any two oral contraceptive options available for a 26-year-old woman. Briefly describe the mechanism of action, two adverse effects and two non-contraceptive benefits of any one of the options mentioned. **(1+2+1+1)**

8. What are the advantages of using oxytocin to induce labour? Mention any two drugs and their mechanism of action used to control postpartum haemorrhage? **(2+3)**
9. Briefly describe the drug therapy of hyperprolactinemia? Mention two drugs that cause hyperprolactinemia? **(3+2)**
10. With suitable examples, list two drug classes used in the management of idiopathic parkinsonism with two adverse effects for each example. Briefly explain the rationale for two drug combinations used. **(3+2)**
11. Enumerate one oral and parenterally administered cephalosporin.Add a note on third generation cephalosporins. **(2+3)**
12. Enumerate any four drugs used in heavy metal poisoning. Outline the management of acute iron poisoning with a note on the mechanism of action of the antidote. **(2+2+1)**
13. What is the role of non-maleficence as a guiding principle in prescribing practice?

PATHOLOGY

Subject: PATHOLOGY		**Minimum marks for passing**
Theory: 2 papers	100 marks each	40 in each paper
Theory: 2x100	= 200	100
Practicals	= 100 (Viva =20 marks)	50
Total	**= 300**	**150**
Practical	= 80	
Viva	= 20	
Total	**= 100**	**50**

Eligibility in Internal Assessment:

Theory	= 50	20
Practical	= 50 (Viva=10)	20
Total	**= 100**	**50**

University Theory Distribution of Marks:

MCQ's 20x1 = 20 Marks

LAQ's 3x10 = 30 Marks

SAQ's 10x5 = 50 Marks

Distribution of Content:

Paper I:

Paper I	**MCQ's**	**LAQ's**	**SAQ's**
General Pathology(50)	10	2	4
Hematology (30)	5	1	3
Clinical Pathology and Blood banking (15)	5	-	2
AETCOM (5)	**-**	**-**	**1**
TOTAL	**20**	**30**	**50**

Paper I: General Pathology including Hematology and Clinical Pathology:

1. **General Pathology = 50 Marks**
2. **Hematology = 30 Marks**
3. **Clinical Pathology + Blood Banking = 15 Marks**
4. **AETCOM = 5 Marks**

Paper II:

Paper II	**MCQ's**	**LAQ's**	**SAQ's**
CVS, RS, GIT, HBS, Pancreas, LN and Spleen ,Urinary (50)	10	2	4
MGT, FGT, Breast, Endocrine, Musculoskeletal, Nervous system, Skin, Eye (45)	10	1	5
AETCOM (5)	-	-	1
TOTAL	**20**	**30**	**50**

Paper II:

- **Cardiovascular System**
- **Respiratory System**
- **Alimentary System including disease of Liver,**
  - **Gall bladder and exocrine Pancreas, spleen ,LN**
- **Urinary System**

= 50 marks

- **Endocrine System- Diseases of Thyroid, Adrenals,**
  - **Parathyroid, Pituitary and endocrine Pancreas**
- **Male Genital System, Female Genital System Breast, Skin, Nervous System, Eye**

= 45 marks

- **Musculoskeletal system**
- **ETCOM**

= 5 marks

UNIVERSITY PRACTICAL DISTRIBUTION OF MARKS:

Viva = 20 marks (Gen Path+ Hematology + Systemic I + Systemic II: 5 marks each)

Practicals =80 marks

1. **Problem solving exercises (8 cases, 5 marks each) = 40 marks**
   (Clinical case scenarios with slides, specimens, instruments and charts)
2. **Urine examination with clinical history : = 10 marks**
   Findings and interpretation
3. **Peripheral Smear: Stained smear is given = 10 marks**
   Reporting and Interpretation
4. **Hemoglobin estimation = 5 marks**
5. **Blood grouping = 5 marks**
6. **Histopathology slide with Clinical history: = 10 marks**
   Reporting and Discussion

Pondicherry University
Model Question Paper- Pathology- Paper I

Duration: 3 hours (including first 30 minutes for MCQ's) **Max. Marks: 100**

Instructions:

- *MCQ sheet will be collected at the end of 30 minutes.*
- *All Questions are compulsory.*
- *Draw neat and labeled diagrams, wherever necessary.*

LAQ 1: Define neoplasia. Explain the molecular basis of carcinogenesis. Write in brief about the Viral Carcinogenesis with suitable examples.

(1+5+4=10 marks)

LAQ 2: Describe the process of cutaneous wound healing. Add a note on factors affecting the wound healing. What are the complications of wound healing?

(4+3+3=10 marks)

LAQ 3: A 65-year old man presented with complaints of excruciating lower backache which had progressively worsened over the last 6 months. He also gave history of recurrent episodes of fever over the last 3 months. The X-ray of vertebral column revealed multiple punched-out lytic lesions involving the lumbar and sacral vertebral bodies. ESR was high and one of the findings on his peripheral blood film was RBC rouleux formation.

a) What is the probable diagnosis and why?
b) Explain the Pathogenesis of the disease.
c) Describe in detail the laboratory findings in this disease.
d) Add a note on biochemistry tests which are useful in this disease.

(2+3+5=10 marks)

SAQ: **(10 x 5=50 marks)**

4. Classify and differentiate the types of Pathological calcification with examples. (2+3)
5. Write the etiopathogenesis of Granulomatous Inflammation .Give examples (3+2)
6. Down Syndrome- Etiology, Clinical features and Lab tests (2+2+1)
7. Pathogenesis of Type I hypersensitivity reaction with examples (3+2)
8. Haemophilia A –Pathogenesis and Lab findings (2+3)
9. Laboratory findings in Megaloblastic Anemia
10. Chronic Myeloid Leukemia –Pathogenesis and Lab findings (2+3)
11. Erythrocyte Sedimentation Rate (ESR) –Procedure and its significance (2+3)
12. Coomb's test –Principle and applications (3 +2)
13. AETCOM Qn: How do you proceed in a case of Goitre who has come for FNAC

Pondicherry University

Model Question Paper- Pathology- Paper II

Duration: 3 hours (including first 30 minutes for MCQ's) **Max. Marks: 100**

Instructions:

- *MCQ sheet will be collected at the end of 30 minutes.*
- *All Questions are compulsory.*
- *Draw neat and labeled diagrams, wherever necessary.*

LAQ 1: A 55 year old male, chronic smoker, presented with complaints of cough, hemoptysis and weight loss. Physical examination showed signs of Cushing's syndrome. Radiological examination revealed a mass lesion in the lung. CT guided biopsy showed small cells with scant cytoplasm, fine granular chromatin with nuclear moulding.

a) What is your probable diagnosis and why?

b) Write the etiopathogenesis of the disease.

c) Write about the morphology of the affected organ.

d) Add a note on diagnostic investigations you will carry out in this condition.

(2+2+3+3=10 marks)

LAQ 2: A 35 year old chronic alcoholic male presented with anorexia, weakness, occasional hematemesis, mild jaundice and ascitis. Ultrasound abdomen showed splenomegaly and diffuse nodularity of the liver.

a) What is your probable diagnosis and why?

b) Describe the etiopathogenesis of this condition

c) Describe the morphological changes in the liver

d) What are the complications of this disease?

(2+3+3+2 =10 marks)

LAQ 3: A 55 Year old mother of 5 children presented with complaints of post-menopausal bleeding. Per speculum examination showed Ulceroproliferative lesion involving cervix that bleeds on touch.

a) What is the probable diagnosis and why?

b) Describe etiopathogenesis of the disease

c) Write the morphological findings in this condition.

(2+4+4=10 Marks)

SAQ: **(10 x 5=50 marks)**

4. Morphology of heart in Rheumatic Heart Disease
5. Gall stones – Etiopathogenesis and complications (3+2)
6. Etiopathogenesis of Colorectal carcinoma
7. Minimal Change Disease –Etiopathogenesis and morphology (3+2)
8. Seminoma
9. Papillary Carcinoma Thyroid
10. Osteosarcoma - Etiopathogenesis and morphology (3+2)
11. CSF findings in Tubercular meningitis
12. Meningioma
13. AETCOM Qn: How do you proceed with investigations in a male infertility case

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MICROBIOLOGY

1. **SUBJECT: MICROBIOLOGY**		**MINIMUM MARKS FOR PASSING**
THEORY – 2 PAPERS 100 MARKS EACH		40 IN EACH PAPER
THEORY	2 X 100 = 200	100
PRACTICALS	= 100 (VIVA=20 MARKS)	50
TOTAL	= 300	150
PRACTICALS = 80		
VIVA	=20	
TOTAL	=100	50

2. **ELIGIBILITY IN INTERNAL ASSESSMENT**	**MINIMUM MARKS FOR PASSING**
THEORY = 50	20
PRACTICAL* = 50	20
TOTAL =100	50

*VIVA = 10 (IF INCLUDED), RECORD BOOK = 5 AS IN THE GMER

3. **UNIVERSITY THEORY DISTRIBUTION OF MARKS**

Multiple Choice Questions (MCQs)	20 x 1 = 20 MARKS
Long Answer Questions (LAQs)	3 x 10 = 30 MARKS
Short Answer Questions (SAQs)	10 x 5 = 50 MARKS
TOTAL	=100 MARKS

4. **DISTRIBUTION OF CONTENT:**

PAPER I - GENERAL MICROBIOLOGY, IMMUNOLOGY, CVS& BLOOD, RESPIRATORY TRACT INFECTIONS (RTI), ZOONOTIC & MISCELLANEOUS (Z&M), AETCOM

PAPER I	MCQs	LAQs	SAQs
GENERAL MICROBIOLOGY(25)	5	10	10
IMMUNOLOGY(25)	5	10	10
CVS& B, RTI, Z&M (45) • BACTEROLOGY (20) • MYCOLOGY (5) • VIROLOGY (5) • PARASITOLOGY (5)	10	10 • BACTERIOLOGY (10)	25 • BACTERIOLOGY (10) • MYCOLOGY (5) • VIROLOGY (5) • PARASITOLOGY (5)
AETCOM(5)	---	---	5
TOTAL (100)	**20**	**30**	**50**

PAPER II – GASTROINTESTINAL AND HEPATOBILIARY (GI&HB),SKIN AND SOFT TISSUE (SST), CNS,GENITO-URINARY& SEXUALLY TRANSMITTED INFECTIONS (GU&STI),AETCOM

PAPER II	MCQs	LAQs	SAQs
GI&HB, SST, CNS, GU&STI • BACTERIOLOGY (20) • MYCOLOGY (15) • VIROLOGY (20) • PARASITOLOGY (20)	20	30 • BACTERIOLOGY (10) • VIROLOGY (10) • PARASITOLOGY (10)	45 • BACTERIOLOGY (10) • MYCOLOGY (15) • VIROLOGY (10) • PARASITOLOGY (10)
AETCOM(5)	---	---	5
TOTAL (100)	**20**	**30**	**50**

5. GUIDELINES TO INCLUDE ORGANISMS UNDER EACH COMPETENCY IN SYSTEM WISE COMPETENCIES AS PER MCI

PAPER I

GENERAL MICROBIOLOGY, IMMUNOLOGY, CVS & BLOOD, RESPIRATORY TRACT INFECTIONS (RTI), ZOONOTIC & MISCELLANEOUS (Z&M)

GENERAL MICROBIOLOGY - MI 1.1 to 1.6

History, General concepts & Scope of Microbiology
Contributors in Microbiology & their contributions
Concept of microorganisms causing infections
Sterilization and Disinfection

Introduction to Bacteriology
Eukaryotic cell & Prokaryotic cell: Structure & functions
Bacterial morphology, physiology
Taxonomy and classification
Host bacterial interactions - Definition and function of bacterial virulence factors, toxins, enzymes
Overview of bacterial infection specimen collection and laboratory diagnosis

Introduction to Virology
Taxonomy and classification of viruses
Viral morphology, replication and virion function
Host viral interactions
Overview of viral infection specimen collection and laboratory diagnosis
Introduction to Prions

Introduction to Mycology
Taxonomy and classification of fungus and fungal diseases
Morphology of fungi and reproduction
Host fungi interactions
Overview of diagnosis of fungal infections, specimen collection and laboratory diagnosis

Introduction to Protozoology and Helminthology
Taxonomy and classification of protozoans and helminthes
Concept of life cycles
Host parasitic interactions
Overview of parasitic infections, and laboratory diagnosis

Microbial genetics, Antimicrobial agents & resistance mechanisms
Epidemiology of infectious diseases
Host, parasite and environment
IMMUNOLOGY – MI 1.7 TO 1.11

Immunity
Antigens & Vaccines
Antibodies
Complement system

Organ & Cells of the Immune System
The Normal Immune Response
Hypersensitivity
Immunodeficiency & Auto immunity
Transplantation &Tumor Immunology

CVS& BLOOD STREAM INFECTIONS – MI 2.1 TO 2.7

Rheumatic fever – Streptococcus pyogenes
Endocarditis - Streptococcus viridans, Enterococci, HACEK
Viral haemorrhagic fevers - Dengue, Chickungunya, Kyasanur Forest Disease
Malaria, Filaria, Kala azar
HIV
Microbial agents causing anaemia

RESPIRATORY TRACT INFECTIONS – MI 6.1 TO 6.3

URI:
Cdithphtheriae,
Streptococcus spp
Staphylococcus spp
Influenza virus, Adenovirus, Coronavirus, Rhinovirus
Epstein Barr Virus

LRI:
TB-Mycobacterium Tuberculosis & NTM
S pneumoniae, H influenzae
Atypical Pneumonia- **Mycoplasma, Chlamydia** (psittacosis and pneumoniae) Legionella
Bordatella pertussis
Influenza virus, Parainfluenza, RSV
Aspergillusspp, Pneumocystis

ZOONOTIC DISEASES AND MISCELLANEOUS - MI 8.1 TO 8.16

Zoonotic:
Anthrax
Brucellosis
Plague
Rickettsial infections - Scrub typhus
Q fever, B burgdorferi
Leptospirosis
Misc. zoonosis: Relapsing fever, BovineTB & Cat scratch disease

Opportunistic infection:
Histoplasmacapsulatum
Penicillium
Aspergillusspp
Cryptococcus neoformans
Pneumocystis jirovecii

Cryptosporidium
Isospora belli
Cyclospora
Microsporidia
Toxoplasma gondii
Cytomegalovirus
Mycobacterium tuberculosis
MOTT complex
Legionella pneumophila
HHV-8
Human polyomavirus 2, (JC virus)

Emerging infection:
Ebola virus, Zika virus, Nipah virus, SARS virus, MERS virus, CoViD 2019

HAI- Types & Prevention
Pseudomonas spp, Acinetobacterspp, MDROs

Oncogenic viruses
Bacteriology of milk, water and air
PUO
Perinatal infections
All National health programmes are to be included with respective infectious disease.

PAPER II
GASTROINTESTINAL AND HEPATOBILIARY (GI&HB), SKIN AND SOFT TISSUE (SST), CNS, GENITO-URINARY & SEXUALLY TRANSMITTED INFECTIONS (GU&STI)

GASTROINTESTINAL AND HEPATOBILIARY SYSTEM – MI 3.1 TO 3.8

Diarrhoea:
Cholera
Enteric fever, Non typhoidal Salmonellosis
DiarrheagenicE coli and Antibioitic associated diarrhea
Viral gastroenteritis – Rotavirus, Norovirus, Calcivrus, Astro virus
Enteroviruses
Giardia
Cryptosporidium
Isospora
Cyclospora
Microsporidia

Dysentry:
Shigella, Campylobacter,Vparahemolyticus
E histolytica
Balantidium coli

Intestinal parasites:
Nematodes – Ascaris, Enterobius, Trichuris, Hookworm, Strongyloides

Trematodes - Fasciola
Cestodes – Taenia, Echinococcus, Diphyllobothrium

Food poisoning:
Bacillus cereus
Clostridium botulinum
Staphylococcus aureus
Mycotoxins

Acid peptic disease:
H pylori

Viral Hepatitis:
HAV, HEV
HBV, HDV, HCV
Yellow fever, CMV
Other causes of hepatitis - Leptospira

MUSCULOSKELETAL SYSTEM - SKIN AND SOFT TISSUE INFECTIONS – MI 4.1 TO 4.3

Staphylococcus, Streptococcus pyogenes
Clostridium perfringens, Clostridium tetani
Non sporing anaerobes - Bacteroides
Melioidosis
Leprosy
Exanthematousviral diseases: Measles, Mumps, Rubella, Varicella zoster, HSV,Parvo virus, HHV 6, HHV 7, HHV 8, Papova viruses, Pox virus
Tissue nematodes-Dracunculus, Cysticercosis, Trichinella
Superficial fungal infections &Candida albicans
Subcutaneous fungal infections
Actinomycetes and Nocardia

CENTRAL NERVOUS SYSTEM INFECTIONS (CNS) – MI 5.1 TO 5.3

Meningitis:
Streptococcus pneumoniae
Streptococcus agalactiae
Neisseria meningitidis
Haemophilusinfluenzae
Listeria
TB meningitis, and Spirochetal (T pallidum and Leptospira)
Cryptococcus
Poliovirus
Enteroviruses, Coxsackie virus, echovirus, Mumps virus and other viruses

Encephalitis:
Herpes viruses- HSV 1 and 2
Encephalitis group of Arboviruses: JE virus, West Nile fever
Rabies
Nipah virus
Slow viruses
Toxoplasmosis
Primary amoebic Meningoencephalitis (Naegleria)
Granulomatous ameobic encephalitis (Acanthamoeba andBalamuthia)
Neurocysticercosis

GENITO-URINARY SYSTEM & SEXUALLY TRANSMITTED INFECTIONS – MI 7.1 TO 7.3

STIs:
Gonorrhoea, Non GonococcalUrethritis(NGU)
Trichomonasvaginalis
Bacterial vaginosis
T pallidum
H ducreyi
Lymphogranulomavenereum – C trachomatis
Granuloma inguinale
Viral- HBV, HCV,HIV, HSV 1& 2, HPV

Urinary tract infection:
E coli, K pneumoniae, Proteus spp, Enterococcus spp,Staphylococcus saprophyticus, S agalactiae.

6. MODEL QUESTION PAPERS

PAPER I

(GENERAL MICROBIOLOGY, IMMUNOLOGY, CVS & BLOOD, RESPIRATORY TRACT INFECTIONS, ZOONOTIC & MISCELLANEOUS, AETCOM)

Time: 3 hours **Total Marks: 100**

A. Multiple Choice Questions (MCQs) **(20 X 1 mark = 20)**

B. Long Answer Questions (LAQs) **(3 x 10 marks = 30)**

1. Enumerate agents used for disinfection and antisepsis (2)
   a. Describe the process to sterilize a pair of surgical scissors (2)
   b. How do you achieve high level disinfection of a bronchoscope (3)
   c. Briefly discuss skin antisepsis (3)

2. A 10 year old boy developed difficulty in breathing and collapsed immediately following IV penicillin injection.
   a. Name the type of hypersensitivity reaction in the above case? (1)
   b. Describe the immunological mechanism of this condition. (7)
   c. Classify hypersensitivity reactions. (2)

3. A 40 year old man presented to the OPD with a history of low grade fever with evening rise of temperature and productive cough since 2 months. He had a history of loss of appetite and weight loss. His CXR showed a nodular infiltrate in the apical right upper lobe.
   a. How will you proceed in this case, according to the RNTCP algorithm?(2)
   b. Enumerate the conditions wherein sputum CBNAAT is mandated?(2)
   c. Describe in brief the pathogenesis of Pulmonary Tuberculosis (3)
   d. State the definition, genetic mechanism and method to prevent development of MDR TB?(3)

C. Short Answer Questions (SAQs) **(10 x 5 marks = 50)**

1. Draw and label the structure of a bacterial cell wall and enumerate mechanisms of bacterial virulence.
2. State the importance of primary smear examination and give five examples of infections that can be diagnosed by smear examination.
3. What is the role of Major Histocompatibility Complex in health and disease?
4. Describe the structure and functions of IgM.
5. What are the types of Hospital Acquired Infection? Enumerate Personal Protective Equipment and give its uses.
6. What is MRSA? How do you prevent the transmission of MRSA?
7. Mention the clinical types of pulmonary aspergillosis and its risk factors.
8. Write briefly the laboratory tests for the diagnosis of malaria.
9. Mention four arboviral infections prevalent in India. Describe the pathogenesis and laboratory diagnosis of dengue.
10. Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care **(AETCOM – Module no 2.2)**

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PAPER II

(GASTROINTESTINAL AND HEPATOBILIARY, SKIN AND SOFT TISSUE, CNS,GENITO-URINARY & SEXUALLY TRANSMITTED INFECTIONS, AETCOM)

Time: 3 hours **Total Marks: 100**

A. Multiple Choice Questions (MCQs) **(20 X 1 mark = 20)**

B. Long Answer Questions (LAQs) **(3 x 10 marks = 30)**

1. A 34 year old male presented with blackish discolouration of left foot, edema, crepitus with a foul smelling serous discharge following major road traffic accident.
   a. What is your probable diagnosis? Mention two common etiological agents. (1)
   b. Describe the pathogenesis and laboratory diagnosis of the above condition. (7)
   c. Outline its management. (2)

2. A 25 year old pregnant lady is admitted with complaints of fever, malaise and jaundice since 5 days. She gives a history of hospitalization 4 years ago and having received a blood transfusion. Presently, her liver enzymes are elevated; serum bilirubin is 20 mg/dl and HBsAg positive.
   a. Which marker will you test for to rule out acute infection? (1)
   b. Mention the serological markers of hepatitis B virus with their significance. (5)
   c. What are the routes of transmission of this virus? (2)
   d. How will you prevent infection of the neonate born to HBsAg positive mother? (2)

3. A 3 year old male child presented with abdominal pain and diarrhoea for the past three days. He also gave history of vomiting and diarrhoea with expulsion of worms from mouth and anus. On examination the patient had bloating, absence of bowel sounds, abdominal tenderness and palpable mass.
   a. Which parasite is most likely to cause the above condition? Enumerate three other intestinal nematodes. (2)
   b. Describe its pathogenesis and life cycle. (3+3)
   c. What is cutaneous larva migrans? (2)

C. Short Answer Questions (SAQs) **(10 x 5 marks = 50)**

1. A 25 year old male presented with an ulcer on the genitalia. Enumerate microorganisms causing a genital ulcer. Discuss the specific tests for syphilis.
2. Write briefly on the laboratory diagnosis of enteric fever.
3. A 30 year old male is suspected to have cryptococcal meningitis. How will you proceed in the laboratory to confirm the diagnosis?
4. Name fungi infecting the skin. How is dermatomycosis diagnosed in the laboratory?

5. Compare and contrast eumycotic and actinomycoticmycetoma.
6. Briefly discuss pathogenesis and immunoprophylaxis of rabies.
7. Describe the pathogenesis, complications and prophylaxis of Varicella Zoster.
8. State the life cycle of *Taeniasolium* and pathogenesis of cysticercuscellulosae.
9. Write briefly on the pathogenesis and laboratory diagnosis of hydatid disease.
10. What is informed consent? **(AETCOM – Module no 2.5)**

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7. PONDICHERRY UNIVERSITY MICROBIOLOGY PRACTICALS DISTRIBUTION OF 100 MARKS

(AS PER THE CERTIFIABLE COMPETENCIES IN THE CBME)

A. Primary smear* for diagnosis along with problem solving exercise – Urine/ Respiratory/ Pus/ Body Fluids - by **Gram Stain** = 10 marks

B. Primary smear for diagnosis along with problem solving exercise – sputum– smear positive or negative -by **ZN Stain** = 10 marks

C. Examination of parasite found in stool along with problem solving exercise - **Stool examination** = 10 marks

D. Interpretation of the fungus by KOH, growth on SDA and LPCB mount along with problem solving exercise – **Mycology** = 10 marks

E. Interpretation of two serological test along with problem solving exercise – **Serology** = 10 marks

F. Interpretation of two Antimicrobial Susceptibility Report along with problem solving exercise – **AST** = 10 marks

G. OSPE for **Hand Washing** = 10 marks

H. OSPE for **Personal Protective Equipment** = 10 marks

I. VIVA = 20 marks

*Recommended that the primary smears for gram- stain to be of GPC/ GNC/ GPB/ GNB of commonly encountered bacteria

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FORENSIC MEDICINE

1. SUBJECT: FORENSIC MEDICINE		MINIMUM MARKS FOR PASSING
THEORY – 1 PAPER OF 100 MARKS		50
THEORY	1 X 100 = 100	50
PRACTICALS	= 100 (VIVA=20 MARKS)	50
TOTAL	= 200	100
PRACTICALS	= 80	
VIVA	=20	
TOTAL	=100	50

2. ELIGIBILITY IN INTERNAL ASSESSMENT

THEORY	= 50	20
PRACTICAL	= 50 (VIVA = 10 IF INCLUDED)	20
TOTAL	=100	50

3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs 20 x 1 = 20 MARKS
LAQs 3 x 10 = 30 MARKS
SAQs 10 x 5 = 50 MARKS

4. DISTRIBUTION OF CONTENT:

PAPER I – SUBJECT TOPICS + AETCOM (1 SHORT NOTE)

SAMPLE-I	**Total**	**MCQs**	**LAQs**	**SAQs**
Forensic Pathology (Medicolegal Autopsy, Exhumation, Thanatology, Asphyxial Deaths)	17	2	10	5
Legal Procedure and Medical Jurisprudence	19	4		15
Sexual Jurisprudence	21	6	10	5
Forensic Psychiatry	06	1		5
Traumatology	16	1	10	5
Toxicology	16	6		10
AETCOM (5)	05			5
TOTAL	**100**	**20**	**30**	**50**

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS

VIVA = 20 MARKS (Four Examiners x 5 = 20 Marks)

SUBJECT EXERCISES: 20 Stations x 4 Marks = 80 MARKS

Time for each station: 5 minutes.

(1) Issue injury certificate in prescribed format.
(2) Issue drunkenness certificate with reasons.
(3) Sex determination from bones with reasons.
(4) Age determination from X-rays with reasons.
(5) Age certification from physical and dental examination with reasons.
(6) Examination of accused (potency certification) in a case of alleged sexual assault.
(7) Examination of the victim in a case of alleged sexual assault.
(8) Estimation of age of a given foetus.
(9) Prepare Viscera packing and labelling for a case of suspected poisoning.
(10) Issue Medical sickness certificate.
(11) Issue Fitness from medical leave certificate.
(12) Interpretation of autopsy report with reasons.
(13) Issue Medical Certification of Cause of Death in prescribed format.
(14) Examination of Weapon.
(15) Examination of Wet-Specimen.
(16) Examination of Photograph.
(17) Examination of a Poison.
(18) Examination of a Poison.
(19) Examination of a given Appliances.
(20) Examination of a given Autopsy instruments.

6. MODEL QUESTION PAPER - PAPER I

Forensic Medicine

Time: 3-hours Max. Marks: 100

ANSWER ALL QUESTIONS

Each Section to be answered in separate Answer Book
Illustrate your answer with suitable diagrams

1) A 16-year old unmarried girl was found hanging in her home from a ceiling fan with the help of a nylon dupatta, the ligature mark was found over anterior aspect of the neck, running obliquely to merge with the hair line posteriorly.
   a. Write about the types of hanging. 2
   b. Write the different causes of death in hanging. 2
   c. Briefly describe the post-mortem appearances in the above case with special mention about the signs of antemortem hanging. 6

2) As per an eyewitness account, one shop owner was shot at by an unknown person from a close range with a pistol on the forehead and made an escape in a motorcycle. Now answer the following questions.
   a. Classify firearm. 3
   b. Describe the composition of a rifled cartridge, with a neat labelled diagram. 3
   c. With the help of a labelled diagram, briefly describe the findings of the wound of entrance in this case. 4

3) A11-year old boy was allegedly sodomised by his neighbour. The boy later informed his parents and the matter was reported to the Police. The Police registered the case and the victim was brought to the Forensic Medicinedepartment for examination.
   a. What are the other unnatural sexual offences 1
   b. Describe the examination of a victim of non-habitual passive agent 6
   c. What are the punishment for penetrative sexual assault and aggravated penetrative sexual assault? 3

4) Write short notes on: 10x5=50 Marks
   a) Definition of rape as per Criminal Amendment Act 2013. 5
   b) Enumerate the different types of drowning and add as note on Pathophysiology of wet drowning (2+3)
   c) Describe the Civil and Criminal Responsibilities of a Mentally ill person (3+2)
   d) Medical and Medicolegal Duties of a doctor in suspected case of poisoning (2+3)
   e) Define Professional Misconduct and enumerate with five examples (1+4)
   f) Define Subpoena and describe the procedure of serving a summon (1+4)
   g) Define medical negligence and briefly describe the defences against medical negligence (1+4)
   h) Enumerate the different types of Intracranial haemorrhages and describe the intracranial haemorrhages that occurs outside the duramater (2+3)
   i) Classify organophosphorous compounds and describe the clinical manifestations of organophosphates (1+4)
   j) What is informed consent and informed refusal in relation to a surgical operation (3+2)

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COMMUNITY MEDICINE

1. SUBJECT: COMMUNITY MEDICINE MINIMUM MARKS FOR PASSING

THEORY – 2 PAPERS 100 MARKS EACH40 IN EACH PAPER

THEORY	2 X 100 = 200	100
PRACTICALS	= 100 (VIVA=20 MARKS)	50
TOTAL	= 300	150
PRACTICALS	= 80	
VIVA	= 20	
TOTAL	=100	50

2. ELIGIBILITY IN INTERNAL ASSESSMENT

THEORY	= 50	20
PRACTICAL	= 50 (VIVA = 10 IF INCLUDED)	20
TOTAL	=100	50

3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs 20 x 1 = 20 MARKS
LAQs 3 x 10 = 30 MARKS
SAQs 10 x 5 = 50 MARKS

4. DISTRIBUTION OF CONTENT:

The topics mentioned below are based on the MCI document by the Medical Council of India titled "Competency based undergraduate curriculum for Indian Medical Graduate, 2018-Volume II". The numbers mentioned in the brackets is the weightage of each of the topics out of the total of 100 marks. This weightage distribution was developed by taking an average of the weightage given by a panel of 4 subject experts independently.

PAPER I –Demography and vital statistics, Reproductive, maternal and child health, Nutrition, Concept of health and disease including history of Medicine, Relationship of social and behavioural to health and disease, General epidemiology include screening, Basic statistics and its applications, Environmental health problems include Biomedical waste, Disaster Management +AETCOM (1 SHORT NOTE)

No.	Topics as per the MCI competency list	Marks	MCQ	LAQ	SAQ
1	Demography and vital statistics (10) Reproductive, maternal and child health (20) Nutrition (10)	40	2 4 2	1	4
2	Concept of health and disease including history of Medicine (15) Relationship of social and behavioural to health and disease (5)	20	3 1	1	1
3	General epidemiology include screening (15) Basic statistics & its applications (5)	20	4 1	1	1
4	Environmental health problems include Biomedical waste 10) Disaster Management (5)	15	2 1	0	3
5	AETCOM (5)	5	-	-	1
6	Total	100	20	30	50

PAPER II – Epidemiology of communicable & non-communicable diseases, Health planning and management, Health care of the community, Principles of health promotion and education, Occupational Health, Mental health, Geriatric services, International health, Essential medicine, Recent advances in community medicineAETCOM (1 SHORT NOTE)

No.	Topics as per the MCI competency list	Marks	MCQ	LAQ	SAQ
1	Epidemiology of communicable & non-communicable diseases (30)	30	6	1	3
2	Health planning and management (10) Health care of the community (10) Principles of health promotion &education (10)	30	6	1	2
3	Occupational Health (10)	10	2	1	-
4	Mental health(5)	10	2	-	2

	Geriatric services (5)				
5	International health (5)	5	1	-	1
6	Essential medicine (5) Recent advances in Comm. Med.(5)	10	3	-	1
7	AETCOM (5)	5	-	-	1
	Total	100	20	30	50

Choose Set 1 or set 2 to design the question paper.

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS

VIVA = 20 MARKS
SUBJECT EXERCISES TOTAL = 80 MARKS
Case discussion - 40 marks
Statistics and EpidemiologicalExercises(2): 20 marks
5 Spotters: 10 marks
2 observed OSCE/ OSPE: 10 marks

Statistics: measures of central tendency, measures of dispersion, vital statistics, indicators of morbidity and mortality

Epidemiological exercises: measurement of risk in various study designs, screening tests, investigation of epidemic, assessment of vaccine requirement, indicators of specific diseases like malaria, filarial, tuberculosis, calculation of chlorine demand

Spotters: nutrition, vaccines, entomology, pesticides, disinfectants, drugs used for common illnesses like TB, diabetes, hypertension, diarrhoeal diseases, and conditions like anaemia, contraceptives, records and cards used in National Health programmes.
Questions for the spotters should be designed to assess understanding and application of the knowledge in a particular topic and not just recall.

OSCE/OSPE: communication skills to elicit specific history, Counselling skills for eg. Contraceptives, complementary nutrition, before performing lab tests, clinical skills of measuring blood pressure, measurement of height & weight and calculation & interpretation of BMI in adults, nutritional assessment in children using anthropometry and growth charts, assessment of pallor and interpretation, assessment of dehydration, examination of diabetic foot, administration of a vaccine through a specific route of administration in a simulated environment (model/ mannequin if available)

6. MODEL QUESTION PAPER - PAPER I& PAPER II

Pondicherry University
Community Medicine Paper 1

Time: 3 hours Total marks: 100

Note : All the questions are compulsory.
Draw suitable diagrams wherever necessary.

I. MCQs (1 X 20 = 20 marks)

II. Long answer questions (10 x 3 = 30 marks)

1. A 25 year ole woman approaches the PHC Medical officer regarding advice on contraceptives. Her only child is 4 weeks old and she wants to have her next child after a year.
   a. Define Family planning. Enumerate the various contraceptives. (2 + 3)
   b. Which method would you suggest for her and why? (3)
   c. What is unmet need for contraception? (2)

2. Define natural history of disease. Discuss the various levels of prevention and the modes of intervention using Diabetes as an example. Describe the iceberg phenomenon. (2+5+3=10 marks)

3. A study was conducted to find the association between tobacco use and oral cancer in which 100 cases of oral cancer were compared with 100 persons without oral cancer.
   a. What type of study is this? (1)
   b. How will you interpret the strength of association in this study? (3)
   c. What are the various types of bias that can be expected in this type of study and how can you minimise them? (6)

III. Short answer questions: (5 x 10 = 50 marks)

a) Color coding of Biomedical waste Management as per 2016 Guidelines
b) Sanitation barrier and its significance
c) Importance of triage in disaster management
d) Types of epidemic
e) Importance of incubation period
f) Demographic cycle
g) Anemiamukht Bharat
h) High risk pregnancy
i) Balanced diet
j) Role of physician in health care

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Pondicherry University
Community Medicine Paper 1

Time: 3 hours Total marks: 100

Note : All the questions are compulsory.
Draw suitable diagrams wherever necessary.

I. MCQs (1 X 20 = 20 marks)
II. Long Answer Questions(LAQs) (10 x 3 = 30marks)

1. A 26 year old woman, belonging to a nuclear family living with her husband and two children aged 4years and 2years, came to chest clinic with C/c of cough for more than 2weeks loss of appetite and lost of body weight and not responding to conventional antibiotics. There was no past h/o tuberculosis. However, the treating physician suspected Pulmonary TB and she was sent for sputum microscopy.

   (a.) Describe the latest RNTCP guidelines for classification, diagnosis and treatment for this patient. (2+3+2=8marks)
   (b.) Describe the points that are to be covered during the health education sessions to the patient. (2marks)

2. a.) Define "Objective", "Target" and "Goal". (3+4+3 =10marks)
   b.) Describe in detail the different steps in the planning cycle.
   c.) Enumerate the basic steps that are involved in the evaluation of Health Services.
3. What are the various types of Occupational diseases? Describe briefly the occupational cancers. (7+3 = 10marks)

Short Answer Questions(SAQs) (5x10=50 marks)

a. Modified Jones Criteria for the diagnosis of Rheumatic Heart Disease.
b. Specific responsibilities of World Health Organization (WHO) for establishing and promoting international standards in the field of Health.
c. Primary health care and its principles
d. Ayushman Bharat
e. Post-exposure prophylaxis in Rabies
f. Criteria for clinical diagnosis of Dengue Hemorrhagic Fever (DHF).
g. Barriers to effective Communication (during Health Education).
h. Classify the various health problems seen among the geriatric population.
i. Objectives and Strategies of National Mental Health Program .
j. What are the instances in which the confidentiality of patient information may be breached?

OTORHINOLARYNGOLOGY - MBBS THEORY,CONTENT & MARK DISTRIBUTION

SYSTEM WISE DIVISION	MCQ	LAQ	SAQ	MARKS SYSTEM-WISE
Otology	7	1	3	**32**
Rhinology	6	1	3	**31**
Oral Cavity, Pharynx,Larynx, Head & Neck	7	1	3	**32**
AETCOM	-	-	1	**5**
TOTAL MARKS	**20**	**30**	**50**	**100**

80% of the questions to be from **core topics**

MCQ's- Clinical Scenarios- 4 options with **single best response**

Timings (3 hours)

20 MCQ -30 minutes

3 LAQ - 2.30 hrs for LAQ &SAQ

10 SAQ

OTORHINOLARYNGOLOGY MBBS MODEL THEORY QUESTION PAPER

ANSWER ALL THE QUESTIONS

ILLUSTRATE YOUR ANSWERS WITH SUITABLE DIAGRAMS

Time: 2 ½ hours **Maximum Marks : 80**

1. **A 35 year old female presents with intermittent mucopurulent, non-foul smelling and profuse discharge from the left ear for 2 years, aggravated by common cold, associated with decreased hearing (1+3+3+3=10 marks)**
   a) Identify the clinical condition.
   b) Describe the clinical examination findings.
   c) How will you evaluate this patient?
   d) Discuss the medical and surgical management of this patient.

2. **A patient with carcinoma larynx presents to emergency department with respiratory distress and noisy breathing (1+4+5=10 marks)**
   a) What is the immediate surgical procedure to relieve his symptoms?
   b) Describe the steps of the above surgical procedure.
   c) Discuss the differential diagnosis of stridor in adults.

3. **Thirty year old gentleman with persistentnasal obstruction is diagnosed to have deviated nasal septum. (4+3+3=10 marks)**
   a) What are the surgical options for this condition with their indications & differences?
   b) Discuss the complications of the septal surgeries.
   c) Describe the etiopathology & complications of septal deviation.

4. Write Short notes on (10x5=50 Marks)

A. Illustrate the medial wall of middle ear? What are its clinical implications?
B. Discuss the pathology and management of Benign Paroxysmal Positional Vertigo.
C. How will you manage a 2 year old child with congenital hearing loss?
D. Outline the management of persistent epistaxis in a 50 year old gentleman.
E. Tabulate the difference between antrochoanal polyp and Ethmoidal polyps in terms of etiology, clinical features and management.
F. How will you investigate and treat a patient with CSF rhinorrhea?
G. What is the etiopathology and management of Zenker's diverticulum?
H. How will you evaluate a patient present with white patch on tonsils?
I. Explain the pathways of spread and management of Nasopharyngeal angiofibroma.
J. How will you counsel the parents of a 6 year old child posted for denotonsillectomy?

OTORHINOLARYNGOLOGY MBBS PRACTICAL MARK DISTRIBUTION

PRACTICAL

SL.NO		MARKS	TIMING
1	1 Long Case	1x35= 35 marks	20 minutes
2	1 Short case	1x25= 25 marks	10 minutes
			Total – 30 minutes
3	4 OSCE (Spotter and Skill assessment)	4 x5= 20 marks	5 Minutes each
			Total 20 minutes
TOTAL		**80 Marks**	**50 Minutes**

ORALS

ORAL	MARKS
Instruments	5
X-rays	5
Osteology/Specimen	5
VIVA	5
TOTAL	**20 marks**

OPHTHALMOLOGY

THEORY EXAM 100 MARKS

MCQ: 1 x 20 = 20MARKS (10 Anterior segment+ 10 Posterior segment)

LAQ: 3 x 10= 30 MARKS

SAQ: 10 x 5 = 50 MARKS

LAQ –3 *10= 30 marks

1) CORNEA:

Corneal ulcer – Bacterial, Fungal, Viral, Keratoplasty

2)LENS:

Congenital and acquired cataract, its management and complications

3) GLAUCOMA:

Primary open angle glaucoma

Primary angle closure glaucoma

Congenital glaucoma

4) Uvea:

Anterior Uveitis

5) Lacrimal Apparatus:

Congenital and Acquired Dacryocystitis

6) Acute Red eye:

Conjunctiva/Cornea/Glaucoma/Iridocyclitis

7) RETINA:

Diabetic Retinopathy, Retinal detachment, Retinoblastoma, Retinitis Pigmentosa, Central Retinal Artery Occlusion, Central Retinal Vein Occlusion

8) NEURO OPHTHALMOLOGY:

Visual pathway and its lesions, Optic neuritis, Papilledema, Optic atrophy

9) OCULAR TRAUMA:

Blunt trauma

10) REFRACTION AND OTHER ANOMALIES:

Myopia

11) COMMUNITY OPHTHALMOLOGY:

National Programme for Control of Blindness, Eye Banking

SAQ: 10 X 5 = 50 marks

1) EMBRYOLOGY, ANATOMY AND PHYSIOLOGY:

Development of lens and retina, Wald's visual cycle, Aqueous Humour secretion & Drainage, Accommodation

2) LIDS:

Ptosis, Entropion, Ectropion, Lagophthalmos, Symblepharon, Trichiasis, Blepharitis, HordeolumInternum, HordeolumExternum, Chalazion

3)ORBIT:

Proptosis, Pre-septal and Orbital cellulitits,

4) LACRIMAL APPARATUS:

Dacryocystitis (Acute, Chronic, Congenital)

5) CONJUNCTIVA:

Infective, Allergic, Cicatricial, Pingecula, Pterygium, Symblepharon, Sub-conjunctivalH'age, Bitot's Spots

6) SCLERA:

Episcleritis, scleritis, staphyloma

7)CORNEA:

Corneal Ulcer – Clinical features/ Complications/Management, Corneal opacity, Keratoconus, Interstitial keratitis, Pannus

8)LENS:

Complicated Cataract, Traumatic Cataract, After Cataract, Management of Congenital Cataract, Endophthalmitis, Panophthalmitis, Subluxation and Dislocation of lens, Intra-Ocular Lenses, Lens induced Glaucoma

9)UVEA:

Anterior uveitis – Keratic Precipitates/ Iris nodules/Complications of Anterior Uveitis/ Management of Anterior Uveitis/ Hypopyon, Sympathetic Ophthalmitis, PhthysisBulbi

10) GLAUCOMA:

Lens induced glaucoma, Malignant glaucoma, Anti- glaucoma medications, Field defects in Glaucoma, Clinical features of PACG (Primary angle closure Glaucoma), Buphthalmos

11)VITREOUS:

Vitreous haemorrhage, AstroidHyalosis, SynchisisScintillans

12)RETINA:

Diabetic Retinopathy – Clinical Features of DR/ Treatment of DR, Retinal Artery Occlusion, Retinal Vein Occlusion, Hypertensive Retinopathy, Retinopathy of prematurity, Retinitis Pigmentosa, Central Serous Retinopathy,Cystoid Macular Edema , Age Related Macular Degeneration, HIV Retinopathy

13) NEURO OPHTHALMOLOGY:

Marcus Gunn Pupil, Toxic/ Nutritional Optic Neuropathy.

14) OCULAR INJURIES:

Berlins Edema, Chemical injuries, Sympathetic Ophthalmitis

15) REFRACTION AND OTHER ANOMALIES:

Hypermetropia, Astigmatism, Presbyopia, Aphakia, Contact Lens, Surgical Management of Myopia

16) COMMUNITY OPHTHALMOLOGY:

Childhood Blindness, Corneal Blindness, Legal Blindness, Vision 2020, Vitamin A Deficiency, School Eye Screening, District Blindness Control Society, Rehabilitation of the Blind

17) MISCELLANEOUS:

Ocular manifestations of systemic disorders – Thyroid/DM/TB/Leprosy/Syphilis/HIV, Lasers in Ophthalmology, Ocular Pharmacology

18) AETCOM:

OPHTHALMOLOGY - MODEL QESTION PAPER

THEORY -100 MARKS

MCQ's: 1x20 = 20 MARKS

LAQ: 3 x 10 = 30 MARKS

SAQ: 10 x 5 = 50 MARKS

I) LAQ – 1 *10 = 30 MARKS :

I) A 60 year old male patient presents to the OPD with complaints of painless progressive dimision of vision for past two years.

a) Ennumerate the causes for the same (1 mark)

b) Senile cataract - Discuss the etiology, symptoms, signs, stages and investigations (4marks)

c) What are the different types of cataract surgery? Write the steps of Small incision / Phacoemulsification cataract surgery (4 marks)

d) List the post operative complications (1 mark)

II) A 55 year old male patient who is a farmer by occupation, presented to the OPD with complaints of sudden onset of pain, redness and defective vision in right eye for 2 day duration. He gives a H/O injury with vegetative matter 2 days prior to the onset of complaints. He is a known diabetic of 20 years duration on irregular treatment.

a) What is the most probable diagnosis? 2 marks

b) Describe the classification and clinical features? 4 marks

c) Describe the treatment modalities? 4 marks

III) A mother brings her 3 year old child to the OPD with complaints of white reflex in both eyes.

a) Enumerate the differential diagnosis of white reflex in both eyes. 2 marks
b) Discuss the heredity, clinical features & management of retinoblastoma.

(1+4+3 = 8 marks)

III) SAQ – 10 x 5 MARKS =50 MARKS

1) A 50 year old male patientcame with complaints of painless defective vision in the right eye, for 5 years. On examination, visual acuity in (RE)is PL+ and PR accurate.There is a total leucomatous corneal opacity in (RE).Ultrasound of (RE) shows attached retina.

a) What are the causes for corneal opacity?
b) What are the treatment options to restore vision in this patient?
c) What are the indications and contra indications of eye donation?
d) What are the methods of corneal preservation?

2) A 62 year old female patient presented to the casualty with complaints of sudden onset of severepain, redness and defective vision in the Right eye. She also gave a history of developing the above complaints, while she was watching movie in a dimly illuminated room.

a)What is your most probable diagnosis ?
b) What are the signs and symptoms?
c) How will you differentiate the above condition from acute iridocyclitis?
d) What is the immediate treatment?
e) What is the definitive treatment?

3) 20 days old newborn is bought to the OPD with complaints of redness, purulent discharge, and lid swelling of two days duration.
a)What is the differential diagnosis of the above condition?
b) What are the causative organisms and incubation period?
c) What is the treatment?

4) A 30 year old female came to the OPD with complaints of forward protrusion of eyeballs of 1 month duration .It was painless in nature and not associated with defective vision.
a)What is the differential diagnosis?
b) How will you investigate this patient?
5) Describe the development of lens.
6) 10 year old boy came with history of injury with cricket ball and came pain redress and defective vision
a) What are the ocular manifestations of blunt trauma?
7) What is Vision 2020
a) What are the goals and objectives?
b) What is the expected blindness rate by 2020 and measures to achieve this rate?

8) A 68 year old female patient complains of inability to see objects coming from either side.On examination of the visual field, patient has right homonymous hemianopia with sparing of macular vision
   a) Where is the site of lesion?
   b) Draw the visual pathway and describe the lesions at various levels.
9) A 7 year old child complains of inability to see the blackboard but has no problem in reading her books.
   a) What is the refractive error she has?
   b) What are the clinical types and various treatment modalities for this condition?
10) What are the instances in which confidentiality of patient information may be breached?

OPHTHALMOLOGY –PRACTICALS - 100 MARKS

Long cases 1: 2 x 30 = 60 marks

OSCE 10:10 x 2 = 20 marks

Viva: = 20 marks

Total: 100 marks

GENERAL MEDICINE

1. SUBJECT: GENERAL MEDICINE		MINIMUM MARKS FOR PASSING
THEORY – 2 PAPERS 100 MARKS EACH		40 IN EACH PAPER
THEORY	2 X 100 = 200	100
PRACTICALS	= 200 (VIVA=40 MARKS)	100
TOTAL	= 400	200
PRACTICALS = 160		
VIVA	= 40	
TOTAL	= 200	100

2. ELIGIBILITY IN INTERNAL ASSESSMENT

THEORY	= 50	20
PRACTICAL	= 50 (VIVA = 10 IF INCLUDED)	20
TOTAL	=100	50

3. UNIVERSITY THEORY DISTRIBUTION OF MARKS

MCQs 20 x 1 = 20 MARKS
LAQs 3 x 10 = 30 MARKS
SAQs 10 x 5 = 50 MARKS

4. DISTRIBUTION OF CONTENT:

PAPER I – SYSTEMIC MEDICINE +AETCOM

PAPER I	**MCQs**	**LAQs**	**SAQs**
CARDIOLOGY	2	1	1
NEUROLOGY	4	1	1
GASTROENTEROLOGY & LIVER DISEASE	4		2
RESPIRATORY SYSTEM	4	1	1
NEPHROLOGY & FLUID AND ELECTROLYTES	4		2
CARDINAL SYMPTOMS	2		2
AETCOM			1
TOTAL	**20**	**30**	**50**

PAPER II – TROPICAL MEDICINE, INFECTIOUS DISEASE INCLUDING TUBERCULOSIS, DERMATOLOGY AND LEPROSY, PSYCHIATRY AND CRITICAL CARE MEDICINE + AETCOM

PAPER II	**MCQs**	**LAQs**	**SAQs**
TROPICAL & ENVIRONMENTAL MEDICINE	3		1
INFECTIOUS DISEASE, TUBERCULOSIS	1	1	
ENDOCRINOLOGY & DIABETES	1	1	
HEMATOLOGY	1	1	
GERIATRICS/GENETICS	2		1
NUTRITION	2		1
IMMUNOLOGY & MUSCULOSKELETAL	3		1
CRITICAL CARE MEDICINE	2		1
DERMATOLOGY,STD,LEPROSY	3		2
PSYCHIATRY	2		2
AETCOM			1
TOTAL	**20**	**30**	**50**

MODEL QUESTION PAPER
GENERAL MEDICINE – PAPER I (SYSTEMIC MEDICINE)
TOTAL MARKS: 100 MARKS **TIME : 3 HOURS (30 MINS FOR MCQS)**

LONG ANSWER QUESTIONS **3 X 10 = 30MARKS**

1. Describe the etiopathogenesis, clinical features,investigations and treatment of infective endocarditis. [3+3+2+2= 10]
2. 47 year old car driver brought to the casualty with history of generalised seizures since past one hour with no such past history. On examination he was drowsy, with laboured breathing and having continuous seizures. [1+3+4+2=10]
   I. What is the diagnosis?
   II. List out common precipitating factors for it.
   III. Describe how you will manage this patient.
   IV. What are the complications of this condition?

3. Elaborate on pathophysiology, clinical features, investigations and management of COPD. [2+3+2+3= 10]

SHORT ANSWER QUESTIONS **10 X 5 = 50 MARKS**

1. Write about the causes/risk factors, clinical features and treatment of pyelonephritis.
2. Enumerate the role of fibrin-specific thrombolytic therapy in ST-elevatedacute myocardial infarction,contraindications and for complications of thrombolytic therapy.
3. What are the causes of cirrhosis? Write a note on the etiopathogenesis of NASH.
4. Write a step wise approach (clinical/biochemical parameters) in evaluation of hypokalemia.
5. Explain the etiopathogenesis, clinical features and treatment of pneumonia.
6. Thirty five year old male brought with leg swelling and breathlessness to hospital diagnosed as CKD.
   a) How will you counsel about the financial expenses ?
   b) Write about medico legal ethics in human organ transplantation
7. Define syncope and write the causes and evaluation of syncope.
8. Describe the clinical manifestations, immuno-pathogenesis and treatmentofGuillainBarré Syndrome.
9. How to approach a patient with cyanosis?
10. Compare and contrast clinical features and management of Ulcerative colitis and Crohn's disease.

GENERAL MEDICINE – PAPER II

(TROPICAL MEDICINE, INFECTIOUS DISEASE INCLUDING TUBERCULOSIS, DERMATOLOGY AND LEPROSY, PSYCHIATRY AND CRITICAL CARE MEDICINE)

MARKS : 50 SYSTEMIC MEDICINE +50 MARKS ALLIED SUBJECTS TIME: 3 HOURS(30 MINS FOR MCQS)

LONG ANSWER TYPE QUESTIONS **3 X 10 = 30 MARKS**

1. A 20-year-old male was admitted with fever and headache for 10 days. He had history of recurrent episodes of vomiting. On clinical examination, he was disoriented, had diplopia and neck stiffness. [1+3+4+2=10]
    a. What is the most probable diagnosis?
    b. Discuss the investigations with their interpretation that will help clinch the diagnosis.
    c. What is the treatment of this disease?
    d. List four complications of this disease.

2. A 65-year-old man was brought to casualty in an unconscious state. He is a diabetic for 10 years and stopped his medications a week back. He also had vomiting & abdominal pain for 2 days. On examination, he was drowsy and dehydrated, with a pulse rate of 110/min and BP of 90/60 mm of Hg. His blood glucose was 685 mg/dl. [2+3+3+2=10]

    a. What are the two diagnostic possibilities?
    b. Describe the pathogenesis of any one of the diagnosis.
    c. Discuss the clinical features of the above diagnosis mentioned in (b).
    d. How will you manage the condition you described in (b)?

3. A 22 yr old female presented with chronic diarrhea and pins and prick sensation in both her lower limbs.On examination she had mild icterus and severe pallor. [2+3+3+2= 10]

    a. What is the most probable diagnosis and its causes?
    b. How to evaluate the patient?
    c. What will be the peripheral smear picture in this patient?
    d. How to treat this patient?

SHORT ANSWER TYPE QUESTIONS **10X 5 = 50MARKS**

1. Geriatric rehabilitation.
2. What are the diseases which can mimic schizophrenia? Explain some of the antipsychotics used in schizophrenia with their side effects.
3. How will you confirm and manage a patient who presented with a hypopigmented , anaesthetic patch on his forearm?
4. How to approach a patient presenting with genital ulcer?

5. How will you evaluate a patient with hypotension and explain why noradrenaline is the preferred vasopressor in septic shock.
6. How should a doctor deal with the emotions of patients and family facing death? Can doctors assist death?
7. How do you evaluate a patient with significant unintentional weight loss?
8. Explain the pathogenesis of Rheumatoid arthritis. Enumerate the extra-articular manifestation of rheumatoid arthritis.
9. Define fever and hyperthermia.Enumerate the causes and treatment of hyperthermia.
10. What are the psychiatric aspects of alcohol use disorder?

5. UNIVERSITY PRACTICALS DISTRIBUTION OF MARKS

VIVA = 40 MARKS

SUBJECT EXERCISES = 160 MARKS

1. LONG CASE= 60 MARKS
2. SHORT CASE= 2 X 30 = 60
3. OSCE= 20 (SKILLED) +20 (UNSKILLED) = 40 MARKS

6. MODEL QUESTION PAPER - PAPER I& PAPER II

----------X----------

SURGERY

Paper I

MCQ 20 Marks
LAQ 10 X 3 = 30Marks
SAQ 5 X 10 = 50 Marks

General surgery
Surgical Principles
Wound healing
Special infections
Trauma, blood transfusion
Burns
General oncology
Breast & Endocrine
Surgical Care (Minor Procedures)
Paediatric surgery
Plastic surgery

Paper II

MCQ 20 Marks
LAQ 3 X 10 = 30 Marks
SAQ 10 X 5 = 50 Marks

GI surgery
Urology
Neurosurgery
CTVS
Radiotherapy
Physical medicine
Radiology
Orthopaedics
Anesthesia
Dentistry

Model Paper 1

MCQ 20 Marks

Q. No.	Questions	Marks	Subject section
1	1. A 70-year-old man has been sent to the emergency department from a nursing home, complaining of intermittent sharp abdominal pain. He has not opened his bowels for 5 days. He suffered a major stroke in the past and requires constant nursing care. He has a history of chronic constipation. Previous medical history includes chronic obstructive airways disease for which he is on regular inhalers. He is allergic to penicillin and is an ex-smoker. His blood pressure is 110/74mmHg and the pulse rate is 112/min. His temperature is 37.8°C. There is gross abdominal distension with tenderness, most marked on the left-hand side. The abdomen is resonant to percussion and digital rectal examination reveals an empty rectum.		Gen Surg
	a) What would the abdominal X-ray show b) What other radiological investigation could be employed if the diagnosis was in doubt c) How should the patient be managed d) What is the explanation for the pathology	1 2 4 3	
2	2. A 40-year-old woman has been referred to the surgical outpatients with a painless lump in the neck. She had noticed the lump 2 weeks previously when looking in the mirror. She had not noticed any other lumps and does not complain of any other symptoms. She has not gained or lost any weight recently and her bowel habit has remained normal. Examination reveals a solitary 2 x 2cm swelling to the left of the midline just above the manubrium. The swelling is firm, smooth and fixed. The swelling moves on swallowing, but does not move on protrusion of the tongue. There are no associated palpable lymph glands. General examination reveals no further abnormalities. a) What is the differential diagnosis for a lump in the anterior triangle of the neck b) Where is this lump likely to be originating from c) What steps would you take in the assessment of this lump d) Which factors may suggest malignancy e) What are the commonest types of malignancy	 2 1 3 2 2	Endocrine

3	1. 60 year old male presents with palpable lump in the right hypochondrium associated with jaundice a. What is the probable diagnosis and other significant clinical features b. Discuss the evaluation of this patient c. Discuss in brief the treatment options	3 4 3	Gen Surg/GI
4.a.	30 year bank employee met with road traffic accident is being resuscitated in emergency department received 8 units of blood transfusion within 2 hours, discuss the complications	5	Blood trans
b.	65 year old male presents with dribbling of urine with suprapubic fullness, describe the management	5	Uro
c.	45 year old female presents with 2cm by 3 cm lump in right breast, discuss the evaluation	5	Breast
d.	5 year old child presents to ED with history of swallowing two battery cells half an hour back with no other complaints, discuss the management	5	Paed
e.	26 year male comes with a clean ulcer over the left leg of 5 x 8 cm, what is the appropriate management	5	Plast /Gen,
f.	Young female of 23 years presents to OPD with a3cm by 3cm nodule in the right lobe of thyroid with a prescription of L-thyroxine 50 micrograms from a practitioner, discuss the evaluation and management	5	Endo
g.	8 week child with projectile vomiting for last 4 days dehydrated and emaciated as brought to surgery OPD, with a visible peristalsis what is the diagnosis, discuss the treatment in brief	5	Paed Surg
h.	Explain to the patient who is undergoing below knee amputation	5	AETCOM
i.	Explain to the patient who is undergoing abdominoperineal resection for Ca Rectum management of colostomy	5	Do
j.	Describe the management of a tense swollen right leg following a snake bite	5	Gen

Model Paper 2

MCQ 20 Marks

1	A 38-year-old computer engineer is referred to surgical outpatients complaining of pain in the right groin. He has noticed this over the last few months and his pain is worse on exertion. He has also noticed an intermittent swelling He is a smoker of 25 cigarettes per day and drinks 10 units of alcohol per week. He is apyrexial with normal blood pressure and pulse. The abdomen is grossly normal but there is some tenderness in the right groin. The patient is asked to stand. In the right groin, there is a swelling which is more pronounced when the patient coughs. The other groin and the scrotal examination are normal. a) What is the likely diagnosis b) What are the anatomical boundaries c) What are the complications associated with this condition d) How should the patient be treated	 2 2 3 3	Genito urinary
2	A 22-year-old woman presents to the emergency department complaining of lower abdominal pain. This has steadily increased in severity over the previous 24h and woke her from her sleep. The pain is constant, and simple analgesia has not helped. She has vomited once in the department. Her menses are regular and she is now on day 12 of her cycle. There is no history of vaginal discharge or urinary symptoms. She has no children. She has not undergone any previous surgery. There is no other relevant medical history. She takes no current medication and has no allergies. She is a non-smoker. On examination Her blood pressure is 110/72mmHg and pulse rate is 110/min. Her temperature is 38.2°C and there is lower abdominal tenderness, more marked in the right iliac fossa, with some rebound tenderness. There are no palpable masses and the loins are not tender. Digital rectal examination is normal. Bimanual per vaginal examination reveals adnexal tenderness on the right. a) What is the differential diagnosis b) How should the patient be managed initially c) If you are unsure of the diagnosis, how should you proceed	 2 3 5	GI
3	46-year-old shop keeper presents to OPD with pain and bogginess of the limbs over the day a) What is the most likely clinical conditi on b) What are the relevant investigations c) Outline the treatment plan	 2 4 4	Vascular
4.a	56 Year old male presents with history of blood and mucus in the stools for the last two months, briefly discuss the evaluation	5	GI
b	42 year old dye worker presents with painless hematuria of 3 weeks duration,describe the possible differential diagnosis and evaluation	5	Urology
c	Following laparoscopic appendicectomy a college student presents with an ugly scar over the umbilical port site, what is the diagnosis and how will you manage	5	Plast /Gen

d	36 year old steno presents with a 3 cm sized swelling over the left wrist discuss the etiopathology and management	5	Plast /Gen
e	An intern in an ICU inadvertently added KCL ampoule to a Ringer lactate drip which is about to be started, what is the consequence and what is the composition of the solution	5	Anesthesia &CC
f	Explain the pathology and management of a patient with a dinner fork deformity after fall on outstretched hand	5	Ortho
g	Describe the method of scrubbing before an operative procedure	5	Gen
h	A patient with a diagnosis of intestinal obstruction how will you pass the Ryle's tube	5	Gen/GI
i	In the operation theatre the scissor slipped from the surgeon's hand how will you sterilise it before using it again, describe the properties of the agent /method used	5	Gen Princi
j	Explain to the relatives of a young man who is a polytrauma patient being managed in a high dependency ICU following surgery whose condition is critical	5	AETCOM

General Surgery Practical Examination

Long case : 1 x 50 = 50 Marks
Short case : 2 x 25 = 50 Marks
Oral (Viva-voice) : 4 x 10 = 40 Marks
OSCE : 4 X 15 = 60 Marks

Total : 200 Marks

OBG

Theory exam- total marks 200

Paper I- Obstetrics including social obstetrics and demography - maximum marks -100

Paper II- Gynaecology including family welfare - maximum marks -100

MCQ-20*1=20 marks

LAQ- 10*3=30 marks

SAQ- 10*5=50 marks

Practical examination Total marks -200

Subsections	**Marks allotted**
OSPE/OSCE	60
CLINICAL EXAMINATION Obs. Long Case Gynaec.LongCase	 50 50
ORAL EXAMINATION (Structured) Obs Gynae	 20 20

FINAL YEAR MBBS EXAMINATION

MODEL QUESTION PAPER

PAPER – I

(OBSTETRICS INCLUDING SOCIAL OBSTETRICS)

Time: 3 hours Maximum: 100 Marks

(including MCQs)

Draw neat diagrams where necessary. All questions are compulsory

3X10 30 marks

I. A 32 years old Gravida 3 Abortion 2 is at38 weeks of gestation with GDM on Insulin

How will you manage this patient during labor ? 5 marks
How will you do periconceptional counselling in a women with type II DM ? 5marks

II. 25 years primigravida presents to the antenatal clinic at 36 weeks with over distended uterus

a)List the causes of uterus being more than gestational age. 3 marks
b)Outline the management in dichorionic diamniotic twin pregnancy 7 marks

III. A 34 year old primiparous lady had operative vaginal delivery with perineal lacerations . Her labour was induced afterprolonged prelabour rupture of membranes . Three days post delivery she presented with history of fever of 39 degree centigrade for past 24 hours.

a)Write the diagnosis and causes for fever. 4marks
b) how will you manage this case? 6 marks

IV. Write short answers for the following: **(5X10=50)**

1. Write briefly on the cardiovascular changes in normal pregnancy (5)

2. A 25 year old second gravid is not compliant with oral iron and her hemoglobin is 9 gm%. How will provide Iron therapy to this patient? (5)

3. A 35 year old primigravida comes to casualty with B P of 170/110. Investigations suggest HELLP Syndrome. How will you diagnose and manage this patient? (2+3=5)

4. Define and enumerate the causes of maternal mortality (2+3=5)

5. A primigravida reports to the ante natal clinic at 8 weeks of gestation. What schedule of antenatal care would you advise her? What are the advantages of ante natal care? (2+3=5)

6. A patient in prolonged labour has excessive bleeding half an hour after delivery. What is the diagnosis? What measures are taken to prevent atonic postpartum hemorrhage? (1+4=5)

7. What are the indications and pre requisites for Prophylactic outlet forceps (3+2=5)

8. A primigravida presents with lower abdominal pain a with positive urine pregnancy test. Ultrasound reveals tubal ectopic pregnancy. Patient does not want surgical management. What is the non surgical method of managing this patient? (5)

9. What are the principles of newborn resuscitation? (5)

10. Prostaglandins for induction of labor. (5)

FINAL YEAR MBBS EXAMINATION

MODEL QUESTION PAPER

PAPER – II

(GYNAECOLOGY INCLUDING FAMILY WELFARE)

Time: 3 hours Maximum: 100 Marks
(including MCQs)

Draw neat diagrams where necessary. All questions are compulsory

3X10 30 marks

I. 32 years old lady married since 10 years presents with inability to conceive (2+3+5=10)

a) Define infertility .
b) Enumerate the causes of female infertility.
c) What are the tests for ovulation?

II. 60 year oldpost menopausal woman complaints of irregular bleeding per vaginum of 15 days duration. Examination reveals a friable mass of 3cms limited to the cervix.

a) How will you evaluate this mass (1)

b)What is FIGO staging for cancer cervix? (5)

c) what are the treatment modalities available for this patient (4)

III.

a)define and write minimum criteria to diagnose acute PID (3)

b) Enumerate the complications and sequelae of acute PID (4)

c) write the outpatient treatment in acute PID (3)

IV. Write short answers for the following(5X10=50)

1. What are the medico legal aspects of Medical Termination of Pregnancy? (5)
2. What are the non contraceptive advantages of the combined oral contraceptive pill? (5)
3. A 55 years old lady who attained menopause 3 years ago presents with hot flushes, irritability and cardiovascular complaints. What are the merits and demerits of Hormone Replacement Therapy (HRT) in this patient? (5)
4. A 17 year old girl presents with history suggestive of primary amenorrhoea and on general examination was found to be normal with normal sexual development. What are the causes of cryptomenorhoea? What is the management of imperforate hymen

(2+3=5)

5. A 25years old Primipara had an unprotected sexual contact. What are the methods of emergency contraception in this patient? (5)
6. A 22 years old woman presents with congestive dysmenorrhoea and dyspareunia. She underwent laparoscopy and found to have moderate endometriosis. What is the medical management of this condition? (5)
7. What are the clinical features trichomoniasis and how will you treat this condition in a 40 years old sexually active woman. (2+3=5)
8. A19 years old presents with lower abdominal pain of one month duration. Clinical examination reveals a cystic mass in left adenexa and ultrasound shows a 8 cm cyst with fat and doubtful calcified elements. What is your diagnosis and management? (1+4=5)
9. Write the FIGO classification of abnormal uterine bleeding? (5)
10. What are all the genital tract injuries during child birth? How will you prevent perineal tears? (2+3=5)

Practical examination Total marks -200

Subsections	Marks allotted
OSPE/OSCE	60
CLINICAL EXAMINATION Obs. Long Case Gynaec.LongCase	 50 50
ORAL EXAMINATION (Structured) Obs Gynae	 20 20

The **long case**should be examined in a objective structured way under the following headings on the basis of presentation of history, physical examination, appropriate investigations in a logical sequence, appropriate management and clinical acumen.

Viva topics:ORAL EXAMINATION (Structured)

1. Family planning - 10 marks
2. Operative procedures - 10 marks } GYN

3. AETCOM - 10 marks
4. Dummy and Pelvis - 10 marks } OBS

OSPE / OSCE

There will be 8 static non observed stations, and 4 interactive/ observed stations. Out of the total 12 stations 6 will be of Obstetrics and 6 will be of Gynecology. The time allotted to each station will be 5 minutes.

DETAILED INSTRUCTIONS

1. The candidates must display their exam numbers on their white coats throughout the examination.
2. Answer sheet: ● Prior to entering the examination hall each candidate will be provided with aanswer sheet. Candidates must write their roll number on the response sheet before starting examination. ● The candidate will only carry his/her response sheet while rotating through the stations. No other papers will be allowed in the examination hall.
3. The candidate is not supposed to remove any document or material from any station.
4. Each station will carry equal weightage. Every station must be attempted.
5. A specified time will be allotted at each station which will be signaled by a bell.

6. Candidates are not allowed to bring mobile phones in the Examination Hall.

Conduct of Examination

1. The examination is in the form of a circuit. At the start the candidate would occupy the station allocated to him / her according to their roll number, and will move to the next station when the bell rings.

2. At these stations clear instructions would be written for performance of a task. The candidate is expected to read the instructions and act accordingly.

   On unobserved / static stations the candidate will be presented with a clinical case, laboratory data, x-ray, ultrasound, CT scan, instrument, specimen etc. and will be asked to give written responses to questions asked.

   In the observed / interactive stations the candidate will have to perform a procedure for example taking history, performing clinical examination, counseling, assembling an instrument etc. One examiner will be present at each such station and will either rate the performance of the candidate or ask questions testing the reasoning and problem-solving skills.

3. The performance of each candidate will be assessed by the examiners on a pre determined assessment form and the candidates will have to submit written responses to one-best / short answer questions in the response sheet.

4. Candidates will rotate through the stations in this way till they have completed the circuit. They will move only in one direction as displayed in the hall by arrow marks and will not be allowed to go back to the previous station.

Resource list for OSCE stations:

1. Counseling
2. Scenario
3. Lab report
4. Instrument
5. Specimen
6. Partograph
7. USG picture
8. NST
9. Contraceptives
10. Dummies
11. X-rays
12. Operation
13. Antenatal card
14. Operative notes
15. Endoscopic findings

PEDIATRICS

Practical Exam – Total marks 100

One pediatrics case	– 30 marks
One newborn case	– 30marks
OSCE (5stations 4 marks each)	- 20marks
Viva Voce	- 20 marks

(4 stations which include X rays, Instruments, Nutrition, Drugs and Vaccine)

Theory Exam – Total marks 100

MCQ	- 20 marks
Long answer Questions (10 marks x 3)	- 30 marks
Short answer questions (5 marksx10)	- 50 marks

Long answer questions one question from General Pediatrics (Growth & Development, Nutrition, Immunization, Infectious diseases) and another one from Neonatology.

Short answer questions should cover all Systemic Pediatrics, Pediatrics Surgery, Genetics and one question from AETCOM Module.

Theory Model Question Paper – Total marks 100 (Duration 3 hrs)

Answer all questions

A. Long answer questions

1. One year old child was brought with the complaints of loose Stools, Vomiting of two day duration.

(4+4+2=10)

   a) How will you access severity of dehydration?
   b) How will you manage based on the severity of dehydration?
   c) Mention the common complications anticipated.

2. A healthy newborn on day one of life was brought with jaundice.

(3+2+3+2=10)

   a) What are the likely causes?
   b) How will you investigate this neonate?
   c) What are the treatment options available?
   d) What are the likely complications of delayed treatment?

3. A 2 year old child presented withhypothermia, poor peripheral pulses, generalsed anasarca, withweight of 4kg with blood sugar level of 20mg/dl with severe undernutrton.
   a) What is the diagnoses?
   b) How will you classify severe undernutrition in children?

(1+2+3+3+2=10)

   c) What are the investigationsyouwill do in thischild?
   d) How will you manage this child?
   e) What are likely complications?

B. Short Answer questions: (5x10=50)

4. Management of acute severe asthma.
5. Describe the clinical features and management of congestive cardiac failure in a one year old child.
6. Complications of Nephrotic syndrome.
7. Counseling of a mother with Down syndrome baby.
8. Management of organo phosphorous poisoning.
9. Types and clinical presentation of 126rachea-esophageal fistula.
10. Clinical features and management of congenital hypothyroidism.
11. Prevention of mother to child transmission of HIV.
12. Laboratory Diagnosis and management of iron deficiency anaemia.
13. Enumerate the differences in the CSF findings between pyogenic and tubercular meningitis.
