UNIVERSITY OF DELHI

CNC-II/093/1(17)/2021-22/361
Dated: 04.03.2022

NOTIFICATION

Sub: Amendments to Ordinances

The following Amendments to Ordinances of the University which have been approved by the Executive Council at its meeting held on 31.08.2021 are notified for information and necessary action, if any, to all the concerned:

1. Amendment to Ordinance V (2) & VII. [E.C Res. 15-6 dated 31.08.2021]

Following may be added in the existing MBBS Ordinance approved by the Executive Council at its meeting held on 09.07.2011 and on 08.12.2020:

MBBS COURSE STARTING FROM THE ACADEMIC SESSION 2019-20 ONWARDS

CHAPTER I

GENERAL CONSIDERATIONS AND TEACHING APPROACH

1. Introduction

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

1.1 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. Objectives of the Indian Medical Graduate Training Programme

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 fulfill the goal of the IMG training programme, the medical graduate must be able

to function in the following roles appropriately and effectively:-

(a) Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

(b) Leader and member of the healthcare team and system with capabilities to collect analyze, synthesized communicate health data appropriately.

(c) Communicator with patients, families, colleagues and community.

(d) Lifelong learner committed to continuous improvement of skills and knowledge.

(e) 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 fulfill the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1 ***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, behavioral and social perspective.

3.1.2 Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral 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 the rapeutic goals.

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

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.

3.3 ***Communicator with patients, families, colleagues and community***

3.3.1 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.

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

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

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

3.4 ***Lifelong learner committed to continuous improvement of skills and knowledge***

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

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

3.4.3 Demonstrate ability to introspect and utilize experiences, to enhance personal and

professional growth and learning.

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

3.4.5 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 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.

4.2 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

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

Admission to the Indian Medical Graduate Programme

1. **Eligibility Conditions/Requirement for admission to MBBS Course : -**

   a. **Age: The candidates complete the age of 17 (seventeen) years on or before 31st December of the year of admission to MBBS Course.**

   Note: The candidates above 25 years are provisionally permitted to appear and their candidature is subject to the outcome of pending Petitions before the Hon'ble Supreme Court.

   b. **Qualifying examination:**

   (i) The educational qualification for admission is as per National Eligibility Entrance Test (NEET) conducted by National Testing Agency (NTA).

   (ii) Further to become eligible for 85% Delhi Quota, the candidate must have passed 11th and 12th standard examination under 10 + 2 system conducted by CBSE/Indian school certificate examination/Jamia Millia Islamia, New Delhi or any other equivalent examination from a recognized school situated within the NCT of Delhi only. The Candidates who have passed qualifying examination from Patrachar Vidyalaya or National Institute of Open Schooling will be eligible for admission in MBBS/BDS courses under 85% Delhi Quota provided their study center and the examination Center were within the National Capital Territory of Delhi (NCTD) and they must upload a certificate from the controlling authority of Patrachar Vidyalaya/NIOS in this regard.

   (iii) Further, guidelines / eligibility conditions and other requirements will be decided by the Medical Sciences Course Admission Committee (MSCAC) from time to time with the approval of Competent Authority and published in the Bulletin of Information every year.

   The candidates who do not qualify the NEET – UG Examination conducted by NTA are not eligible.

2. **Procedure for selection to MBBS course shall be as follows:**

   (1) There shall be a uniform entrance examination to all medical educational institutions at the under graduate level namely 'National Eligibility-cum- Entrance Test for admission to MBBS course in each academic year and shall be conducted under overall supervision of the Ministry of Health & Family Welfare, Government of India.

   (2) The "designated authority" to conduct the 'National Eligibility-Cum Entrance Test' shall be the National Testing Agency (NTA) or any other body/organization so designated by the Ministry of Health & Family Welfare, Government of India, in consultation with the National Medical Commission.

   (3) The language and manner of conducting the 'National Eligibility-Cum- Entrance Test' shall be determined by the "designated authority" in consultation with the National Medical Commission and the Ministry of Health and Family Welfare, Government of India.

   (4) In order to be eligible for admission to MBBS Course for an academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in 'National Eligibility-cum-Entrance Test to MBBS course' held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with benchmark disabilities specified under the Rights of Persons with

Disabilities Act, 2016, in terms of Clause 4(3) above, the minimum marks shall be at 45th percentile. The percentile shall be determined on the basis of highest marks secured in the All- India common merit list for admission in 'National Eligibility-cum- Entrance Test for admission to MBBS course.

(5) Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to MBBS Course, the Central Government in consultation with National Medical Commission may at its discretion lower the minimum marks required for admission to MBBS Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.

(6) The reservation of seats in Medical Colleges for respective categories shall be as per applicable laws prevailing in States/Union Territories. An All India merit list as well as State/Union Territory-wise merit list of the eligible candidates shall be prepared on the basis of marks obtained in 'National Eligibility-cum-Entrance Test and candidates shall be admitted to MBBS course from the said lists only.

(7) No candidate who has failed to obtain the minimum eligibility marks as prescribed in Sub-clause (4) above shall be admitted to MBBS course in the said academic year.

(8) No authority/institution shall admit any candidate to the MBBS course in contravention of the criteria/procedure as laid down by these Regulations and / or in violation of the judgments passed by the Hon'ble Supreme Court in respect of admissions. Any candidate admitted in contravention/violation of aforesaid shall be discharged by the Council forthwith. The authority/institution which grants admission to any student in contravention / violation of the Regulations and / or the judgments passed by the Hon'ble Supreme Court, shall also be liable to face such action as may be prescribed by the Council, including surrender of seats equivalent to the extent of such admission made from its sanctioned intake capacity for the succeeding academic year/years.

(9) All admission to MBBS course within the respective categories shall be based solely on the marks obtained in the 'National Eligibility-Cum- Entrance Test.

CHAPTER III

MIGRATION

6. Migration

No migration is permitted in the Medical Colleges of the University of Delhi.

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 National Medical Commission and also made available on the Commission'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 very learner shall undergo a period of certified study extending over 4½ 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 (28months)]
	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, Radio-diagnosis & Radiotherapy and Anaesthesiology & Professional development including AETCOM module. 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]. Part II (13 months) - Clinical subjects include: • Medicine and allied specialties (General Medicine, Psychiatry,

	Dermatology Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis) • Surgery and allied specialties (General Surgery, Orthopedics [including trauma]), Dentistry, Physical Medicine and rehabilitation, Anaesthesiology and Radio-diagnosis) • Obstetrics and Gynecology (including Family Welfare) • Pediatrics • AETCOM module
7.5	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.
7.6	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 the1st 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.
7.7	No more than four attempts shall be allowed for a candidate to pass the first Professional examination. The total period for success full completion of first Professional course shall not exceed four (4) years. Partial attendance of examination in any subject shall be counted as an attempt.
7.8	A learner, who fails in the second Professional examination, shall not be allowed to appear in third Professional Part I examination unless he/she passes all subjects of second Professional examination
7.9	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.
7.10	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.

8. Phase distribution and timing of examination

8.1	Time distribution of the MBBS programme is given in Table1. (Modified time duration during COVID 19 as prescribed by National Medical Commission (Appendix 1)
8.2	Distribution of subjects by Professional Phase-wise is given in Table2.

8.3	Minimum teaching hours prescribed in various disciplines are as under Tables3-7.	
8.4	Distribution of clinical postings is given in Table8.	
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.	
8.9	Vacations will be in last two weeks of June and last two weeks of December for all Professionals	
8.10	VACATIONS FOR TEACHERS:-	
	(i) 20th December to 26th January	38 days
	(ii) 7th May to 15th July	70 days
	Total	108 days

Note:	1.	Each vacation will be in 2 halves with 1 common working day, in between
	2.	If the common working day happen to be a holiday, then the next working day shall be common working day.
	3.	May be adjusted at College level.

Table 1: Time distribution of MBBS Programme & Examination Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		

<table>
<tr><td colspan="6">II MBBS</td><td></td><td>Exam II MBBS</td><td colspan="3">III MBBS</td></tr>
<tr><td colspan="8">III MBBS Part I</td><td>Exam III MBBS Part I</td><td>Electives & Skills</td></tr>
<tr><td colspan="10">III MBBS Part II</td></tr>
<tr><td colspan="2">Exam III MBBS Part II</td><td></td><td colspan="7">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 (1month) • Human Anatomy, Physiology & Biochemistry, introduction to Community Medicine, Humanities • Early Clinical Exposure • Attitude, Ethics, and Communication Module (AETCOM)	1 + 13 months	I Professional
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	13 months	III Professional (Part II)

	• Clinical postings/subjects • Attitude, Ethics & Communication Module(AETCOM)		

*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 in9.1.
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 3hours 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 Medicine1	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics &Gynaecology2	4	4	8 +4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics - including Trauma3	2	4	2	8
Otorhinolaryngology	4	4	-	8
Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis4	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anesthesia	-	2	-	2
Casualty	-	2	-	2
Total	36	42	48	126

* In four of the eight weeks of electives, regular clinical postings shall be accommodated. 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**
9.1.1	**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.

9.1.2	**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) Inter personal 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:** (i) First-aid (ii) 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 pre-clinical 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 out-patient and in-patient 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 Table9. (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 table9), (vii) Participate in unit rounds on atleast 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	**First Professional (Pre-clinical)** The curriculum in individual subjects will be made by Committee of Courses and Studies of respective departments. The course curriculum prepared by Committee of Courses and studies of Anatomy, Biochemistry and Physiology are at appendix 2.
10.4	**Second Professional (Para-clinical)** The curriculum in individual subjects will be made by Committee of Courses and Studies of respective departments
10.5	**Third Professional (Part I)** The curriculum in individual subjects will be made by Committee of Courses and Studies of respective departments
10.6	**Third Professional (Part II)** The curriculum in individual subjects will be made by Committee of Courses and Studies of respective departments
	Note: The curriculum of MBBS Course shall be as per National Medical Commission (NMC) Regulation on Graduate Medical Education Regulation 2019. The syllabus may be decided by the respective committee of courses and studies in their department under Faculty of Medical Sciences from time to time.
10.7	A list of certifiable procedural skills is during internship is given in Table 11.

CHAPTER VI

ASSESSMENT

11	**Assessment**
11.1	**Eligibility to appear for Professional examinations**
11.1.1	The performance in essential components of training are to be assessed, based on: **(a) Attendance** (i) Attendance requirements are 75% in theory and 80% in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase – the learner must have 75% attendance in theory and 80% in practical in each phase of instruction in that subject. (ii) If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting. (iii) Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

	(b) Internal Assessment: Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/problem solving exercise, participation in project for health care in the community, proficiency in carrying out a practical or a skill in small research project, a written test etc. 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 (Theory and Practical Marks) i.e, 20% of total Marks in final exam of each subject will reflect as separate head of passing at summative examination. (Table – 10b) 6. Internal assessment marks Theory and Practical will reflect as separate head of passing at the summative examination. 7. The results of internal assessment should be displayed on the notice board within 1-2 weeks of the test. The remedial measures should be taken at college level for students who are either not able to score qualifying marks or have missed on some assessments due to any reason. 8. 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.
11.2	**University Examinations**
11.2.1	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 which are necessary for him/her to function effectively and appropriately as a physician of

	first contact. Assessment shall be carried out on an objective basis to the extent possible
11.2.2	Nature of questions will include different types such as structured essays (Long Answer Questions LAQ), Short Answers Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions - MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weightage of not more than 20% of the total theory marks. 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.
11.2.3	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 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.
11.2.4	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 to be also assessed.
11.2.5	There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.
11.2.6	A learner shall not be entitled to graduate after 10 years of his/her joining of the first part of the MBBS course.
11.2.7	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. **(b) Second Professional** (i) The second Professional examination shall be held at the end of second professional training (11 months), in the subjects of Pathology, Microbiology and Pharmacology. **(c) Third Professional** (i) 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 and Forensic Medicine and Toxicology

	(ii) 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 & Gynecology and Pediatrics. The discipline of Orthopedics, Anesthesiology, Dentistry and Radio-diagnosis will constitute 25% of the total theory marks incorporated as a separate section in paper II of General Surgery. (iii) 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. **(d) Examination schedule is in Table 1.** **(e) Marks distribution is in Table 10.**

Table 10 (a): Marks distribution for various subjects in final examination.

Phase of Course	Written - Theory - Total	Practicals/ Orals/ Clinicals	Pass Criteria
First Professional			**Internal Assessment** 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations **University Examination** Mandatory 50% marks separately in theory and practical (practical =practical/ clinical +viva)
Human Anatomy - 2 papers	200	100	
Physiology - 2 papers	200	100	
Biochemistry - 2 papers	200	100	
Second Professional			
Pharmacology - 2 Papers	200	100	
Pathology - 2 papers	200	100	
Microbiology - 2 papers	200	100	
Third Professional Part – I			
Forensic Medicine & Toxicology - 1 paper	100	100	
Ophthalmology – 1 paper	100	100	
Otorhinolaryngology – 1 paper	100	100	
Community Medicine - 2 papers	200	100	
Third Professional Part – II			
General Medicine - 2 papers	200	200	
General Surgery - 2 papers	200	200	
Pediatrics – 1 paper	100	100	
Obstetrics & Gynaecology - 2 papers	200	200	

Note: 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.

Table 10 (b) INTERNAL ASSESMENT MARKS

First Professional	**Theory**	**Practical**
Anatomy	40	20
Physiology	40	20
Biochemistry	40	20
Second Professional		
Pharmacology	40	20
Pathology	40	20
Microbiology	40	20
Third Professional I		
Forensic Medicine	20	20
Ophthalmology	20	20
ENT	20	20
Community Medicine	40	20
Third Professional II		
General Medicine	40	40
General Surgery	40	40
Pediatrics	20	20
Obst. & Gyn.	40	40

Internal Assessment:

50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

11.2.8	**Criteria for passing in a subject**: A candidate shall obtain 50% marks in University conducted examination separately in Theory and Practical (practical includes: practical/ clinical and viva voce) in order to be declared as passed in that subject.
11.2.9	**Appointment of Examiners** **a)** Person 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 in the subject in a college affiliated to a recognized/approved/permitted medical college.

	b) For the Practical/Clinical examinations, there shall be at least four examiners for 100 learners, 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 coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed. **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. Provided further that the 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 accept external examinership 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 central assessment program (CAP) of concerned university. **k)** Internal examiners should be appointed from same institution for unitary examination in same institution. For pooled examinations at one centre approved internal examiners from same university may be appointed. **l)** The grace marks up to a maximum of 5 marks may be awarded at the discretion of the University to a learner for clearing (passing) the examination as a whole (irrespective of the number of subjects) but not for clearing a subject resulting in exemption.

CHAPTER VII

INTERNSHIP

12	**INTERNSHIP** Internship is a phase of training wherein a graduate will acquire the skills and competencies for practice of medical and health care under supervision so that he/she can be certified for independent medical practice as an Indian Medical Graduate. In order to make trained work force available, it may be considered as a phase of training wherein the graduate is expected to conduct actual practice under the supervision of a trained doctor. The learning methods and modalities have to be done during the MBBS course itself with larger number of hands on session and practice on simulators.

12.1	**Goal**: The goal of the internship programme is to train medical students to fulfill their roles as doctors of first contact in the community.
12.2.	**Objectives**: At the end of the internship period, the medical graduate will possess all competencies required of an Indian Medical Graduate, namely:
12.2.1	Independently provide preventive, promotive, curative and palliative care with compassion,
12.2.2	Function as leader and member of the health care team and health system,
12.2.3	Communicate effectively with patients, families, colleagues and the community,
12.2.4	Be certified in diagnostic and therapeutic skills in different disciplines of medicine taught in the undergraduate programme,
12.2.5	Be a lifelong learner committed to continuous improvement of skills and knowledge,
12.2.6	Be a professional committed to excellence and is ethical, responsive and accountable to patients, community and profession.
12.3	**Time Distribution**
	Community Medicine (Residential posting) : 2 months General Medicine including 15 days of Psychiatry : 2 months General Surgery including 15 days Anaesthesia : 2 months Obstetrics & Gynaecology including Family Welfare Planning : 2 months Pediatrics : 1 month Orthopaedics including PM&R : 1 month Otorhinolaryngology : 15 days Ophthalmology : 15 days Casualty : 15 days Elective posting (1x15 days) : 15 days Subjects for Elective posting will be as follows: 1. Dermatology, Venereology & Leprosy 2. Respiratory Medicine 3. Radio diagnosis 4. Forensic Medicine & Toxicology 5. Blood Bank 6. Psychiatry **Note:** Structure internship with assessment at the end in the college.
12.4	**Other details**:
12.4.1	The core rotations of the internship shall be done in primary and secondary/ tertiary care institutions in India. In case of any difficulties, the matter may be referred to the Medical Council of India to be considered on individual merit.

12.4.2	Every candidate will be required after passing the final MBBS examination to undergo compulsory rotational internship to the satisfaction of the College authorities and University concerned for a period of 12 months so as to be eligible for the award of the degree of Bachelor of Medicine and Bachelor of Surgery (MBBS) and full registration.
12.4.3	The University shall issue a provisional MBBS pass certificate on passing the final examination.
12.4.4	The State Medical Council will grant provisional registration to the candidate upon production of the provisional MBBS pass certificate. The provisional registration will be for a period of one year. In the event of the shortage or unsatisfactory work, the period of provisional registration and the compulsory rotating internship shall be suitably extended by the appropriate authorities.
12.4.5	The intern shall be entrusted with clinical responsibilities under direct supervision of a designated supervising physician. They shall not work independently.
12.4.6	Interns will not issue medical certificate or death certificate or other medico-legal document under their signature.
12.4.7	Each medical college must ensure that the student gets learning experience in primary/secondary and urban/rural centers in order to provide a diverse learning experience and facilitate the implementation of national health programmes/ priorities. These shall include community and outreach activities, collaboration with rural and urban community health centers, participation in government health missions etc.
12.4.8	One year's approved service in the Armed Forces Medical Services, after passing the final MBBS examination shall be considered as equivalent to the pre-registration training detailed above; such training shall, as far as possible, be at the Base/General Hospital. The training in Community Medicine should fulfill the norms of the National Medical Commission as proposed above.
12.4.9	In recognition of the importance of hands-on experience, full responsibility for patient care and skill acquisition, internship should be increasingly scheduled to utilize clinical facilities available in District Hospital, Taluka Hospital, Community Health Centre and Primary Health Centre, in addition to Teaching Hospital. A critical element of internship will be the acquisition of specific experiences and skill as listed in major areas: provided that where an intern is posted to District/Sub Divisional Hospital for training, there shall be a committee consisting of representatives of the college/University, the State Government and the District administration, who shall regulate the training of such trainee. Provided further that, for such trainee a certificate of satisfactory completion of training shall be obtained from the relevant administrative authorities which shall be countersigned by the Principal/Dean of College.
12.5	**Assessment of Internship**:
12.5.1	The intern shall maintain a record of work in a log book, which is to be verified and certified by the medical officer under whom he/she works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills

	and attitude during and at the end of the training.
12.5.2	Based on the record of work and objective assessment at the end of each posting, the Dean/Principal shall issue cumulative certificate of satisfactory completion of training at the end of internship, following which the University shall award the MBBS degree or declare him eligible for it.
12.5.3	Full registration shall only be given by the State Medical Council/National Medical Commission on the award of the MBBS degree by the University or its declaration that the candidate is eligible for it.
12.5.4	Some guidelines for the implementation of the training programme are given in section 12.10, discipline wise
12.6	No Dues To avoid any unnecessary delay in clearance, a signed 'No Dues' Certificate should be taken by the Intern at the end of each posting from the concerned department.
12.7	**Repeating Internship** An Intern must ordinarily complete his/her Internship during the scheduled period of **1st January to 31st December** for Regular Batch **and the Supplementary Batch Intern may start internship training after declaration of the Supplementary Examination. Stipulation for repeat posting:** i) Unsatisfactory performance. ii) Prolonged illness, Medical Certificate must be validated by a Medical Board set up by the Institution, where rotatory internship is being undertaken. iii) No Hostel accommodation shall be provided for the repeat period. However, in extraordinary circumstances the institute may provide accommodation only if it is available. iv) In the event of repeat posting, the period of provisional registration and compulsory rotating internship may be suitably extended by appropriate authorities.
12.8	**Externship** Ordinarily rotatory internship must be undertaken in the institution where the student has enrolled. However, a student can do internship in National Medical Commission approved hospital/institution for which the following guidelines may be followed: **Externship in India:** i) A student must apply for permission to do internship outside Delhi on the annexed proforma alongwith the desired documents. Before considering the student's application to do internship in another hospital/medical college he/she will be required to produce the following documents: a. Permission from the institutions where the student wishes to do internship b. Certificate from National Medical Commission that the hospital/institution is recognized for undergoing internship training c. Permission from the University of Delhi

	d. Documentary proof of the reason for doing internship from outside Delhi ii) All students intending to do internship outside must submit duly completed application to the concerned authorities at the beginning of the internship programme not later 15th January. However, an exception may be made on merit of the case. iii) Each institution will constitute a committee to recommend such cases. The committee must include the Academic In charge and Registrar Academic of the Institute and Heads of the following Departments: (a) Medicine (b) Surgery (c) Obstt. And Gynae. (d) Community Medicine iv) No externship can be for less than two months. v) Rotatory Internship in Community Medicine must be completed within the institution of enrollment. vi) A certificate of satisfactory completion of training should be submitted to the Institution duly signed and stamped by the administrative authorities of the Hospital/District Centre, where the student has undergone externship. vii) Externship in multiple institutes will not be permitted. viii) Externship in India once done in a particular institution/hospital recognized by National Medical Commission is not repeated in parent institution. Only the records of satisfactory completion of training, duly certified by Medical Office alongwith assessment report/evaluation report, meeting the objectives of training are submitted.
12.8.1	**Externship outside India:** i) Externship outside India: "Clerkship/Elective" will be allowed for a period of maximum one month. The period of elective posting combined with 12 days of Casual Leave will give the student a period of approximately one month. ii) "Clerkship/Elective" must include good hands-on experience, student should be allowed to do physical exams, touch the patients besides taking histories, case presentations and lab-result follow ups. No Observer ship will be allowed while availing the externship under any circumstances. iii) The permission for the "Clerkship/Elective" will have to be taken from the University. This would, however, be without any commitments on the part of the University, financial or otherwise. iv) The student will fill up a proforma provided by the Faculty of Medical Sciences which will have to be signed by the Dean of the University where the student wishes to do his/her Clerkship. After completion of the Clerkship the students will have to submit a certificate of satisfactory completion from the institute where Clerkship was done.
12.9	**Guidelines for outside candidates wishing to do Internship in medical Institutions under University of Delhi** The prime responsibility and commitment of the institution is to train its own Undergraduates during their rotatory internship period. However, it has been seen that students from outside apply for rotatory internship training to the medical institutions under University of Delhi. (i) Ordinarily the capacity and infrastructure of the institutions is to train only

	the number of students that they have enrolled. The students may apply if there is a clear cut vacancy in the institution provided the following certificates / documents are produced: (a) Application of the students giving reasons to do internship and documentary proof thereof. (b) No Objection Certificate from his/her parent institution clearly stating that institution is recognized by National Medical Commission and that during the course of his/her training from admission to his/her passing out, the college was not derecognized by National Medical Commission at any time. (c) Permission of the University to which the above college is affiliated. (ii) Certificate from National Medical Commission that Medical College/Institution where the student is at present studying has been recognized by the National Medical Commission from the year the student was admitted in that institution to the year of his/her passing out. (iii) Certificate of provisional registration by National Medical Commission. (iv) Certificate of good character and conduct of the student from the parent college/institution. (v) Permission of Delhi University. (vi) Permission of concerned State Government. (vii) An undertaking that the student is prepared to do internship without any pay, stipend or honorarium: (a) That he/she would follow the Internship Programme of the University of Delhi. (b) That he/she would maintain good conduct, discipline and decorum of the institution and the authorities of the University have the right to expel him/her on misconduct, indiscipline and unsatisfactory work. **How to select:** If there is more than one applicant wishing to do internship at the institutions, they will be selected strictly on the basis of merit. While making the list, consideration will be given to all the three/four University Examinations and from the total marks **5% marks** deducted for each additional attempt. Candidates who did not avail the chance of University Examination when it was due should not be considered a failure in that subject/s and it should be counted as first attempt and marks should not be deducted. Also, 5% extra marks will be allotted for distinction or medal in any subject. **When to apply:** All applications of internship alongwith relevant documents should be received between**1st January to 15th April however, permission to do internship should be considered** subject to availability of vacancy in the respective colleges.
12.10	**INTERNSHIP – GUIDELINES DISCIPLINE RELATED:**
12.10.1	**COMMUNITYMEDICINE GOAL:** The aim of teaching the undergraduate student in Community Medicine is to impart such knowledge and skills that may enable him to diagnose and treat common medical illnesses and recognize the importance of community involvement. He/she shall acquire competence to deal effectively with an

	individual and the community in the context of primary health care. This is to be achieved by hands-on experience in the District Hospital and Primary Health Centre. The details are as under: - **I) District Hospital /Community Health Centre/Attachment to General Practitioner:** **A. An intern must be able to do without assistance:** 1. An intern must: a) Be able to diagnose common ailments and advise primary care; b) Demonstrate knowledge on 'Essential drugs' and their usage; c) Recognize medical emergencies, resuscitate and institute initial treatment and refer to a suitable institution. 2. An intern must be familiar with all National Health Programmes (e.g. RCH, UIP, CDD, ARI, FP, ANC, Tuberculosis, Leprosy and others), as recommended by the Ministry of Health and Family Welfare. 3. An intern must: a) Gain full expertise in immunization against infectious disease; b) Participate in programmes related to prevention and control of locally prevalent endemic diseases including nutritional disorders; c) Learn skills in family welfare planning procedures; 4. An intern must: a) Conduct programmes on health education, b) Gain capabilities to use Audio-visual aids, c) Acquire capability of utilization of scientific information for promotion of community health **B. An intern must have observed or preferably assisted at the following:** 1. An intern should be capable of establishing linkages with other agencies as water supply, food distribution and other environmental/social agencies. 2. An intern should acquire managerial skills including delegation of duties to and monitoring the activities of paramedical staff and other health professionals. **II) Taluka Hospital/ First Referral Unit** **A. An intern must be able to do without assistance:** 1. An intern shall provide health education to an individual/community on: a) tuberculosis, b) small family, spacing, use of appropriate contraceptives, c) applied nutrition and care of mothers and children, d) immunization. **B. An intern must be able to do with supervision:** An intern shall attend at least one school health programme with the

	medical officer. **III) Primary Health Centre / Urban Health Centre** **A. An intern must be able to do without assistance the following:** a) Participate in family composite health care (birth to death), inventory of events. b) Participate in use of the modules on field practice for community health e.g. safe motherhood, nutrition surveillance and rehabilitation, diarrheal disorders etc. c) Participate in and maintain documents related to immunization and cold chain. d) Acquire competence in diagnosis and management of common ailments e.g. malaria, tuberculosis, enteric fever, congestive heart failure, hepatitis, meningitis acute renal failure etc. **B. An intern must be able to do under supervision the following:** a) Acquire proficiency in Family Welfare Programmes (antenatal care, normal delivery, contraception etc.). b) Undergo village attachment of at least one week duration to understand issues of community health alongwith exposure to village health centres, ASHA Sub Centres. c) Participate in Infectious Diseases Surveillance and Epidemic Management activities along with the medical officer.
12.10.2	**GENERAL MEDICINE GOAL:** The aim of teaching the undergraduate student in General Medicine is to impart such knowledge and skills that may enable him to diagnose and treat common medical illnesses. He/she shall acquire competence in clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management; this would include diseases common in tropics (parasitic, bacterial or viral infections, nutritional disorders, including dehydration and electrolyte disturbances) and various system illnesses. **1. An intern must be able to do without assistance and interpret the results of:** **(a)** The following laboratory investigations: i) Blood : (Routine haematology smear and blood groups) ii) Urine : (Routine chemical and microscopic examination) iii) Stool : (for ova/cyst and occult blood) iv) Sputum and throat swab for gram stain or acid-fast stain and v) Cerebrospinal Fluid (CSF) for smear vi) Electrocardiogram (ECG) vii) Glucometer recording of blood sugar viii) Routine radiographs of chest, abdomen, skull etc. **(b) Perform independently the following** i) Diagnostic procedures: Proctoscopy Ophthalmoscopy / Otoscopy Indirect laryngoscopy

	ii) Therapeutic procedures: Urethral catheterization Insertion of Ryle's Tube, Pleural Ascitic fluid aspiration Cerebrospinal Fluid (CSF) aspiration Air way tube installation Oxygen administration etc. **2. An intern must have observed or preferably assisted at the following operations/procedures:** **(i)** Biopsy Procedures**: Liver, Kidney, Skin, Nerve, Lymph node, and muscle biopsy, Bone marrow aspiration, Biopsy of Malignant lesions on surface, nasal/nerve/skin smear for leprosy under supervision.** **(ii) Skills that an intern should be able to perform under supervision:** a) An intern should be familiar with lifesaving procedures, including use of aspirator, respirator and defibrillator, cardiac monitor, blood gasanalyser. b) An intern should be able to advise about management and prognosis of acute & chronic illnesses like viral fever, gastroenteritis, hepatitis, pneumonias, myocardial infarction and angina, TIA and stroke, seizures, diabetes mellitus, hypertension renal and hepatic failure, thyroid disorders and hematological disorders. He should participate in counseling sessions for patients with non-communicable diseases and tuberculosis, HIV patients etc. c) Intern should be able to confirm death and demonstrate understanding of World Health Organisation cause of death reporting and data quality requirements. d) Intern should be able to demonstrate understanding of the coordination with local and national epidemic management plans. e) Intern shall be able to demonstrate prescribing skills and demonstrate awareness of pharma co-vigilance, antibiotics policy, prescription audit and concept of essential medicines list.
12.10.3	**PEDIATRICS:** **GOAL:** The aim of teaching the undergraduate student in Pediatrics is to impart such knowledge and skills that may enable him to diagnose and treat common childhood illnesses including neonatal disorders. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management; this would include diseases common in tropics (parasitic, bacterial or viral infections, nutritional disorders, including dehydration and electrolyte disturbances) and various system illnesses. **A. An intern must be able to do without assistance:** An intern shall be able to diagnose and manage common childhood disorders including neonatal disorders and acute emergencies, examining sick child making a record of information. An intern shall perform: a) **diagnostic techniques**: blood collection (including from femoral vein and umbilical cord), drainage of abscess, collection of cerebrospinal, pleural and peritoneal fluids, suprapubic aspiration of urine.

	b) **techniques related to patient care:** immunization, perfusion techniques, nasogastric tube insertion, feeding procedures, tuberculin testing & breast-feeding counseling. c) **use of equipments:** vital monitoring, temperature monitoring, resuscitation at birth and care of children receiving intensive care. d) institute early management of common childhood disorders with special reference to pediatric dosage and oral rehydration therapy. **B. An intern must have observed or preferably assisted at the following operations/procedures:** a) screening of newborn babies and those with risk factors for any anomalies and steps for prevention in future; detect congenital abnormalities; b) recognize growth abnormalities; recognize anomalies of psychomotor development; c) assess nutritional and dietary status of infants and children and organize prevention, detection and follow up of deficiency disorders both at individual and community levels, such as: • protein-energy malnutrition • deficiencies of vitamins especially A, B, C and D; • Iron deficiency **C. Skills that an intern should be able to perform under supervision:** a) An intern should be familiar with life-saving procedures, including use of aspirator, respirator, cardiac monitor, blood gas analyser. b) An intern should be able to advise about management and prognosis of acute & chronic illnesses like viral fever, gastroenteritis, hepatitis, pneumonias, congenital heart diseases, seizures, renal and hepatic diseases, thyroid disorders and hematological disorders. She/he should participate in counseling sessions with parents including HIV counseling.
12.10.4	**GENERAL SURGEY** **GOAL:** The aim of teaching the undergraduate student in General Surgery is to impart such knowledge and skills that may enable him to diagnose and treat common surgical ailments. He/she shall have ability to diagnose and suspect with reasonable accuracy all acute and chronic surgical illnesses. **(A) THERAPEUTIC - An intern must perform or assist in:** a) venesection or venous access b) tracheastomy and endotracheal intubation c) catheterization of patients with acute retention or trocar cystostomy d) drainage of superficial abscesses e) basic suturing of wound and wound management (including bandaging) f) biopsy of surface tumours g) perform vasectomy **(B) Skill that an intern should be able to perform under supervision:** a) Advise about prognosis of acute & chronic surgical illnesses, head

	injury, trauma, burns and cancer. Counsel patients regarding the same. b) Advise about rehabilitation of patients after surgery and assist them for early recovery. c) Intern should be able to demonstrate understanding of World Health Organization cause of death reporting and data quality requirements. d) Intern should be able to demonstrate understanding of the use of national and sub-national cause of death statistics. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Resuscitation of critical patients b) Basic surgical procedures for major and minor surgical illnesses c) Wound dressings and application of splints d) Laparoscopic/ Minimally Invasive surgery e) Lymph node biopsy
12.10.5	**CASUALTY** **GOAL:** The aim of teaching the undergraduate student in casualty is to impart such knowledge and skills that may enable him/her to diagnose and treat common acute surgical /medical ailments. He/she shall have ability to diagnose and suspect, with reasonable accuracy, acute surgical illnesses including emergencies, resuscitate critically injured patient and a severely burned patient, control surface bleeding and manage open wounds and monitor and institute first-line management of patients of head, spine, chest, abdominal and pelvic injury as well as acute abdomen. **(A) THERAPEUTIC- An intern must perform or assist in:** a) Identification of acute emergencies in various disciplines of medical practice, b) Management of acute anaphylactic shock, c) Management of peripheral-vascular failure and shock, d) Management of acute pulmonary edema and Left Ventricular Failure(LVF), e) Emergency management of drowning, poisoning and seizure, f) Emergency management of bronchial asthma and status asthmaticus, g) Emergency management of hyperpyrexia, h) Emergency management of comatose patients regarding airways, positioning, prevention of aspiration and injuries, i) Assessment and administering emergency management of burns, j) Assessing and implementing emergency management of various trauma victims, k) Identification of medico-legal cases and learn filling up of forms as well as complete other medico-legal formalities in cases of injury, poisoning, sexual offenses, intoxication and other unnatural conditions. **(B) Skill that an intern should be able to perform under supervision:**

	a) Advise about prognosis of acute surgical illnesses, head injury, trauma and burns. Counsel patients regarding the same. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Resuscitation of critical patients b) documentation medico legal cases c) management of bleeding and application of splints;
12.10.6	**OBSTETRICS AND GYNAECOLOGY** **GOAL:** The aim of teaching the undergraduate student in Obstetrics & Gynaecology is to impart such knowledge and skills that may enable him to diagnose and manage antenatal and post-natal follow up; manage labor and detect intrapartum emergencies; diagnose and treat common gynaecologic ailments. **(A) THERAPEUTIC-An intern must perform or assist in:** a) Diagnosis of early pregnancy and provision of ante-natal care; ante natal pelvic assessment and detection of cephalo pelvic disproportion, b) Diagnosis of pathology of pregnancy related to: • abortion • ectopic pregnancy • tumours complicating pregnancy • acute abdomen in early pregnancy • hyper emesis gravid arum, c) Detection of high-risk pregnancy cases and give suitable advice e.g. PIH, hydramanios, antepartum haemorrhage, multiple pregnancies, abnormal presentations and intra-uterine growth retardation, d) Induction of labor and amniotomy under supervision, e) Induction of labor and amniotomy under supervision, f) Management of normal labor, detection of abnormalities, post partum hemorrhage and repair of perennial tears, g) Assist in forceps delivery, h) Detection and management of abnormalities of lactation, i) Evaluation and prescription oral contraceptives with counseling, j) Perspeculum, pervaginum and perrectal examination for detection of common congenital, inflammatory, neoplastic and traumatic conditions of vulva, vagina, uterus and ovaries, k) Medico-legal examination in Gynecology and Obstetrics. **(B) Skills that an intern should be able to perform under supervision:** a) Dilatation and curettage and fractional curettage, b) Endometrialbiopsy, c) Endometrialaspiration, d) Pap smearcollection, e) Intra Uterine Contraceptive Device (IUCD)insertion, f) Minilapligation, g) Urethralcatheterization,

	h) Suture removal in postoperative cases, i) Cervical punch biopsy. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Major abdominal and vaginal surgery cases, b) Second trimester Medical Termination of Pregnancy (MTP)procedures e.g., Emcredyl Prostaglandin instillations, Caesarean section.
12.10.7	**OTORHINOLARYNGOLOGY (ENT)** **GOAL:** The aim of teaching the undergraduate student in ophthalmology is to impart such knowledge and skills that may enable him to diagnose and treat common otorhinolaryngological conditions such as ear pain, foreign bodies and acquire ability for a comprehensive diagnosis of common Ear, Nose and Throat (ENT) diseases including emergencies and malignant neoplasms of the head and neck. **(A) THERAPEUTIC- An intern must perform or assist in:** a) Ear syringing, antrum puncture and packing of the nose for epistaxis, b) Nasal douching and packing of the external canal, c) Removing foreign bodies from nose and ear, d) Observing or assisting in various endoscopic procedures and tracheostomy. **(B) Skill that an intern should be able to perform under supervision:** a) Intern shall have participated as a team member in the diagnosis of various ENT- related diseases and be aware of National programme on prevention of deafness, b) Intern shall acquire knowledge of various ENT related rehabilitative programmes. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Intern shall acquire skills in the use of head mirror, otoscope and indirect laryngoscopy and first line of management of common Ear Nose and Throat (ENT) problems
12.10.8	**OPHTHALMOLOGY** **GOAL:** The aim of teaching the undergraduate student in ophthalmology is to impart such knowledge and skills that may enable him to diagnose and treat common ophthalmological conditions such as Trauma, Acute conjunctivitis, allergic conjunctivitis, xerosis, entropion, corneal ulcer, iridocyclitis, myopia, hypermetropia, cataract, glaucoma, ocular injury and sudden loss of vision. **(A) THERAPEUTIC- An intern must perform or assist in:** a) Subconjunctival injection b) Ocular bandaging c) Removal of concretions

	d) Epilation and electrolysis e) Corneal foreign body removal f) Cauterization of corneal ulcers g) Chalazion removal h) Entropion correction i) Suturing conjunctival tears j) Lids repair k) Glaucoma surgery(assisted) l) Enucleation of eye in cadaver. **(B) Skill that an intern should be able to perform under supervision:** Advise regarding methods for rehabilitation of the blind. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Assessment of refractive errors and advise its correction, b) Diagnose ocular changes in common systemic disorders, c) Perform investigative procedures such as tonometry, syringing, direct ophthalmoscopy, subjective refraction and fluorescin staining of cornea.
12.10.9	**ORTHOPAEDICS GOAL:** The aim of teaching the undergraduate student in Orthopaedics and Physical Medicine and Rehabilitation is to impart such knowledge and skills that may enable him to diagnose and treat common ailments. He/she shall have ability to diagnose and suspect presence of fracture, dislocation, actual osteomyelitis, acute poliomyelitis and common congenital deformities such as congenital talipesequinovarus (CTEV) and dislocation of hip (CDH). **(A) THERAPEUTIC- An intern must assist in:** a) Splinting (plaster slab) for the purpose of emergency splintage, definitive splintage and post- operative splintage and application of Thomassplint, b) Manual reduction of common fractures – phalangeal, metacarpal, metatarsal and Colles' fracture, c) Manual reduction of common dislocations – interphalangeal, metacarpophalangeal, elbow and shoulder dislocations, d) Plaster cast application for undisplaced fractures of arm, fore arm, leg and ankle, e) Emergency care of a multiple injury patient, f) Transport and bed care of spinal cord injury patients. **(B) Skill that an intern should be able to perform under supervision:** a) Advise about prognosis of poliomyelitis, cerebral palsy, CTEV and CDH, b) Advise about rehabilitation of amputees and mutilating traumatic and leprosy deformities of hand. **(C) An intern must have observed or preferably assisted at the following operations:** a) Drainage for acute osteomyelitis,

	b) Sequestrectomy in chronicosteomyelitis, c) Application of external fixation, d) Internal fixation of fractures of long bones.
12.10.10	**DERMATOLOGY VENEREOLOGY & LEPROSY** **GOAL:** The aim of teaching the undergraduate student in Dermatology Venereology & Leprosy is to impart such knowledge and skills that may enable him to diagnose and treat common dermatological infections and leprosy. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management; this would include diseases common in tropics (parasitic, bacterial or viral infections, and cutaneous manifestations of systemic illnesses. **(A) THERAPEUTIC- At the end of internship an intern must be able to:** a) Conduct proper clinical examination; elicit and interpret physical findings, and diagnose common disorders and emergencies, b) Perform simple, routine investigative procedures for making bedside diagnosis, specially the examination of scraping for fungus, preparation of slit smears and staining for AFB for leprosy patient and for STD cases, c) Manage common diseases recognizing the need for referral for specialized care in case of inappropriateness of therapeutic response. **(B) An intern must have observed or preferably assisted at the following operations/procedures:** a) Skin biopsy for diagnostic purpose
12.10.11	**PSYCHIATRY** **GOAL:** The aim of teaching the undergraduate student in Psychiatry is to impart such knowledge and skills that may enable him to diagnose and treat common psychiatric illnesses. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management. He/she should also be able to recognize the behavioural manifestations of systemic illnesses. **(A) THERAPEUTIC- An intern must perform or assist in:** a) Diagnose and manage common psychiatric disorders, b) Identify and manage psychological reactions, c) Diagnose and manage behavioural disorders in medical and surgical patients. **(B) An intern must have observed or preferably assisted at the following operations/procedures:** a) ECT administration, b) Therapeutic counseling and follow-up.

12.10.12	**RESPIRATORY MEDICINE** **GOAL:** The aim of teaching the undergraduate student in Respiratory Medicine is to impart such knowledge and skills that may enable him to diagnose and treat common respiratory illnesses. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management. **(A) THERAPEUTIC - An intern must perform or assist in:** a) diagnosing and managing common respiratory disorders and emergencies, b) simple, routine investigative procedures required for making bed side diagnosis, especially sputum collection, examination for etiological organism like AFB, interpretation of chest X-rays and respiratory function tests, c) interpreting and managing various blood gases and pH abnormalities in various illnesses. **(B) An intern must have observed or preferably assisted at the following operations/procedures:** a) Laryngoscopy, b) Pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage aspiration, c) Therapeutic counseling and follow up.
12.10.13	**ANAESTHESIOLOGY** **GOAL:** The aim of teaching the undergraduate student in anaesthesia is to impart such knowledge and skills that may enable him to understand principles of anaesthesia and recognize risk and complications of anaesthesia. At the end of internship, graduate should be able to perform cardio-pulmonary resuscitation correctly, including recognition of cardiac arrest. **(A) THERAPEUTIC-** An intern must perform or assist in: a) Pre-anaesthetic checkup and prescribe pre-anaesthetic medications, b) Venepuncture and set up intravenousdrip, c) Laryngoscopy and endotrachealintubation, d) Lumbar puncture, spinal anaesthesia and simple nerve blocks, e) Simple general anaesthetic procedures under supervision, f) Monitor patients during anaesthesia and in the post-operative period, g) Maintain anaesthetic records, h) Perform cardio-pulmonary resuscitation correctly, including recognition of cardiacarrest. **(B) Skill that an intern should be able to perform under supervision**: a) Counseling and advise regarding various methods of anaesthesia, b) Recognize and manage problems associated with emergency

	anaesthesia, c) Recognize and treat complications in the post-operative period. **(C) An intern must have observed or preferably assisted at the following operations/procedures:** a) Anaesthesia for major and minor surgical and other procedures;
12.10.14	**RADIODIAGNOSIS** **GOAL:** The aim of teaching the undergraduate student in radio-diagnosis is to impart such knowledge and skills that may enable him to understand principles of imageology and recognize risk and complications of radiologic procedures and the need for protective techniques. At the end of internship, graduate should be able to counsel and prepare patients for various radiologic procedures. **An intern must acquire competency in:** a) Identifying and diagnosing acute abdominal conditions clinically and choose appropriate imaging modality for diagnosis, b) Identifying and diagnosing acute traumatic conditions in bones and skull using X rays / CT scans with emphasis on fractures and head injuries, c) Recognizing basic hazards and precautions in radio-diagnostic practices specially related to pregnancy, d) Demonstrating awareness of the various laws like PC PNDT Act.
12.10.15	**PHYSICAL MEDICINE AND REHABILITATION** **GOAL:** The aim of teaching the undergraduate student in Physical Medicine & Rehabilitation is to impart such knowledge and skills that may enable him to diagnose and treat common rheumatologic, orthopedic and neurologic illnesses requiring physical treatment. He/she shall acquire competence for clinical diagnosis based on history, physical examination and relevant laboratory investigations and institute appropriate line of management. **(A) A THERAPEUTIC- An intern must perform or assist in:** a) Diagnosing and managing with competence clinical diagnosis and management based on detailed history and assessment of common disabling conditions like poliomyelitis, cerebral palsy, hemiplegia, paraplegia, amputations etc. b) Participation as a team member in total rehabilitation including appropriate follow up of common disabling conditions, c) Procedures of fabrication and repair of artificial limbs and appliances. **(B) An intern must have observed or preferably assisted at the following operations/procedures:** a) Use of self-help devices and splints and mobility aids b) Accessibility problems and home making for disabled c) simple exercise therapy in common conditions like prevention of deformity in polio, stump exercise in an amputee etc.

	d) Therapeutic counselling and follow up
12.10.16	**FORENSIC MEDICINE AND TOXICOLOGY** **GOAL:** The aim of teaching the undergraduate student in Forensic Medicine is to impart such knowledge and skills that may enable him to manage common medico-legal problems in day to day practice. He/she shall acquire competence for post mortem diagnosis based on history, physical examination and relevant observations during autopsy. **(A) An intern must perform or assist in:** a) Identifying and documenting medico-legal problems in a hospital and general practice, b) Identifying the medico-legal responsibilities of a medical man in various hospital situations, c) Diagnosing and managing with competence basic poisoning conditions in the community, d) Diagnosing and managing with competence and documentation in cases of sexual assault, e) Preparing medico-legal reports in various medico legal situations. **(B) An intern must have observed or preferably assisted at the following operations/ procedures, as given in Table 11**: a) Various medico legal / post-mortem procedures and formalities during their performance by police.

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

Specialty	Procedure
General Medicine	• Venipuncture(I) • Intramuscular injection(I) • Intradermal injection(D) • Subcutaneousinjection(I) • Intra Venous (IV) injection(I) • Setting up IV infusion and calculating drip rate(I) • Blood transfusion (O) • Urinary catheterization(D) • Basic life support(D) • Oxygen therapy(I) • Aerosol therapy / nebulization(I) • Ryle's tube insertion(D) • Lumbar puncture(O) • Pleural and ascitic aspiration(O) • Cardiac resuscitation(D) • Peripheral blood smear interpretation(I)

	• Bedside urine analysis(D)
General Surgery	• Basic suturing(I) • Basic wound care(I)
	• Basic bandaging(I) • Incision and drainage of superficial abscess(I) • Early management of trauma (I) and trauma life support(D)
Orthopedics	• Application of basic splints and slings(I) • Basic fracture and dislocation management(O) • Compression bandage(I)
Gynecology	• Per Speculum (PS) and Per Vaginal (PV) examination(I) • Visual Inspection of Cervix with Acetic Acid (VIA)(O) • Pap Smear sample collection & interpretation(I) • Intra- Uterine Contraceptive Device (IUCD) insertion & removal(I)
Obstetrics	• Obstetric examination(I) • Episiotomy(I) • Normal labor and delivery (including partogram)(I)
Pediatrics	• Neonatal resuscitation(D) • Setting up Pediatric IV infusion and calculating drip rate(I) • Setting up Pediatric Intraosseous line(O)
Forensic Medicine	• Documentation and certification of trauma(I) • Diagnosis and certification of death(D) • Legal documentation related to emergency cases(D) • Certification of medical-legal cases e.g. Age estimation, sexual assault etc.(D) • Establishing communication in medico-legal cases with police, public health authorities, other concerned departments, etc. (D)
Otorhinolaryngology	• Anterior nasal packing (D) • Otoscopy(I)
Ophthalmology	• Visual acuity testing(I) • Digital tonometry(D) • Indirect ophthalmoscopy(O) • Epilation(O) • Eye irrigation(I) • Instillation of eye medication(I) • Ocular bandaging(I)
Dermatology	• Slit skin smear for leprosy(O) • Skin biopsy(O) • Gram's stained smear interpretation(I) • KOH examination of scrapings for fungus(D) • Dark ground illumination (O) • Tissue smear(O)

	• Cautery - Chemical and electrical(O)

I-Independently performed on patients, O- Observed in patients or on simulations, D-Demonstration on patients or simulations and performance under supervision in patients

Certification of Skills: Any faculty member of concerned department can certify skills. For common procedures, the certifying faculty may be decided locally.

2. Amendment to Ordinance V (2) & VII. [E.C Res. 15-6 dated 31.08.2021]

Course (Topics, Theory Practical, Laboratory Clinical)

GENERAL ANATOMY

S. No.	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	**Anatomical terminology**	**AN1.1** Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body	Theory / Practical
2.	**General features of Bones & Joints**	**AN1.2** Describe composition of bone and bone marrow **AN2.1** Describe parts, blood and nerve supply of a long bone **AN2.2** Enumerate laws of ossification **AN2.3** Enumerate special features of a sesamoid bone **AN2.4** Describe various types of cartilage with its structure & distribution in body **AN2.5** Describe various joints with subtypes and examples **AN2.6** Explain the concept of nerve supply of joints & Hilton's law	Theory / Practical/ Laboratory / Clinical

3.	**General features of Muscle**	**AN3.1** Classify muscle tissue according to structure & action **AN3.2** Enumerate parts of skeletal muscle and differentiate between tendon & aponeurosis with example **AN3.3** Explain Shunt and spurt muscles	Theory / Practical/ Laboratory / Clinical
4.	**General features of skin and fascia**	**AN4.1** Describe different types of skin & dermatomes in body **AN4.2** Describe structure & function of skin with its appendages **AN4.3** Describe superficial fascia along with fat distribution in body **AN 4.4** Describe modifications of deep fascia with its functions **AN4.5** Explain principles of skin incisions	Theory / Practical/ Laboratory / Clinical
5.	**General features of the cardiovascular system**	**AN5.1** Differentiate between blood vascular and lymphatic system **AN5.2** Differentiate between pulmonary and systemic circulation **AN5.3** List general differences between arteries & veins **AN5.4** Explain functional difference between elastic, muscular arteries and arterioles **AN5.5** Describe portal system giving examples **AN5.6** Describe the concept of anastomoses and collateral circulation with significance of end-arteries **AN5.7** Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses **AN5.8** Define thrombosis, infarction and aneurysm	Theory / Practical/ Laboratory / Clinical
6.	**General Features of lymphatic system**	**AN6.1** List the components and functions of the lymphatic system **AN6.2** Describe structure of lymph capillaries & mechanism of lymph circulation **AN6.3** Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	Theory / Practical/ Laboratory / Clinical
7.	**Introduction to the**	**AN7.1** Describe general plan of	Theory / Practical/

	nervous system	nervous system with components of central peripheral & autonomic nervous systems **AN7.2** List components of nervous tissue and their functions **AN7.3** Describe parts of a neuron and classify them based on number of neurites, size & function **AN7.4** Describe structure of a typical spinal nerve **AN7.5** Describe principles of sensory and motor innervation of muscles **AN7.6** Describe concept of loss of innervation of a muscle with its applied anatomy **AN7.7** Describe various type of synapse **AN7.8** Describe differences between sympathetic and spinal ganglia	Laboratory / Clinical

GENERAL HISTOLOGY

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	**Epithelium histology**	**AN65.1** Identify epithelium under the microscope & describe the various types that correlate to its function **AN65.2** Describe the ultrastructure of epithelium	Theory / Practical/Laboratory/ Clinical
2.	**Glands**	**AN70.1** Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	Theory / Practical/Laboratory/ Clinical
3.	**Connective tissue**	**AN66.1** Describe & identify various types of connective tissue with functional Correlation **AN66.2** Describe the ultrastructure of connective tissue	Theory / Practical/Laboratory/ Clinical
4.	**Cartilage**	**AN71.2** Identify cartilage under the microscope & describe various types and structure function correlation of the same	Theory / Practical/Laboratory/ Clinical

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
5.	**Bone**	**AN71.1** Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	Theory / Practical/Laboratory/ Clinical
6.	**Muscle**	**AN67.1** Describe & identify various types of muscle under the microscope **AN67.2** Classify muscle and describe the structure-function correlation of the Same **AN67.3** Describe the ultrastructure of muscular tissue	Theory / Practical/Laboratory/ Clinical
7.	**Cardiovascular system**	**AN 69.1** Identify elastic & muscular blood vessels, capillaries under the Microscope **AN 69.2** Describe the various types and structure-function correlation of blood Vessel **AN 69.3** Describe the ultrastructure of blood vessels	Theory / Practical/Laboratory/ Clinical
8.	**Lymphoid tissue**	**AN 70.2** Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	Theory / Practical/Laboratory/ Clinical
9.	**Nervous tissue**	**AN68.1** Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve **AN68.2** Describe the structure-function correlation of neuron **AN68.3** Describe the ultrastructure of nervous tissue	Theory / Practical/Laboratory/ Clinical
10.	**Integumentary System**	**AN 72.1** Identify the skin and its appendages under the microscope and correlate the structure with function	Theory / Practical/Laboratory/ Clinical

GENERAL EMBRYOLOGY & ETHICS

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	**Introduction to embryology**	**AN76.1** Describe the stages of human life **AN76.2** Explain the terms- phylogeny, ontogeny, trimester, viability	Theory / Practical/Laboratory/ Clinical
2.	**Gametogenesis and fertilization**	**AN77.1** Describe the uterine changes occurring during the menstrual cycle **AN77.2** Describe the synchrony between the ovarian and menstrual cycles **AN77.3** Describe spermatogenesis and oogenesis along with diagrams **AN77.4** Describe the stages and consequences of fertilisation **AN77.5** Enumerate and describe the anatomical principles underlying Contraception **AN77.6** Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio".	Theory / Practical/Laboratory/ Clinical
3.	**Second week of development**	**AN78.1** Describe cleavage and formation of blastocyst **AN78.2** Describe the development of trophoblast **AN78.3** Describe the process of implantation & common abnormal sites of implantation **AN78.4** Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate **AN78.5** Describe in brief abortion; decidual reaction, pregnancy test	Theory / Practical/Laboratory/ Clinical
4.	**3rd to 8th week of development**	**AN79.1** Describe the formation & fate of the primitive streak **AN79.2** Describe formation & fate of notochord **AN79.3** Describe the process of neurulation **AN79.4** Describe the development of somites and intra-embryonic	Theory / Practical/Laboratory/ Clinical

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
		coelom **AN79.5** Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects **AN79.6** Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	
5.	**Fetal membranes**	**AN80.1** Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois & decidua **AN80.2** Describe formation & structure of umbilical cord **AN80.3** Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier **AN80.4** Describe embryological basis of twinning in monozygotic & dizygotic twins **AN80.5** Describe role of placental hormones in uterine growth & parturition **AN80.6** Explain embryological basis of estimation of fetal age. **AN80.7** Describe various types of umbilical cord attachments	Theory / Practical/Laboratory/ Clinical
6.	**Prenatal Diagnosis**	**AN81.1** Describe various methods of prenatal diagnosis **AN81.2** Describe indications, process and disadvantages of amniocentesis **AN81.3** Describe indications, process and disadvantages of chorion villus biopsy	Theory / Practical/Laboratory/ Clinical
7.	**Ethics in laboratory**	**AN 82.1** Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue	

GENETICS

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	**Chromosomes**	**AN73.1** Describe the structure of chromosomes with classification **AN73.2** Describe technique of karyotyping with its applications **AN73.3** Describe the Lyon's hypothesis	Theory / Practical/Laboratory/ Clinical
2.	**Patterns of Inheritance**	**AN74.1** Describe the various modes of inheritance with examples **AN74.2** Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance **AN74.3** Describe multifactorial inheritance with examples **AN74.4** Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia	Theory / Practical/Laboratory/ Clinical
3.	**Principle of Genetics, Chromosomal Aberrations & Clinical Genetics**	**AN75.1** Describe the structural and numerical chromosomal aberrations **AN75.2** Explain the terms mosaics and chimeras with example **AN75.3** Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome **AN75.4** Describe genetic basis of variation: polymorphism and mutation **AN75.5** Describe the principles of genetic counselling	Theory / Practical/Laboratory/ Clinical

SYSTEMIC ANATOMY, HISTOLOGY & EMBRYOLOGY UPPER LIMB

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	Individual bone	**AN8.1** Identify the given bone, its side, important features & keep it in anatomical Position **AN8.2** Identify & describe joints formed by the given bone	**Practical/Laboratory/ Clinical**

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
		AN8.3 Enumerate peculiarities of clavicle **AN8.4** Demonstrate important muscle attachment on the given bone **AN8.5** Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform **AN8.6** Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	
2.	Pectoral region	**AN9.1** Describe attachment, nerve supply & action of pectoralis major & Pectoralis minor **AN9.2** Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied **AN9.3** Describe development of breast	Theory / Practical/Laboratory/ Clinical
3.	Axilla, Shoulder and Scapular region	**AN10.1** Identify & describe boundaries and contents of axilla **AN10.2** Identify, describe, and demonstrate the origin, extent, course, and parts relations branches of axillary artery and tributaries of vein **AN10.3** Describe, identify demonstrate formation, branches, relations area of supply of branches course and relations of terminal branches of brachial plexuses **AN10.4** Describe the anatomical groups of axillary lymph nodes and specify their area of drainage. **AN10.5** Explain variations in formation of brachial plexus **AN10.6** Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis **AN10.7** Explain anatomical basis of enlarged axillary lymph nodes **AN10.8** Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi **AN10.9** Describe the arterial anastomosis around the scapula and mention the Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation **AN10.10** Describe and identify the deltoid and rotator cuff muscles **AN10.11** Describe & demonstrate attachment of serratus anterior with its action **AN10.12** Describe and demonstrate shoulder	Theory / Practical/Laboratory/ Clinical

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
		joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy **AN10.13** Explain anatomical basis of Injury to axillary nerve during intramuscular injections.	
4	Arm & Cubital fossa	**AN11.1** Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii. **AN11.2** Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm **AN11.3** Describe the anatomical basis of Venepuncture of cubital veins **AN11.4** Describe the anatomical basis of Saturday night paralysis **AN11.5** Identify & describe boundaries and contents of cubital fossa **AN11.6** Describe the anastomosis around the elbow joint	Theory / Practical/Laboratory/ Clinical
5	Forearm & hand	**AN12.1** Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions **AN12.2** Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm **AN12.3** Identify & describe flexor retinaculum with its attachments **AN12.4** Explain anatomical basis of carpal tunnel syndrome **AN12.5** Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved **AN12.6** Describe & demonstrate movements of thumb and muscles involved **AN12.7** Describe & demonstrate movements of thumb and muscles involved nerves in hand. **AN12.8** Describe anatomical basis of Claw hand **AN12.9** Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths **AN12.10** Explain infection of fascial spaces of palm **AN12.11** Identify, describe and demonstrate important muscle groups of dorsal forearm	Theory / Practical/Laboratory/ Clinical

S.No	Topic	Competency	Theory / Practical/Laboratory/ Clinical
		with attachments, nerve supply and actions **AN12.12** Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm **AN12.13** Describe the anatomical basis of Wrist drop **AN12.14** Identify & describe compartments deep to extensor retinaculum **AN12.15** Identify & describe extensor expansion formation	
6.	**General Features, Joints, radiographs & surface marking**	**AN13.1** Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage **AN13.2** Describe dermatomes of upper limb **AN13.3** Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint **AN13.4** Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint **AN13.5** Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand **AN13.6** Identify & demonstrate important bony landmarks of upper limb Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula **AN13.7** Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis **AN13.8** Describe development of upper limb	Theory / Practical/Laboratory/ Clinical

THORAX

S.No.	Topic	Competency	Theory / Practical/Laboratory/ Clinical

1.	**Introduction & Thoracic wall**	**AN21.1** Identify and describe the salient features of sternum, typical rib, Ist rib and typical thoracic vertebra. **AN21.2** Identify & describe the features of 2nd, 11th and 12th ribs, 1st, 11th and 12th thoracic vertebrae **AN21.3** Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet **AN21.4** Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles **AN21.5** Describe & demonstrate origin, course, relations and branches of a typical intercostal Nerve **AN21.6** Mention origin, course and branches/ tributaries of: 1) anterior & posterior intercostal vessels 2) internal thoracic vessels **AN21.7** Mention the origin, course, 1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery elations and branches **AN21.8** Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints **AN21.9** Describe & demonstrate mechanics and types of respiration **AN21.10** Describe costochondral and interchondral joints	Theory / Practical/Laboratory/ Clinical
2.	**Mediastinum**	**AN21.11** Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum **AN23.1** Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus **AN23.2** Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy **AN23.3** Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos and accessory hemiazygos veins **AN23.4** Mention the extent, branches and relations of arch of aorta & descending thoracic aorta **AN24.4** Identify phrenic nerve & describe its formation & distribution **AN23.5** Identify & Mention the location and extent of thoracic sympathetic chain **AN23.6** Describe the splanchnic nerves **AN23.7** Mention the extent, relations and applied anatomy of lymphatic duct	Theory / Practical/Laboratory/ Clinical

3.	**Pleura, Lungs & Trachea**	**AN24.1** Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy **AN24.2** Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate **AN 24.3** Describe a bronchopulmonary segment **AN24.5** Mention the blood supply, lymphatic drainage and nerve supply of lungs **AN24.6** Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	Theory / Practical/Laboratory/ Clinical
4.	**Heart & Pericardium**	**AN22.1** Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium **AN22.2** Describe & demonstrate external and internal features of each chamber of heart **AN22.3** Describe & demonstrate origin, course and branches of coronary arteries **AN22.4** Describe anatomical basis of ischaemic heart disease **AN22.5** Describe & demonstrate the formation, course, tributaries and termination of coronary sinus **AN22.6** Describe the fibrous skeleton of heart **AN22.7** Mention the parts, position and arterial supply of the conducting system of heart	Theory / Practical/Laboratory/ Clinical
5.	**Radiology & Surface Marking**	**AN25.7** Identify structures seen on a plain x-ray chest (PA view) **AN25.8** Identify and describe in brief a barium swallow **AN25.9** Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	Theory / Practical/Laboratory/ Clinical
6.	**Embryology**	**AN25.2** Describe development of pleura, lung & heart **AN25.3** Describe fetal circulation and changes occurring at birth **AN25.4** Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula **AN25.5** Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta **AN25.6** Mention development of aortic arch	Theory / Practical/Laboratory/ Clinical

		arteries, SVC, IVC and coronary sinus	
7.	Histology	**AN25.1** Identify, draw and label a slide of trachea and lung	Theory / Practical/Laboratory/ Clinical

HEAD & NECK

S No	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
1.	**Skull osteology**	**AN26.1** Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull **AN26.2** Describe the features of norma frontalis, verticalis, occipitalis, lateralis and Basalis **AN26.3** Describe cranial cavity, its subdivisions, foramina and structures passing through them **AN26.4** Describe morphological features of mandible **AN26.5** Describe features of typical and atypical cervical vertebrae (atlas and axis) **AN26.6** Explain the concept of bones that ossify in membrane **AN26.7** Describe the features of the 7th cervical vertebra	**Practical/ Laboratory/ Clinical**
2.	**Scalp**	**AN27.1** Describe the layers of scalp, its blood supply, its nerve supply and surgical Importance **AN27.2** Describe emissary veins with its role in spread of infection from extracranial route to intracranial venous sinuses	Theory/ Practical/ Laboratory/ Clinical
3.	**Face & parotid region**	**AN28.1** Describe & demonstrate muscles of facial expression and their nerve supply **AN28.2** Describe sensory innervation of face **AN28.3** Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels **AN28.4** Describe & demonstrate branches of facial nerve with distribution **AN28.5** Describe cervical lymph nodes and lymphatic drainage of head, face and neck **AN28.6** Identify superficial muscles of face, their nerve supply and actions **AN28.7** Explain the anatomical basis of facial nerve palsy **AN28.8** Explain surgical importance of deep facial vein **AN28.9** Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	Theory/ Practical/ Laboratory/ Clinical

S No	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		AN28.10 Explain the anatomical basis of Frey's syndrome	
4.	**Posterior triangle of neck**	**AN29.1** Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid **AN29.2** Explain anatomical basis of Erb's & Klumpke's palsy **AN29.3** Explain anatomical basis of wry neck **AN29.4** Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2) scalenus anterior, 3) scalenus medius & 4) levator scapulae	Theory/ Practical/ Laboratory/ Clinical
5.	**Cranial cavity**	**AN30.1** Describe the cranial fossae & identify related structure **AN30.2** Describe & identify major foramina with structures passing through them **AN30.3** Describe & identify dural folds &dural venous sinuses **AN30.4** Describe clinical importance of dural venous sinuses **AN30.5** Explain effect of pituitary tumours on visual pathway	Theory/ Practical/ Laboratory/ Clinical
6.	**Orbit**	**AN31.1** Describe & identify extra ocular muscles of eyeball **AN31.2** Describe & demonstrate nerves and vessels in the orbit **AN31.3** Describe anatomical basis of Horner's syndrome **AN31.4** Enumerate components of lacrimal apparatus **AN31.5** Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	Theory/ Practical/ Laboratory/ Clinical
7.	**Anterior Triangle**	**AN32.1** Describe boundaries and subdivisions of anterior triangle **AN32.2** Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	Theory/ Practical/ Laboratory/ Clinical
8	**Temporal and Infratemporal regions**	**AN33.1** Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae **AN33.2** Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication **AN33.3** Describe & demonstrate articulating surface, type & movements of temporomandibular joint	Theory/ Practical/ Laboratory/ Clinical

S No	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		AN33.4 Explain the clinical significance of pterygoid venous plexus **AN33.5** Describe the features of dislocation of temporomandibular joint	
9	**Submandibular region**	**AN34.1** Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion **AN34.2** Describe the basis of formation of submandibular stones	Theory/ Practical/ Laboratory/ Clinical
10	**Deep structures in the neck**	**AN35.1** Describe the parts, extent, attachments, modifications of deep cervical Fascia **AN35.2** Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland **AN35.3** Demonstrate & describe the origin, parts, course & branches subclavian artery **AN35.4** Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins **AN35.5** Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes **AN35.6** Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain **AN35.7** Describe the course and branches of IX, X, XI & XII nerve in the neck **AN35.8** Describe the anatomically relevant clinical features of Thyroid swellings **AN35.9** Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib **AN35.10** Describe the fascial spaces of neck	
11	**Mouth, Pharynx & Palate**	**AN36.1** Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate **AN36.2** Describe the components and functions of Waldeyer's lymphatic ring **AN36.3** Describe the boundaries and clinical significance of pyriform fossa **AN36.4** Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess **AN36.5** Describe the clinical significance of Killian's dehiscence	Theory/ Practical/ Laboratory/ Clinical
12	**Cavity of Nose**	**AN37.1** Describe & demonstrate features of	Theory/ Practical/

S No	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		nasal septum, lateral wall of nose, their blood supply and nerve supply **AN37.2** Describe location and functional anatomy of paranasal sinuses **AN37.3** Describe anatomical basis of sinusitis & maxillary sinus tumours	Laboratory/ Clinical
13	**Larynx**	**AN38.1** Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx **AN38.2** Describe the anatomical aspects of laryngitis **AN38.3** Describe anatomical basis of recurrent laryngeal nerve injury	Theory/ Practical/ Laboratory/ Clinical
14	**Tongue**	**AN39.1** Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue **AN39.2** Explain the anatomical basis of hypoglossal nerve palsy	Theory/ Practical/ Laboratory/ Clinical
15	**Organs of hearing and equilibrium**	**AN40.1** Describe & identify the parts, blood supply and nerve supply of external Ear **AN40.2** Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube **AN40.3** Describe the features of internal ear **AN40.4** Explain anatomical basis of otitis externa and otitis media **AN40.5** Explain anatomical basis of myringotomy	Theory/ Practical/ Laboratory/ Clinical
16	**Eyeball**	**AN41.1** Describe & demonstrate parts and layers of eyeball **AN41.2** Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion **AN41.3** Describe the position, nerve supply and actions of intraocular muscles	Theory/ Practical/ Laboratory/ Clinical
17	**Back Region**	**AN42.1** Describe the contents of the vertebral canal **AN42.2** Describe & demonstrate the boundaries and contents of Suboccipital triangle **AN42.3** Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis	Theory/ Practical/ Laboratory/ Clinical
18	**Head & neck Joints**	**AN43.1** Describe & demonstrate the movements with muscles producing the	Theory/ Practical/ Laboratory/ Clinical

S No	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		movements of atlantooccipital joint & atlantoaxial joint	
19	Histology	**AN43.2** Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina **AN43.3** Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea-organ of corti, pineal gland	Theory/ Practical/ Laboratory/ Clinical
20	Development	**AN43.4** Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	Theory/ Practical/ Laboratory/ Clinical
21	Radiology & Surface marking	**AN43.5** Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels **AN43.6** Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve **AN43.7** Identify the anatomical structures in 1) Plain X-ray skull, 2) AP view and lateral view 3) Plain X-ray cervical spine-AP and lateral view 4) Plain X-ray of paranasal sinuses **AN43.8** Describe the anatomical route used for carotid angiogram and vertebral Angiogram **AN43.9** Identify anatomical structures in carotid angiogram and vertebral angiogram	Theory/ Practical/ Laboratory/ Clinical

NEUROANATOMY

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical

1	**Meninges & CSF**	**AN56.1** Describe & identify various layers of meninges with its extent & modifications **AN56.2** Describe circulation of CSF with its applied anatomy	Theory/Practical/Laboratory/ Clinical
2	**Spinal cord**	**AN57.1** Identify external features of spinal cord **AN57.2** Describe extent of spinal cord in child & adult with its clinical implication **AN57.3** Draw & label transverse section of spinal cord at mid-cervical & midthoracic level **AN57.4** Enumerate ascending & descending tracts at mid thoracic level of spinal cord **AN57.5** Describe anatomical basis of syringomyelia	Theory / Practical/Laboratory/ Clinical
3	**Medulla Oblongata**	**AN58.1** Identify external features of medulla oblongata **AN58.2** Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) ION **AN58.3** Enumerate cranial nerve nuclei in medulla oblongata with their functional group **AN58.4** Describe anatomical basis & effects of medial & lateral medullary syndrome	Theory / Practical/Laboratory/ Clinical
4	**Pons**	**AN59.1** Identify external features of pons **AN59.2** Draw & label transverse section of pons at the upper and lower level **AN59.3** Enumerate cranial nerve nuclei in pons with their functional group	Theory / Practical/ Laboratory/ Clinical
5	**Cerebellum**	**AN60.1** Describe & demonstrate external & internal features of cerebellum **AN60.2** Describe connections of cerebellar cortex and intracerebellar nuclei **AN60.3** Describe anatomical basis of cerebellar dysfunction	Theory / Practical/ Laboratory/ Clinical
6	**Midbrain**	**AN61.1** Identify external & internal features of midbrain **AN61.2** Describe internal features of midbrain at the level of superior & inferior colliculus **AN61.3** Describe anatomical basis & effects of Benedikt's and Weber's syndrome	Theory / Practical/Laboratory/ Clinical

7	**Cranial nerve nuclei & Cerebral hemispheres**	**AN62.1** Enumerate cranial nerve nuclei with its functional component **AN62.2** Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere **AN62.3** Describe the white matter of cerebrum **AN62.4** Enumerate parts & major connections of basal ganglia & limbic lobe **AN62.5** Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus **AN62.6** Describe & identify formation, branches & major areas of distribution of circle of Willis	Theory / Practical/ Laboratory/ Clinical
8	**Ventricular system**	**AN63.1** Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle **AN63.2** Describe anatomical basis of congenital hydrocephalus	Theory / Practical/Laborator y/ Clinical
9	**Histology & Embryology**	**AN64.1** Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum **AN64.2** Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum **AN64.3** Describe various types of open neural tube defects with its embryological basis	Theory / Practical/Laborator y/ Clinical

LOWER LIMB

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
1.	**Features of individual bones**	**AN14.1** Identify the given bone, its side, important features & keep it in anatomical position **AN14.2** Identify & describe joints formed by the given bone **AN14.3** Describe the importance of ossification of lower end of femur & upper end of tibia. **AN14.4** Identify and name various bones in the articulated foot with individual muscle attachment.	Theory/ Practical/ Laboratory/ Clinical
2.	**Front & Medial side of thigh**	**AN15.1** Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	Theory/ Practical/ Laboratory/ Clinical

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		AN15.2 Describe and demonstrate major muscles with their attachment, nerve supply and actions **AN15.3** Describe and demonstrate boundaries, floor, roof and contents of femoral triangle **AN15.4** Explain anatomical basis of Psoas abscess & Femoral hernia **AN15.5** Describe and demonstrate adductor canal with its content	
3.	**Gluteal region & back of thigh**	**AN16.1** Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region **AN16.2** Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections **AN16.3** Explain the anatomical basis of Trendelenburg sign **AN16.4** Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions **AN16.5** Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh **AN16.6** Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa	Theory/ Practical/ Laboratory/ Clinical
4.	**Hip joint**	**AN17.1** Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint **AN17.2** Describe anatomical basis of complications of fracture neck of femur **AN17.3** Describe dislocation of hip joint and surgical hip replacement	Theory/ Practical/ Laboratory/ Clinical
5.	**Knee joint, Anterolateral compartment of leg & dorsum of foot**	**AN18.1** Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions **AN18.2** Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg **AN18.3** Explain the anatomical basis of foot	Theory/ Practical/ Laboratory/ Clinical

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		drop **AN18.4** Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint **AN18.5** Explain the anatomical basis of locking and unlocking of the knee joint **AN18.6** Describe knee joint injuries with its applied anatomy **AN18.7** Explain anatomical basis of Osteoarthritis	
6.	**Back of Leg & Sole**	**AN19.1** Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions **AN19.2** Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg **AN19.3** Explain the concept of "Peripheral heart" **AN19.4** Explain the anatomical basis of rupture of calcaneal tendon **AN19.5** Describe factors maintaining importance arches of the foot with its attachment **AN19.6** Explain the anatomical basis of Flat foot & Club foot **AN19.7** Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	Theory/ Practical/ Laboratory/ Clinical
7.	**General Features, Joints, radiographs & surface marking**	**AN20.1** Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint **AN20.2** Describe the subtalar and transverse tarsal joints **AN20.3** Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb **AN20.4** Explain anatomical basis of enlarged inguinal lymph nodes **AN20.5** Explain anatomical basis of varicose veins and deep vein thrombosis **AN20.6** Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb **AN20.7** Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior	Theory/ Practical/ Laboratory/ Clinical

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
		superior iliac spines, iliactubercle, pubic tubercle, ischial tuberosity, adductor tubercle, - Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal tuberosity of the navicular **AN20.8** Identify & demonstrate palpation of femoral, popliteal, post tibial, anti-tibial & dorsalis pedis blood vessels in a simulated environment **AN20.9** Identify & demonstrate Palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins **AN20.10** Describe basic concept of development of lower limb	

ABDOMEN

S. No.	Topic	Competencies	Theory/ Practical/ Laboratory/ Clinical
1.	**Anterior abdominal wall**	**AN44.1** Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & quadrants of abdomen **AN44.2** Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall **AN44.3** Describe the formation of rectus sheath and its contents **AN44.4** Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. **AN44.5** Explain the anatomical basis of inguinal hernia. **AN44.6** Describe & demonstrate attachments of muscles of anterior abdominal wall **AN44.7** Enumerate common Abdominal incisions	**Theory / Practical/Laborator y/ Clinical**
2.	**Posterior abdominal wall**	**AN45.1** Describe Thoracolumbar fascia **AN45.2** Describe & demonstrate Lumbar plexus for its root value, formation & branches **AN45.3** Mention the major subgroups of back muscles, nerve supply and action	**Theory / Practical/Laborator y/ Clinical**

3.	**Male external genitalia**	**AN46.1** Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy **AN46.2** Describe parts of Epididymis **AN46.3** Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage) **AN46.4** Explain the anatomical basis of Varicocoele **AN46.5** Explain the anatomical basis of Phimosis & Circumcision	**Theory / Practical/Laborator y/ Clinical**
4.	**Abdominal cavity**	**AN47.1** Describe & identify boundaries and recesses of Lesser & Greater sac **AN47.2** Name & identify various peritoneal folds & pouches with its explanation **AN47.3** Explain anatomical basis of Ascites & Peritonitis **AN47.4** Explain anatomical basis of Subphrenic abscess **AN47.5** Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects) **AN47.6** Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach **AN47.7** Mention the clinical importance of Calot's triangle **AN47.8** Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein **AN47.9** Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery **AN47.10** Enumerate the sites of portosystemic anastomosis **AN47.11** Explain the anatomic basis of hematemesis & caput medusae in portal hypertension **AN47.12** Describe important nerve plexuses of posterior abdominal wall	Theory / Practical/Laboratory / Clinical

		AN47.13 Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm **AN47.14** Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	
5.	Osteology	**AN53.1** Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups **AN53.2** Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet **AN53.3** Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	
6.	Vertebral column	**AN50.1** Describe the curvatures of the vertebral column **AN50.2** Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis **AN50.3** Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture) **AN50.4** Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	Theory / Practical/Laboratory / Clinical
7.	Sectional Anatomy	**AN51.1** Describe & identify the cross section at the level of T8, T10 and L1 (transpyloric plane)	Theory / Practical/Laboratory / Clinical
8.	Histology & Embryology	**AN52.1** Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland **AN52.2** Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder **AN52.3** Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum **AN52.4** Describe the development of anterior abdominal wall **AN52.5** Describe the development and congenital anomalies of Diaphragm	Theory / Practical/Laboratory/ Clinical

9.	Osteology	**AN53.1** Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups **AN53.4** Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	Practical/Laboratory/ Clinical
10.	Radiodiagnosis	**AN54.1** Describe & identify features of plain X ray abdomen **AN54.2** Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography) **AN54.3** Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	Theory / Practical/Laboratory/ Clinical
11.	Surface marking	**AN55.1** Demonstrate the surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point **AN55.2** Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesenter	Theory / Practical/Laboratory/ Clinical

PELVIS & PERINEUM

S.No.	Topic	Competency	Theory / Practical/Laboratory/ Clinical
1.	Pelvic wall and viscera	**AN53.2** Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet **AN53.3** Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis **AN48.1** Describe & identify the muscles of Pelvic diaphragm **AN48.2** Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera **AN48.3** Describe & demonstrate the origin, course, important relations and branches of internal iliac artery **AN48.4** Describe the branches of sacral	Theory / Practical/Laboratory/ Clinical

S.No.	Topic	Competency	Theory / Practical/Laboratory/ Clinical
		plexus **AN48.5** Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation **AN48.6** Describe the neurological basis of Automatic bladder **AN48.7** Mention the lobes involved in benign prostatic hypertrophy & prostatic Cancer **AN48.8** Mention the structures palpable during vaginal & rectal examination **AN51.2** Describe & identify the midsagittal section of male and female pelvis	
2.	Perineum	**AN49.1** Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents) **AN49.2** Describe & identify Perineal body **AN49.3** Describe & demonstrate Perineal membrane in male & female **AN49.4** Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa **AN49.5** Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	
3.	Histology	**AN52.8** Describe & identify the microanatomical features of: Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & Penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord **AN52.7** Urinary system: Kidney, Ureter & Urinary bladder	
4.	Embryology	**AN52.7** Describe the development of Urinary system **AN52.8** Describe the development of male & female reproductive system	
5.	Radiology	**AN54.2** Describe & identify the special radiographs of abdominopelvic region: Hysterosalpingography	

- **TEACHING LEARNING METHODS**

  a) Didactic lectures

b) Cadaveric dissection
c) Study of prosecuted specimens
d) Study of histology slides
e) Study of Embryology models
f) Learning surface anatomy
g) Learning radiological Anatomy
h) Small group teaching for demonstration of bones
i) AETCOM
j) Early Clinical exposure by showing videos and hospital visits
k) Self-directed learning by arranging seminars
l) Problem based learning

- **ASSESSMENT**

(a) Formative

Gross Anatomy will be taught under the following headings:

- General Anatomy
- Neuroanatomy
- Head and Neck
- Upper limb
- Thorax
- Abdomen
- Pelvis
- Lower limb

Stages during the part and Grand stages at the completion of the part of the human body being taught will be taken.

(b) Internal Assessment

I term exam:

Theory 100 marks

Practical 100 marks

II term exam:

Theory 100 marks

Practical 100 marks

Sent up

Theory

Paper 1: 100 marks

Paper 2: 100 marks

Practical 100 marks

Assessment theory: Percentage of I term + II term + Sent up theory marks

Assessment Practical: Percentage of I term + II term + Sent up Practical marks

Minimum of 50% combined in theory and Practical (not less than 40% in each) in internal exams for eligibility for appearing for University examinations.

(c) Summative theory practical & Viva Voce pattern with distribution of marks

FIRST PROFESSIONAL

Theory Paper- Anatomy

PAPER- I **100 Marks**

Topics: General Histology, General Anatomy, Neuroanatomy, Head and Neck and Upper limb and related histology and embryology

PAPER- II **100 Marks**

Topics: General embryology, Principles of Genetics, Thorax, Abdomen, Pelvis and Perineum, Lower Limb and related Histology and Embryology

THEORY QUESTION PAPER FORMAT

(Applicable for Paper – I and Paper -II)

Part I

1. MCQs (10MCQs) 20 marks

Part II

2.

(a) Enumerate 2x5=10 marks

i) ii) iii) iv) v)

(b) Write briefly on 2x 5= 10 marks

i) ii) iii) iv) v)

3. Draw labeled diagrams of the following 4x5=20 Marks

i) ii) iii) iv)

Part III

4. Structured long question 10 marks

5. Write short notes on 3X5=15 marks

i) ii) iii)

6. Write anatomical /embryological basis of 3X5=15 marks

i) ii) iii)

Practical	**100 marks**
Section	**Marks**
Spotting	20
Hard Parts	20
Soft parts	20
Histology (2 Slides + Viva)	10
Embryology (Models + Viva)	10
Radiology viva	8
Living anatomy	6
Problem solving	6

Criteria for passing Professional examination

- 50% marks are mandatory in Theory (Theory papers only) and Practical (Practical + Viva) separately
- Internal assessment marks will not be added to the University examination and will be shown separately in the grade card.

3. Amendment to Ordinance V (2) & VII. [E.C Res. 15-6 dated 31.08.2021]

BIOCHEMISTRY

Course of UG MBBS Graduate in First Semester

Main Topic	Competencies (Theory)
Basic Biochemistry	1. Describe the molecular and functional organization of a cell and its sub cellular components
Enzymes	1. Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature 2. Describe and explain the basic principles of enzyme activity 3. Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes 4. Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions. 5. Discuss use of enzymes in laboratory investigations (Enzyme-based assays)
Chemistry and metabolism of carbohydrates	1. Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body 2. Describe the processes involved in digestion and assimilation of carbohydrates and storage. 3. Define and differentiate the pathways of carbohydrate metabolism (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt). 4. Describe and discuss the regulation, functions and integration of Carbohydrate along with associated diseases/disorders. 5. Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation 6. Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate) 7. Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates. 8. Discuss the mechanism and significance of blood glucose regulation in health and disease. 9. Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism. 10. Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.

Chemistry and metabolism of lipids	1. Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions. 2. Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism 3. Explain the regulation of lipoprotein metabolism & associated disorders. 4. Describe the structure and functions of lipoproteins, their functions, Interrelations & relations with atherosclerosis 5. Interpret laboratory results of analytes associated with metabolism of lipids 6. Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.
Chemistry and metabolism of proteins	1. Describe and discuss structural organization of proteins. 2. Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies 3. Describe the digestion and absorption of dietary proteins. 4. Describe common disorders associated with protein metabolism 5. Interpret laboratory results of analytes associated with metabolism of proteins
Chemistry and metabolism of nucleotides	1. Describe and discuss the metabolic processes in which nucleotides are involved. 2. Describe the common disorders associated with nucleotide metabolism. 3. Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome
Biochemical role of Vitamins and Minerals	1. Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency 2. Describe the functions of various minerals in the body, their metabolism and homeostasis. 3. Enumerate and describe the disorders associated with mineral metabolism
Biological oxidation and ATP generation	1. Describe the biochemical processes involved in generation of energy in cells.
Water, electrolyte, pH and buffers	1. Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these. 2. Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.
Heme chemistry and Metabolism	1. Describe the functions of heme in the body and describe the processes involved in its metabolism and describe porphyrin metabolism. 2. Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.
Biochemical	1. Describe the functions of the kidney, liver, thyroid and adrenal glands

functions and tests of Kidney, Liver, Adrenals, Thyroid	2. Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands). 3. Describe the abnormalities of kidney, liver, thyroid and adrenal glands
Molecular	1. Describe the structure and functions of DNA and RNA and outline the cell cycle 2. Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms 3. Describe gene mutations and basic mechanism of regulation of gene expression. 4. Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.
Xenobiotics	1. Describe the role of xenobiotics in disease.
Anti-oxidants, Free radicals and anti oxidative stress	1. Describe the anti-oxidant defence systems in the body 2. Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.
Diet, Nutrition	1. Discuss the importance of various dietary components and explain importance of dietary fibre. 2. Describe the types and causes of protein energy malnutrition and its effects. 3. Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy. 4. Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obese. 5. Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules and its importance)
ECM and glycoproteins	1. List the functions and components of the extracellular matrix (ECM). 2. Discuss the involvement of ECM components in health and disease.
Protein Targetting	1. Describe protein targeting and sorting along with its associated disorders.
Cancer and Apoptosis	1. Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis. 2. Describe various biochemical tumor markers and the biochemical basis of cancer therapy.
Immunology	1. Describe the cellular and humoral components of the immune system & describe the types and structure of antibody. 2. Describe & discuss innate and adaptive immune responses, self/non-self-recognition and the central role of T-helper cells in immune responses. 3. Describe antigens and concepts involved in vaccine development.

Demonstrations
Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.
Describe the preparation of buffers and estimation of pH.
Describe the chemical components of normal urine
Describe screening of urine for inborn errors & describe the use of paper chromatography
Describe the principles of Colorimetry
Demonstrate the estimation of serum total Cholesterol and HDL Cholesterol
Demonstrate the estimation of Triglycerides
Demonstrate the estimation of Calcium and Phosphorus
Demonstrate the estimation of SGOT/ SGPT
Demonstrate the estimation of Alkaline phosphatase
Describe & discuss the composition of CSF.
Observe use of commonly used equipments/techniques in biochemistry laboratory including: pH meter Paper chromatography of amino acid Protein electrophoresis TLC, PAGE Electrolyte analysis by ISE ELISA Immunodiffusion Autoanalyser Quality control DNA isolation from blood/ tissue
Problem based learning
Explain the basis and rationale of biochemical tests done in the following conditions: - diabetes mellitus, - dyslipidemia, - myocardial infarction, - renal failure, gout, - proteinuria, - nephrotic syndrome, - edema, - jaundice, - liver diseases, pancreatitis, disorders of acid- base balance, - thyroid disorders
Combined in Lecture content
Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.
Practical
Identify abnormal constituents in urine, interpret the findings and correlate these with

pathological states.
Demonstrate estimation of glucose.
Demonstrate estimation of Albumin. Calculate albumin: globulin (AG) ratio
Demonstrate the estimation of serum creatinine and creatinine clearance
Demonstrate the estimation of serum bilirubin
Demonstrate estimation of urea
Demonstrate estimation of Total protein

- **TEACHING LEARNING METHODS**

Competency	Demo	Lecture /Small group discussion	DOAP	Certifiable competency
BI 1.1 Cell organisation		✔		
BI 2.2-2.7 Enzymes		✔		
B1 3.1-3.10 Carbohydrate chemistry and metabolism		✔		
BI 4.1-4.7 Lipid chemistry and metabolism		✔		
BI 5.1-5.7 Protein chemistry and metabolism		✔		
BI 6.1 Integration of metabolism		✔		
BI 6.2-6.4 Nucleotide metabolism		✔		
BI 6.7-6.8 Ph and ABG		✔		
BI 6.9-6.10 Mineral Metabolism		✔		
BI 6.11-6.12 Haemoglobin		✔		
BI 6.13-6.15 Organ function test		✔		
BI 7.1-7.4 DNA transcription, translation and recombinant DNA		✔		
BI 7.5 XENOBIOTICS		✔		
BI 7.6-7.7 Free Radical		✔		
BI 8.1-8.5 Diet and nutrition Obesity/CAD/DM		✔		
BI 9.1-9.2 Extracellular Matrix		✔		

BI 9.3 Protein targeting		✔		
BI 10.1-10.2 Cancer and cancer marker		✔		
BI 10.3-10.5 Immunology		✔		

Teaching learning methods of Topics covered in Practical Biochemistry classes				
COMPETENCIES	DEMO	LECTURE/ SG D	DOAP	CERTIFIABLE COMPETENCIES
BI 11.1 Laboratory apparatus and good laboratory practices	✔	✔		
BI 11.2 Ph determination	✔	✔	✔	
BI 11.3,11.4 Urine Examination	✔	✔	✔	✔
BI 11.5 Paper Chromatography		✔		
BI 11.6 Colorimetry	✔	✔	✔	
BI 11.7 Creatinine estimation/clearence	✔	✔	✔	
BI 11.8 Serum protein/albumin	✔	✔	✔	✔
BI 11.9 Total cholesterol/HDL		✔		
BI 11.10 Triglycerides		✔		
BI 11.11 Calcium and phosphorus		✔		
BI 11.12 Serum Bilirubin	✔	✔	✔	
BI 11.13 SGOT/SGPT Demo	✔	✔		
BI 11.14 Alkaline Phosphtase	✔	✔		
BI 11.15 CSF Compostion		✔		
BI 11.16 Equipment and technique Ph,PAGE,electrophoresis,ISE ABG analyser, ELISA, Immunodiffusion, autoana lyser Quality control,DNA isolation.	✔	✔		
BI 11.17 Biochemical test for diabetes, dyslipidemia, Myocardial infarction, renal failure, proteinuria, nephroticsyndrome, edema, jaundice, liver disease and acid base balance disorder and thyroid disorder.	✔	✔		
BI 11.18 Principles of spectrophotometry	✔	✔		
BI 11.19 Basic principles of functioning of biochemistry instrument		✔		
BI 11.20 Correlation of abnormal urine findings with pathological condition	✔	✔	✔	✔
BI 11.21 Demonstration of estimation of glucose, creainine,urea, and total protein	✔	✔	✔	✔
BI 11.22 A:G ratio and creatinine clearance	✔	✔	✔	✔

calculation				
BI 11.23 Calculate energy content of different food items		✔		
BI 11.24 Advantage /disadvantage of MUFA,PUFA		✔		

ASSESSMENT:

Formative Assessment - One assessment per month.

Internal Assessment - 40 % Marks separately in theory and practical (To be able to appear in the 1st professional Exam)

- Minimum 50% in theory and practical combined for declaration of final result by university.

Summative exam - Theory, Practical & Viva Voce pattern with distribution of marks is as follows

	Theory	**Practical and viva**
Ist Term	Total marks= 100 One paper (20% MCQs) i.e. 80 Marks theory paper and 20 marks for MCQs)	Total marks= 100 (80 marks practical and 20 marks grand viva (from theory)
IInd Term	Total MARKS=100 One paper (20% MCQs) i.e 80 Marks theory paper and 20 marks for MCQs)	Total marks= 100 (80 marks practical and 20 marks grand viva (from theory)
Sent up	Total MARKS=200 Two paper (20% MCQs) i.e 80 Marks theory paper and 20 marks for MCQs) for each	Total marks= 100 (80 marks practical and 20 marks grand viva (from theory)
Professional exam	Total MARKS=200 Two paper (20% MCQs) i.e. 80 Marks theory paper and 20 marks for MCQs) for each	Total marks= 100 (80 marks practical and 20 marks grand viva (from theory)

MCQs (20 marks per theory paper): Mandatory, all five types of MCQs covering all broad areas of biochemistry (60% applied and 40% recall). No negative marking and time allotted: 30 minutes.

Theory paper (100 marks for each, wherever applicable), all questions must be structured. At least 80% questions should be from the must know area. The distribution will be as follows:

- **Section A** (20 marks) will be MCQs (as mentioned above),
  - 12 single response – 01 mark each
  - 2 reason assertion – 02 marks each
  - 1 Matching – 04 marks each
- **Section B** (40 marks): Clinical case based long structured question (10 marks), structured, short notes (2.5x4=10 marks), Explain Why (10 marks) and compare and contrast (10 marks)
- **Section C**: Clinical case based long structured question (10 marks), structured short notes (10 marks), Explain Why (10 marks) and compare and contrast (10 marks) Practicals: 80 marks practical and 20 marks grand viva (from theory). The competencies that need to be certified will be covered by OSPEs. At least 80% questions should be from the must know area. The distribution will be as follows:
- **OSPEs** (40 marks)
- **Section B** (40 marks): Serum analysis (20 marks for professional exam, for the rest of the examinations as mentioned above 15 marks and 5 marks will be for the practical file), urine analysis (10 marks), and Bench viva (10 marks).

4. Amendment to Ordinance V (2) & VII. [E.C Res. 15-6 dated 31.08.2021]

COURSE CONTENT OF HUMAN PHSYIOLOGY

General Physiology

PY1.1 Describe the structure and functions of a mammalian cell
PY1.2 Describe and discuss the principles of homeostasis
PY1.3 Describe intercellular communication
PY1.4 Describe apoptosis – programmed cell death
PY1.5 Describe and discuss transport mechanisms across cell membranes
PY1.6 Describe the fluid compartments of the body, its ionic composition & measurements
PY1.7 Describe the concept of pH & Buffer systems in the body
PY1.8 Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue
PY1.9 Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research.

Haematology

PY2.1 Describe the composition and functions of blood components
PY2.2 Discuss the origin, forms, variations and functions of plasma proteins
PY2.3 Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin
PY2.4 Describe RBC formation (erythropoiesis & its regulation) and its functions

PY2.5 Describe different types of anaemias & Jaundice

PY2.6 Describe WBC formation (granulopoiesis) and its regulation

PY2.7 Describe the formation of platelets, functions and variations.

PY2.8 Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)

PY2.9 Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion

PY2.10 Define and classify different types of immunity. Describe the development of immunity and its regulation

PY2.11 Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT

PY2.12 Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc.

PY2.13 Describe steps for reticulocyte and platelet count

Nerve and Muscle Physiology

PY3.1 Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines

PY3.2 Describe the types, functions & properties of nerve fibers

PY3.3 Describe the degeneration and regeneration in peripheral

PY3.4 Describe the structure of neuro-muscular junction and transmission of impulses

PY3.5 Discuss the action of neuro-muscular blocking agents

PY3.6 Describe the pathophysiology of Myasthenia gravis

PY3.7 Describe the different types of muscle fibres and their structure

PY3.8 Describe action potential and its properties in different muscle types (skeletal & smooth)

PY3.9 Describe the molecular basis of muscle contraction in skeletal and in smooth muscles

PY3.10 Describe the mode of muscle contraction (isometric and isotonic)

PY3.11 Explain energy source and muscle metabolism

PY3.12 Explain the gradation of muscular activity

PY3.13 Describe muscular dystrophy:

PY3.14 Perform Ergography

PY3.15 Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters

PY3.16 Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment

PY3.17 Describe Strength-duration curve

PY3.18 Observe with Computer assisted learning (i) amphibian nerve -muscle experiments (ii) amphibian cardiac experiments

Gastrointestinal Physiology

PY4.1 Describe the structure and functions of digestive system

PY4.2 Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion

PY4.3 Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.

PY4.4 Describe the physiology of digestion and absorption of nutrients. Describe the source of GIT hormones, their regulation and functions

PY4.5 Describe the Gut-Brain Axis

PY4.6 Describe & discuss the structure and functions of liver and gall bladder

PY4.7 Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests

PY4.8 Discuss the physiology aspects of: peptic ulcer, gastrooesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease

PY4.9 Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment

Cardiovascular Physiology

PY5.1 Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.

PY5.2 Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions

PY5.3 Discuss the events occurring during the cardiac cycle

PY5.4 Describe generation, conduction of cardiac impulse

PY5.5 Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis

PY5.6 Describe abnormal ECG, arrythmias, heart block and myocardial Infarction

PY5.7 Describe and discuss haemodynamics of circulatory system

PY5.8 Describe and discuss local and systemic cardiovascular regulatory mechanisms

PY5.9 Describe the factors affecting heart rate, regulation of cardiac output & blood pressure

PY5.10 Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation

PY5.11 Describe the patho-physiology of shock, syncope and heart failure

PY5.12 Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment

PY5.13 Record and interpret normal ECG in a volunteer or simulated environment

PY5.14 Observe cardiovascular autonomic function tests in a volunteer or simulated environment

PY5.15 Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment

PY5.16 Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment

Respiratory Physiology

PY6.1 Describe the functional anatomy of respiratory tract

PY6.2 Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs

PY6.3 Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide

PY6.4 Describe and discuss the physiology of high altitude and deep sea diving

PY6.5 Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.

PY6.6 Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing

PY6.7 Describe and discuss lung function tests & their clinical significance

PY6.8 Demonstrate the correct technique to perform & interpret Spirometry

PY6.9 Demonstrate the correct clinical examination of the respiratory system in a normal volunteer

or simulated environment

PY6.10 Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment

Renal Physiology

PY7.1 Describe structure and function of kidney

PY7.2 Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system

PY7.3 Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism

PY7.4 Describe & discuss the significance & implication of Renal clearance

PY7.5 Describe the renal regulation of fluid and electrolytes & acid-base balance

PY7.6 Describe the innervations of urinary bladder, physiology of micturition and its abnormalities

PY7.7 Describe artificial kidney, dialysis and renal transplantation

PY7.8 Describe & discuss Renal Function Tests

PY7.9 Describe cystometry and discuss the normal cystometrogram

Endocrine Physiology

PY8.1 Describe the physiology of bone and calcium metabolism

PY8.2 Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus

PY8.3 Describe the physiology of Thymus & Pineal Gland

PY8.4 Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas

PY8.5 Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome.

PY8.6 Describe & differentiate the mechanism of action of steroid, protein and amine hormones

Reproductive Physiology

PY9.1 Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.

PY9.2 Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.

PY9.3 Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness

PY9.4 Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes

PY9.5 Describe and discuss the physiological effects of sex hormones

PY9.6 Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages

PY9.7 Describe and discuss the effects of removal of gonads on physiological functions

PY9.8 Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.

PY9.9 Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the results

PY9.10 Discuss the physiological basis of various pregnancy tests

PY9.11 Discuss the hormonal changes and their effects during perimenopause and menopause

PY9.12 Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.

Neurophysiology

PY10.1 Describe and discuss the organization of nervous system

PY10.2 Describe and discuss the functions and properties of synapse, reflex, receptors

PY10.3 Describe and discuss somatic sensations & sensory tracts

PY10.4 Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus

PY10.5 Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)

PY10.6 Describe and discuss Spinal cord, its functions, lesion & sensory disturbances

PY10.7 Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities

PY10.8 Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production

PY10.9 Describe and discuss the physiological basis of memory, learning and speech

PY10.10 Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).

PY10.11 Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment

PY10.12 Identify normal EEG forms S S Y Small group teaching OSPE/Viva voce Psychiatry

PY10.13 Describe and discuss perception of smell and taste sensation

PY10.14 Describe and discuss patho-physiology of altered smell and taste sensation

PY10.15 Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing

PY10.16 Describe and discuss pathophysiology of deafness. Describe hearing tests

PY10.17 Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light Reflex

PY10.18 Describe and discuss the physiological basis of lesion in visual pathway

PY10.19 Describe and discuss auditory & visual evoke potentials

PY10.20 Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment

Integrated Physiology

PY11.1 Describe and discuss mechanism of temperature regulation

PY11.2 Describe and discuss adaptation to altered temperature (heat and cold)

PY11.3 Describe and discuss mechanism of fever, cold injuries and heatstroke

PY11.4 Describe and discuss cardio-respiratory and metabolic adjustments during exercise; physical training effects

PY11.5 Describe and discuss physiological consequences of sedentary lifestyle

PY11.6 Describe physiology of Infancy

PY11.7 Describe and discuss physiology of aging; free radicals and antioxidants

PY11.8 Discuss & compare cardio-respiratory changes in exercise (isometric and isotonic) with that

in the resting state and under different environmental conditions (heat and cold)

PY11.9 Interpret growth charts

PY11.10 Interpret anthropometric assessment of infants

PY11.11 Discuss the concept, criteria for diagnosis of Brain death and its implications

PY11.12 Discuss the physiological effects of meditation

PY11.13 Obtain history and perform general examination in the volunteer/simulated environment

PY11.14 Demonstrate Basic Life Support in a simulated environment

- **TEACHING LEARNING METHODS**
  - Interactive lectures
  - DOAP (Demonstration-Observation - Assistance- Performance) Sessions: Hematology experiments, Human experiments including Clinical examination, Computer assisted learning of frog and mammalian experiments, Demonstration of some human experiments
  - Small Group Discussions
  - Student seminars
  - Graphs and charts to be made in the departments to teach different principles of physiology, as well as pathophysiology, and to provide problem-solving exercises.
  - Early Clinical Exposure
  - Self-Directed Learning

Integration

Efforts are to be made to encourage integrated teaching between medical subjects. At the end of this teaching the student shall acquire an Integrated knowledge of organ structure, physiological and biochemical function, its regulatory mechanisms, its pathophysiology and principles of management.

AETCOM Modules

AETCOM (Attitude, Ethics & Communication) modules for the first year would be taught through various teaching learning methodologies and would also be assessed.

- **ASSESSMENT**

a) **Formative Assessment**: Formative assessment shall be done periodically throughout the course.

i) **Log Book**: Log book is to be maintained to record all activities like seminar, symposia, early clinical exposure, AETCOM modules and other academic activities. It has to be submitted to the department regularly and would be assessed regularly.

ii) **Certifiable competencies:** Achievement of certifiable competencies would also be recorded in logbooks. The student must have completed the required certifiable competencies and completed the log book to be eligible for appearing at the final university examination.

b) **Internal Assessment:**

i) No less than three internal assessment exams shall be conducted during the course.

ii) Up To twenty percent IA marks (Theory and Practical) would be from Log book assessment.

iii) 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations.

c) Summative Assessment:

University (Professional) examination: Will have Theory, viva and practical examinations.

i) THEORY PAPERS

There shall be two theory 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.

Each paper shall be of 03 hours duration and 100 marks.

THEORY PAPER - PHYSIOLOGY

PAPER – I (100 Marks)

Topics:

Blood, CVS, Respiration, Kidney, GIT including Nutrition, and Integrated Physiology

PAPER – II (100 Marks)

Topics:

Gen Physiology, Nerve – Muscle Physiology, CNS, Special Senses, Endocrines, Reproduction and Integrated Physiology

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THEORY QUESTION PAPER FORMAT
(Applicable for Paper- I and Paper-II)

Part I

Q 1. Objective Type Questions including MCQs	10*2=20

Part II

Q 2a. Long structure question / Problem based question	10
Q 2b. Physiological / Clinical significance	4 * 2.5 = 10
Q 3. Write Short Notes	4 * 5= 20

Part III

Q4 a. Long structure question / Problem based question	10
Q4 b. Explain the following:	4*2.5 = 10
Q5. Describe Briefly / Short notes	4*5 = 20

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ii) PRACTICALS & VIVA

1. Spotting/OSPE	10 marks
2. Problem solving exercise	10 marks
3. Graph and charts (including those pertaining to Amphibian nerve muscle and heart experiments)	05 marks
4. Human Experiment	15 marks

5. Haematology		15 marks
6. Clinical Exercise		10 marks
7. Practical record book		05 marks
	Total	**70 marks**
	VIVA	**30 marks**
	Grand Total	**100 marks**

Note:

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

University Examination: Mandatory 50% marks in theory and practical (theory=theory paper(s) only) (practical= practical/clinical + viva)

Internal assessment marks are not to be added to marks of the University examinations and should be shown separately in the grade card.

A candidate obtaining 75% marks in theory plus practicals shall be declared to have passed the subjects with Honors.

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.

5. Amendment to Ordinance V (2) & VII. [E.C Res. 15-7 dated 31.08.2021]

AYURVEDACHARYA

BACHELOR OF AYURVEDIC MEDICINE AND SURGERY (BAMS)

(4½ years Degree Course plus one year Internship)

1. There shall be a course of study for the Ayurvedacharya (Bachelor of Ayurveda Medicine and Surgery-BAMS) under the Faculty of Ayurvedic and Unani Medicine.

2. **Duration of Course:** The duration of the course shall be five years and six months comprising: -

(a) First Professional	-	Twelve months
(b) Second Professional	-	Twelve months
(c) Third Professional	-	Twelve months
(d) Final Professional	-	Eighteen months.
(e) Compulsory Rotatory Internship	-	Twelve months

3. **Degree to be awarded:** The candidate shall be awarded Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery-BAMS) degree after passing all the examinations and completion of prescribed course of study extending over the prescribed period, and thereafter satisfactorily completing the compulsory rotatory internship extending over twelve months.

4.

(A) <u>Admission to the BAMS Course</u>

(i) Age Requirement:

No candidate shall be admitted to B.A.M.S Degree Course unless he has attained the age of seventeen years on or before the 31st December of the year of his admission in the first year of the course and not more than of twenty-five years on or before the 31st December of the year of admission in the first year of the course:

Provided that the upper age limit may be relaxed by five years in the case of the Scheduled Castes, Scheduled Tribes, Other Backward Classes and physically handicapped candidates.

(ii) Qualifying Examination:

(a) 85% Delhi Quota

The candidates seeking admission to Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery-BAMS) Course must have passed Intermediate/Sr. School Certificate Examination(C.B.S.E)/Indian school Certificate Examination(12 years course) with Science subjects (Physics, Chemistry & Biology) and English or any other equivalent qualification recognized by the University with 50% or more marks in the aggregate of three subjects i.e. Physics, Chemistry, Biology and has passed English from the recognized school/Board conducting regular classes situated within the NCT of Delhi.

However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other backward classes, the marks obtained in Physic, Chemistry & Biology taken together in qualifying examination be 40% .

In respect of persons with disability candidate specified under the Rights of Persons with Disabilities Act, 2016 (49 of 2016), the minimum qualifying marks in the said qualifying examination in Physics, Chemistry & Biology shall be 45% in case of General Category and 40% in case of the Scheduled Castes, Scheduled Tribes and Other Backward Classes.

The candidates who have passed the qualifying examination from Patrachar Vidyalaya and National Open School may be eligible for admission provided their study centres and the examination centres were within the National Capital Territory of Delhi.

(b) 15% All India Quota

The candidates must have passed the prescribed qualifying examination from a recognized Indian University/Board.

Note:
(i) Provided that the candidate must has passed the required subjects (Physics, Chemistry, Biology & English) separately for admission BAMS Courses.

(c) Eligibility Criteria

(i) There shall be a uniform entrance examination for all medical institutions at the under-graduate level, namely the National Eligibility Entrance Test (NEET) for admission to under- graduate course in each academic year and shall be conducted by an authority designated by the Central Government:

(ii) In order to be eligible for admission to under-graduate course for an

academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in the 'National Eligibility Entrance Test for undergraduate course' held for the said academic year:

Provided that in respect of-

(i) candidates belonging to the Scheduled Castes, Scheduled Tribes and Other Backward Classes, the minimum marks shall be at 40th percentile;

(ii) candidates with benchmark disabilities specified under the Rights of Persons with Disabilities Act, 2016 (49 of 2016), the minimum marks shall be at 45th percentile in the case of general category and 40th percentile in the case of the Scheduled Castes, Scheduled Tribes and Other Backward Classes.

Explanation.—The percentile shall be determined on the basis of highest marks secured in the all India common merit list in the National Eligibility Entrance Test for under-graduate courses: Provided further that when sufficient number of candidates in the respective categories fail to secure minimum marks in the National Eligibility Entrance Test, as specified above, held for any academic year for admission to under-graduate courses, the Central Government in consultation with the Central Council may at its discretion lower the minimum marks required for admission to under-graduate course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for that academic year only.

(iii) An all India common merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in the National Eligibility Entrance Test and the candidates, within the respective categories, shall be admitted to under-graduate course from the said merit lists only.

(iv) The seat matrix for admission in the Government, Government- aided Institutions and Private Institutions shall be fifteen per cent for the all India quota and eighty-five per cent for the Delhi quota.

(v) The counselling for all admission to B.A.M.S Course for seats under all India quotas as well as for all Ayurveda educational institutions established by the Central Government shall be conducted by the authority designated by the Central Government.

(vi) No candidate who has failed to obtain the minimum eligibility marks as specified above shall be admitted to under-graduate course in the said academic year.

(vii) For foreign national candidates any other equivalent qualification to be approved by the Central Government may be allowed.

(viii) The eligibility criteria for the admission to BAMS course will be subject to change of guidelines issued by Ministry of AYUSH time to time as the case may be.

(B) Closure of admissions - The admissions of the Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery-BAMS) under the Faculty of Ayurvedic and Unani Medicine shall close on 31st of October every year or as directed by Central Govt.

(C) Medium of instruction:

Hindi/English will be the Medium of Instruction & Examination for BAMS Degree Course and in examination.

(D) Reservation of seats-

(i) **Scheduled Cast/ Scheduled Tribe/Other Backward Classes**- 15% seats are reserved for Scheduled Cast, 7½% for Scheduled Tribe and 27% for Other Backward Classes.

(ii) **Children and wives of armed and paramilitary persons (CW) - 5**% seats are reserved on compartmental horizontal basis for the candidates belonging to this category.

(iii) **Persons with Disability (PWD)** - 5% seats are reserved on compartmental horizontal basis for the candidates belonging to this category.

Five percent of the annual sanctioned intake capacity in Government or Government-aided Institutions shall be filled up by candidates with benchmark disabilities in accordance with the provisions of the Rights of Persons with Disabilities Act, 2016 (49 of 2016), based on the merit list of National Eligibility Entrance Test or equivalent eligibility test prescribed by the CCIM/Ministry of AYUSH.

(iv) **EWS: -** The seats reserved for EWS category as per the allotment of the seats by Ministry of AYUSH or the guidelines issued by the Central Government from time to time.

(v) Central Pool (Government of India nominee) Quota

Note: - The details shall be given in Bulletin of Information(BOI).

5. **Migration-** Migration (to and fro) is not permitted in Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery-BAMS) course in any colleges of University/ Inter-University.

6. Every Candidate seeking admission to the BAMS course must pursue a Course of Study as a whole-time regular student in the College affiliated to the University.

7. **Scheme of examination and Appearance in Examination:**

(i) First professional

(a) The first professional session shall ordinarily start in July and the first professional examination shall be at the end of one academic year of first professional session;

(b) The first professional examination shall be held in the following subjects,namely:-

(i) Padarth Vigyan evam Ayurved Itihas;
(ii) Sanskrit;
(iii) Kriya Sharir (Physiology);
(iv) Rachana Sharir (Anatomy); and
(v) Maulik Siddhant evam Ashtanga Hridaya (SutraSthan);

(c) The failed student of first Professional shall be allowed to appear in second professional examination, but the student shall not be allowed to appear in third professional examination unless the student passes all the subjects of first professional examination and maximum **four chances** shall be given to pass first professional examination within a period of maximum three years.

(ii) Second professional

(a) The second professional session shall start every year in the month of July following completion of first professional examination and the second professional examination

shall be ordinarily held and completed by the end ofmonth of May or June every year after completion of one year of second professional session;

(b) The second professional examination shall be held in the following subjects, namely:-

(i) Dravyaguna Vigyan (Pharmacology and Materia Medica);

(ii) Rasashastra evam Bhaishajya Kalpana (Pharmaceutical Science);

(iii) Roga Nidan evam Vikriti Vigyan (Diagnostic Procedure and Pathology); and

(iv) Charak Samhita-Purvardh (an ancient Ayurvedic text, Part-I);

(c) The failed student of second professional who have passed all the subjects of first professional examination shall be allowed to appear in third professional examination, but the student shall not be allowed to appear in final professional examination unless the student passes all the subjects of second professional examination and maximum **four chances** shall be given to pass second professional examination within a period of maximum three years.

(iii) Third professional

(a) The third professional session shall start every year in the month of July following completion of second professional examination and the third professional examination shall be ordinarily held and completed by the end of the month of May or June every year after completion of one year of third professional session;

(b) The third professional examination shall be held in the following subject, namely: -

(i) Agad Tantra Vyavahar Ayurveda evam Vidhi Vaidyaka (Toxicology and Medical Jurisprudence);

(ii) Charak Samhita-Uttarardh (an ancient Ayurvedic text, Part-II);

(iii) Swasthavritta and Yoga (Preventive and Social Medicine and Yoga);

(iv) Prasuti evam Striroga (Obstetrics & Gynaecology); and

(v) Bal Roga (Paediatrics);

(c) The failed student of third professional who have passed all the subjects of first and second professional examinations shall be allowed to appear in final professional examination and maximum **four chances** shall be given to pass third professional examination within a period of maximum three years.

(iv) Final Professional

(a) The final professional session shall be of one year and six months duration and shall start every year in the month of July following completion of third professional examination and the final professional examination shall be ordinarily held and completed by the end of month of October or November every year after completion of one year and six months of final professional session;

(b) The final professional examination shall comprise of the following subjects, namely:-

(i) Shalya Tantra (General Surgery);

(ii) Shalakya Tantra (Diseases of Head and Neck including Ophthalmology, Ear, Nose, Throat and Dentistry);

(iii) Kayachikitsa (Internal Medicine-including Manas Roga, Rasayan and Vajikarana);

(iv) Panchakarma;and

(v) Research Methodology and Medical-statistics;

(c) Research Methodology shall remain in the department of Samhita Siddhant but for the purpose of teaching, Bio- statistician shall be mandatorily required as part time to teach Research Methodology;

(d) The student failed in any of the **four professional examinations in four chances**

shall not be allowed to continue his or her studies: Provided that, in case of serious personal illness of a student and in any unavoidable circumstances, the Vice- Chancellor of the concerned University may provide one more chance in any one of four professional examinations;

(e) To become eligible for joining the compulsory internship programme, all four professional examinations shall be passed within a period of maximum **nine years** including all chances as mentioned above.

8. Compulsory Rotatory Internship

1) The duration of Compulsory Rotatory Internship shall be one year and the student shall be eligible to join the compulsory internship programme after passing all the subjects from first to the final professional examination and the internship programme shall be start after the declaration of the result of final professional examination.

2) The Internship Programme and time distribution shall be as follows:-

(a) the interns shall receive an orientation regarding programme details of internship programme along with the rules and regulations, in an orientation workshop, which shall be organised during the first three days of the beginning of internship programme and a work book shall be given to each intern, in which the intern shall enter date-wise details of activities undertaken by him or her during his or her training;

(b) every intern shall provisionally register himself with the concerned State Board or Council and obtain a certificate to this effect before joining the internship program;

(c) the daily working hours of intern shall be not less than eight hours;

(d) No intern shall remain absent from his hospital without prior permission from Head of Department or Medical Superintendent of the Hospital.

(e) normally one-year internship programme shall be divided into clinical training of six months in the Ayurvedic hospital attached to the college and six months in Primary Health Centre or Community Health Centre or Rural Hospital or District Hospital or Civil Hospital or any Government Hospital of modern medicine:

Provided that where there is no provision or permission of the State Government for allowing the graduate of Ayurveda in the hospital or dispensary of Modern Medicine, the one-year Internship shall be completed in the Hospital of Ayurvedic College.

3) The clinical training of six or twelve months, as case may be, in the Ayurvedic hospital attached to the college or in non-teaching hospitals approved by Central Council of Indian Medicine shall be conducted as follows:-

Sr.no.	Departments	Distribution of six months	Distribution of twelve months
(i)	Kayachikitsa	Two months	Four Months
(ii)	Shalya	One month	Two months
(iii)	Shalakya	One month	Two months
(iv)	PrasutievamStriroga	One month	Two months
(v)	Balroga-Kaumarabhritya	Fifteen days	One month
(vi)	Panchakarma	Fifteen days	One month

4) Six months training of interns shall be carried out with an object to orient and acquaint the intern with the National health Programme and the intern shall undertake such training in one

of the following institutes, namely:-

a. Primary Health Centre;
b. Community Health Centre or District Hospital;
c. Any recognised or approved hospital of modern medicine;
d. Any recognised or approved Ayurvedic hospital or Dispensary:

Provided that all the above institutes mentioned in clauses (a) to (d) shall have to be recognised by the concerned University and concerned Government designated authority for taking such a training.

5) **Detailed Guidelines for internship programme**- The guidelines for conducting the internship clinical training of six or twelve months in the Ayurvedic Hospital attached to the college and the intern shall undertake the following activities in the respective department as shown below:-

a. Kayachikitsa- The duration of internship in this department shall be two months or four months with following activities: -

(i) all routine works such as case taking, investigations, diagnosis and management of common diseases by Ayurvedic Medicine;

(ii) routine clinical pathological work such as haemoglobin estimation, complete haemogram, urine analysis, microscopic examination of blood parasites, sputum examination, stool examination, Mutra evam Mala pariksha by Ayurvedic method, interpretation of laboratory data and clinical findings and arriving at a diagnosis;

(iii) training in routine ward procedures and supervision of patients in respect of their diet, habits and verification of medicine schedule;

b. Panchakarma- The duration of internship in this department shall be fifteendays or one month with following activities:-

(i) Panchakarma procedures and techniques regarding purva karma, pradhankarma and pashchat Karma;

c. Shalya- The duration of internship in this department shall be one month or twomonths and intern shall be practically trained to acquaint with the following activities:-

(i) diagnosis and management of common surgical disorders according to Ayurvedic principles;

(ii) management of certain surgical emergencies such as fractures and dislocations, acute abdomen;

(iii) practical training of aseptic and antiseptics techniques, sterilization;

(iv) intern shall be involved in pre-operative and post-operative managements;

(v) practical use of anesthetic techniques and use of anesthetic drugs;

(vi) radiological procedures, clinical interpretation of X-ray, Intra Venous Pyelogram, Barium meal, Sonography and Electro Cardio Gram;

(vii) surgical procedures and routine ward techniques such as-

1. suturing of fresh injuries;
2. dressing of wounds, burns, ulcers and similar ailments;
3. incision of abscesses;
4. excision of cysts;
5. venesection; and
6. application of Ksharasutra in ano rectal diseases;

d. **Shalakya**- The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with the following activities:-

(i) diagnosis and management of common surgical disorders according Ayurvedic principles;

(ii) intern shall be involved in Pre-operative and Post-operative managements;

(iii) surgical procedures in Ear, Nose, Throat, Dental problems, Ophthalmic problems;

(iv) examinations of Eye, Ear, Nose, Throat and Refractive Error with the supportive instruments in Out-Patient Department; and

(v) procedures like Anjana Karma, Nasya, Raktamokshan, Karnapuran, Shirodhara, Putpak, Kawal, Gandush at Out-Patient Department level;

e. **Prasuti evam Striroga**- The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with the following activities:-

(i) antenatal and post-natal problems and their remedies, antenatal and post-natal care;

(ii) management of normal and abnormal labours; and

(iii) minor and major obstetric surgical procedures;

f. **Balroga**- The duration of internship in this department shall be fifteen days or one month and intern shall be practically trained to acquaint with the following activities:-

(i) antenatal and post-natal problems and their remedies, antenatal and post- natal care also by Ayurvedic principles and medicine;

(ii) antenatal and post-natal emergencies;

(iii) care of new born child along with immunization programme; and

(iv) important pediatric problems and their Ayurvedic managements

6) The Internship training in Primary Health Centre or Rural Hospital or District Hospital or Civil Hospital or any Government Hospital of modern medicine or Ayurvedic Hospital or Dispensary- During the six months internship training in Primary Health Centre or Rural Hospital or Community Health Centre or District Hospital or any recognised or approved hospital of Modern Medicine or Ayurvedic Hospital or Dispensary, the interns shall–

(i) get acquainted with routine of the Primary Health Centre and maintenance of their records;

(ii) get aquatinted with the diseases more prevalent in rural and remote areas and their management;

(iii) involve in teaching of health care methods to rural population and also various immunization programmes;

(iv) get acquainted with the routine working of the medical or non-medical staff of Primary Health Centre and be always in contact with the staff in this period;

(v) get familiarised with the work of maintaining the relevant register like daily patient register, family planning register, surgical register and take active participation in different Government health schemes or programmes;

(vi) participate actively in different National Health Programmes implemented by the State Government; and

(vii) participate actively in casualty section of the hospital in identification of casualty and trauma cases and their first aid treatment and also procedure for referring such cases to the identified hospitals.

9. **Assessment** - After completing the assignment in various Sections/Departments, the interns have to obtain a completion certificate from the head of the Section/Department, in respect of their devoted work in the Section/ Department, concerned and finally submitted to Principal or Head of the institute so that completion of successful internship can be granted.

10.

(1) Number of papers and marks for theory and practical or viva-voce:

Name of the subject	Number of hours of teaching			Details of maximum marks			
	Theory	practical	Total	No of papers	Theory	Practical Or Viva-voce	Total
1st Professional							
1 Padarth Vigyan evam AyurvedKa Itihas	100	---	100	Two	200	---	200
2. Sanskrit	200	---	200	One	100	---	100
3. Kriya Sharir	200	200	400	Two	200	100	300
4. Rachana Sharir	300	200	500	Two	200	100	300
5. Maulik Siddhant evam Asthanga Hridyaya (SutraSthan)	150	---	150	One	100	50	150
2nd Professional							
1. Dravyaguna Vigyan	200	200	400	Two	200	200	400
2. Roga Nidanevam Vikriti Vigyan	200	200	400	Two (01 – Pathology 01- Ayurveda	200	100	300
3. Rasashastra evam Bhaishjya Kalpa na	200	200	400	Two	200	200	400
4. Charak Samhita (Purvardh)	200	---	200	One	100	50	150
3rd Professional							
1. Agad Tantra, Vyavhar Ayurvedevam Vidhi Vaidyak	200	100	300	One	100	50	150
2. Swasthavritta and Yoga	200	100	300	Two	200	100	300
3. Prasuti evam Striroga	200	200	400	Two	200	100	300
4. Balroga	100	100	200	One	100	50	150
5. Charak Samhita (Uttarardh)	200	--	200	One	100	50	150
Final Professional							

1. Kayachikitsa	300	200	500	Two	200	100	300
2. Panchakarma	100	200	300	One	100	50	150
3. Shalya Tantra	200	150	350	Two	200	100	300
4. Shalakya Tantra	200	150	350	Two	200	100	300
5. Research Methodology and Medical Statistics	50	--	50	One	50	---	50

Note : -The period of theory and practical shall not be less than sixty minutes (one hour) and the duration of the practical of clinical subjects and Rachana Sharir (dissection) shall be of at least one hundred and twenty minutes (two hours)

(2) The clinical training in the hospital attached with college to the students shall be as follows:

(i) Kayachikitsa (Indoor and outdoor): Eighteen months

(a) Kayachikitsa (Samanya)- Six months
(b) Manasroga – Three months
(c) Rasayan and Vajikaran – Three months
(d) Panchakarma – Three months
(e) Rog Nidan evam Vikriti Vigyan – Three months

(ii) Shalya (Indoor and Outdoor): Nine months

(a) Shalya (Samanya)-Three months (minimum one-month in Operation Theatre)
(b) Shalya (Kshar and Anushastra Karma)- Three months (minimum one-month in Operation Theatre)
(c) Ksharsutra – Two months
(d) Anaesthesia – Fifteen Days
(e) Radiology – Fifteen days

(iii) Shalakya Tantra (Indoor and Outdoor) : Four months (minimum one-month in Operation Theatre)

(iv) Prasuti evem Striroga (Outdoor and Indoor) : Three months

(v) Kumarbhritya (Outdoor and Indoor) : One month

(vi) Atayik (casuality) : Two months

Note:- Clinical training shall be completed as per MSE of CCIM 2016. The Head of the Institution/Principal ensure the proportionate of the clinical training period.

11. Examination

(1) The theory examination shall have minimum twenty percent short answer questions having maximum mark up to forty per cent and minimum four questions for long explanatory answer having maximum marks up to sixty percent and these questions shall cover entire syllabus of subject.

Note:- Paper shall be of three hours duration and shall consist of three parts, A,B & C. Parts A & B shall be checked by external examiners and Part C shall be checked by internal examiner.

Paper Pattern will be as under

Paper	Part A- 1. Long Question (15 Marks) not less than 250 words 2. Short Question (9 marks) not more than 50 words 3. Very Short Question (8 Marks) not more than 25 words	1 No. x 15 3 No. x 3 4 No. x 2	32 Marks
	Part B- 4. Long Question (15 Marks) not less than 250 words 5. Short Question (9 marks) not more than 50 words 6. Very Short Question (8 Marks) not more than 25 words	1 No. x 15 3 No. x 3 4 No. x 2	32 Marks
	Part C- 7. Long Question (15 Marks) not less than 250 words 8. Short Question (6 marks) not more than 50 words	2 No. x 15 (Attempt any 2 out of 3) 2 No. x 3 (Attempt any 2 out of 3)	36 Marks
		Total marks 100 Total Duration of paper: 3 Hours	

(2) The supplementary examination shall be held within six months of regular examination and failed students shall be eligible to appear in its supplementary examination, as the case maybe.

(3) Each student shall be required to maintain seventy-five per cent. attendance in each subject (in theory and practical) for appearing in the examination and in this regard a class attendance card shall be maintained for each student for the different subjects and the Principal shall arrange to obtain the signature of the students, teachers at the end of each course of lectures and practical instructions and send the cards to each Head of the Department for final completion before the commencement of each examination.

(4) In case a student fails to appear in regular examination for cognitive reason, he or she shall appear in supplementary examination as regular students, whose non- appearance in regular examination shall not be treated as an attempt and such students after passing examination shall join the studies with regular students and appear for next professional examination after completion of the required period of study.

(5) The following facts may be taken into consideration in determining class work in the subject-

(a) Regularity in attendance;

(b) Periodical tests; and

(c) Practical work.

12. Pass Marks:-

(1) The minimum marks required for passing the examination shall be fifty percent in theory and fifty percent in practical or clinical or viva-voce, wherever applicable separately in each subject.

(2) A passed candidate will be awarded division as follows

(i) Distinction 75% marks or above in the aggregate.
(ii) First Division 60% marks or above in the aggregate.
(iii) Second Division 50% marks or above in the aggregate.

13. **Grace Marks: -** The grace marks upto a maximum of 10 marks may be awarded at the discretion of the University to an Examinee for clearing (Passing) the examination as a whole (irrespective of the number of subjects) but not for clearing a subject resulting in exemption.

14. For all other matters which have not been provided in this Ordinance, the Guidelines issued by CCIM/Ministry of AYUSH, from time to time, will be followed.

6. Amendment to Ordinance V (2) & VII. [E.C Res. 15-7 dated 31.08.2021]

Kamil-e-Tibb-o-Jarahat

BACHELOR OF UNANI MEDICINE & SURGERY-BUMS

1. There shall be a course of study for the Kamil-e-Tibb-o-Jarahat (Bachelor of Unani Medicine and Surgery-BUMS) under the Faculty of Ayurvedic and Unani Medicine.

2.

(A) <u>Admission to the BUMS Course-</u>

(i) Age Requirement:

No candidate shall be admitted to B.U.M.S Degree Course unless he has attained the age of seventeen years on or before the 31st December of the year of his admission in the first year of the course and not more than of twenty-five years on or before the 31st December of the year of admission in the first year of the course:

Provided that the upper age limit may be relaxed by five years in the case of the Scheduled Castes, Scheduled Tribes, Other Backward Classes and physically handicapped candidates.

(ii) Qualifying Examination

(a) 85% Delhi Quota

The candidates seeking admission to Kamil-e-Tibb-of-Jarahat (Bachelor of Unani Medicine and Surgery-BUMS) Course must have passed Intermediate/Senior School Certificate Examination(C.B.S.E)/Indian School Certificate Examination (12 years course) with Science subjects (Physics, Chemistry & Biology) and English or any other equivalent qualification recognized by the University with 50% or more marks in the aggregate of three subjects i.e. Physics, Chemistry, Biology and has passed English from the recognized school/Board conducting regular classes situated within the NCT of Delhi.

However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other backward classes, the marks obtained in Physic, Chemistry & Biology taken together in qualifying examination be 40%.

In respect of persons with disability candidate specified under the Rights of Persons with Disabilities Act, 2016 (49 of 2016), the minimum qualifying marks in the said qualifying examination in Physics, Chemistry & Biology shall be 45% in case of

General Category and 40% in case of the Scheduled Castes, Scheduled Tribes and Other Backward Classes.

The candidates who have passed the qualifying examination from Patrachar Vidyalaya and National Open School may be eligible for admission provided their study centres and the examination centres were within the National Capital Territory of Delhi.

(b) 15% All India Quota

The candidates must have passed the prescribed qualifying examination from a recognized Indian University/Board.

Note:

(i) Provided that the candidate must has passed the required subjects (Physics, Chemistry, Biology & English) separately for admission BUMS Courses.

(ii) The candidate should have passed the 10th Class examination with Urdu or Arabic or Persian as a subject or an equivalent Examination recognized by Delhi University.

(c) Eligibility Criteria

(i) There shall be a uniform entrance examination for all medical institutions at the under-graduate level, namely the National Eligibility Entrance Test (NEET) for admission to under-graduate course in each academic year and shall be conducted by an authority designated by the Central Government:

(ii) In order to be eligible for admission to under-graduate course for an academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in the 'National Eligibility Entrance Test for undergraduate course' held for the said academic year:

Provided that in respect of-

(I) candidates belonging to the Scheduled Castes, Scheduled Tribes and Other Backward Classes, the minimum marks shall be at 40th percentile;

(II) candidates with benchmark disabilities specified under the Rights of Persons with Disabilities Act, 2016 (49 of 2016), the minimum marks shall be at 45th percentile in the case of general category and 40th percentile in the case of the Scheduled Castes, Scheduled Tribes and Other Backward Classes.

Explanation— The percentile shall be determined on the basis of highest marks secured in the all India common merit list in the National Eligibility Entrance Test for under-graduate courses: Provided further that when sufficient number of candidates in the respective categories fail to secure minimum marks in the National Eligibility Entrance Test, as specified above, held for any academic year for admission to under- graduate courses, the Central Government in consultation with the Central Council may at its discretion lower the minimum marks required for admission to under-graduate course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for that academic year only.

(iii) An all India common merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in the National

Eligibility Entrance Test and the candidates, within the respective categories, shall be admitted to under-graduate course from the said merit lists only.

(iv) The seat matrix for admission in the Government, Government-aided Institutions and Private Institutions shall be fifteen per cent for the all India quota and eighty-five per cent for the Delhi quota.

(v) The counseling for all admission to B.U.M.S Course for seats under all India quotas as well as for all Unani educational institutions established by the Central Government shall be conducted by the authority designated by the Central Government.

(vi) No candidate who has failed to obtain the minimum eligibility marks as specified above shall be admitted to under-graduate course in the said academic year.

(vii) For foreign national candidates any other equivalent qualification to be approved by the University may be allowed.

(B) Closure of admissions- The admissions of the Kamil-e-Tibb-o-Jarahat (Bachelor of Unani Medicine and Surgery-BUMS) under the Faculty of Ayurvedic and Unani Medicine shall close on 31st of October every year or as directed by Central Govt.

(C) Medium of instruction and examinations- Medium of instruction.

-The medium of instruction for the course shall be Urdu or English.

(D) Reservation of seats-

(i) **Scheduled Cast/ Scheduled Tribe/Other Backward Classes-** 15% seats are reserved for Scheduled Cast, 7½% for Scheduled Tribe and 27% for Other Backward Classes.

(ii) **Children and wives of armed and paramilitary persons (CW) -** 5% seats are reserved on compartmental horizontal basis for the candidates belonging to this category.

(iii) **Persons with Disability (PWD)** - 5% seats are reserved on compartmental horizontal basis for the candidates belonging to this category.

Five percent of the annual sanctioned intake capacity in Government or Government-aided Institutions shall be filled up by candidates with benchmark disabilities in accordance with the provisions of the Rights of Persons with Disabilities Act, 2016 (49 of 2016), based on the merit list of „National Eligibility Entrance Test or equivalent eligibility test prescribed by the CCIM/Ministry of AYUSH.

(iv) **EWS: - T**he seats reserved for EWS category as per the allotment of the seats by Ministry of AYUSH or the guidelines issued by the Central Government from time to time.

(v) Central Pool (Government of India nominee) Quota

Note: - The details shall be given in Bulletin of Information (BOI).

3. **Migration-**Migration (to and fro) is not permitted in Kamil-e-Tibb-o-Jarahat (Bachelor of Unani Medicine and Surgery-BUMS) course in any colleges of University/Inter-University.

4. **Attendance-** A student is required to pursue Kamil-e-Tibb-o-Jarahat (Bachelor of Unani Medicine and Surgery-BUMS) course of study as a whole time regular student of college/institute of the University. Each student shall be required to have 75% of attendance in the lectures delivered in theory / practical / demonstration / clinical held in each subject separately during each year of

course and each student shall also be required to participate in educational trips/tours /sports/cultural events organized/sponsored by college/institute during the year provided that principal of the college may exempt any student from such participation to the extent he/she deems necessary on the individual merit of each case. The student found deficient in mandatory 75% of attendance shall be required to complete by attending the no. of classes he/she is short from mandatory 75% of attendance.

5. Duration of Course-

(a) Degree (Bachelor of Unani Medicine and Surgery-B.U.M.S.) Course: The duration of course of study shall be Five Years and Six Months comprising:-

(i) I Professional- 12 months
(ii) II Professional- 12 months
(iii) III Professional- 12 months
(iv) Final Professional-18 months
(v) Compulsory Rotatory Internship-12 months

(b) Name of papers and hours of teaching for theory and practical-

Name of the subject	Number of hours of Teaching		
	Theory	Practical	Total
First Professional			
1. Arabic and Mantiq wa Falsafa	100	-	100
2. Kulliyat Umoore Tabiya (Basic Principles of Unani Medicine)	100	100	200
3. Tashreehul Badan(Anatomy)* Paper (i)- Tashreeh –I Paper (ii)- Tashreeh – II	225	150	375
4. Munafeul Aaza(Physiology) Paper (i)- Munafeul Aza Umoomi wa Hayati Kimiya (General Physiology and Biochemistry) Paper (ii)- Munafeul Aza Nizami (Physiology)	225	150	375
Note: *Tashreehul Badan Paper - I: General description of Connective tissues, Muscles, Nerves, Upper and Lower Limbs and organs of Head and Neck including basics of Embryology and Genetics like as Chromosomes, Pattern of inheritance, Cyto-genetics and Genetics of important diseases. Tashreehul Badan Paper – II: General description of Thorax, Abdomen and Pelvis and Applied and Gross Anatomical anomalies of different organs			
Second Professional			
1. Tareekhe Tib (History of Medicine)	100	-	100
2. Tahaffuzi wa Samaji Tib (Preventive and Community Medicine)	150	100	250
3. Ilmul Advia Paper (i) - Kulliyate Advia Paper (ii) - Advia Mufradah	200	100	300

4. Mahiyatul Amraz Paper (i) Mahiyatul Amraz Umoomiwa Ilmul Jaraseem Paper (ii)- Mahiyatul Amraz Nizamia	200	200	400
Note: The students may be divided into three groups for practical or demonstration of Ilmul Advia-I (Advia Mufradah), Tahaffuzi wa Samaji Tib and Mahiyatul Amraz. For demonstration of Advia Mufradah, the student will be posted in Advia Museum and Herbal Garden regularly.			
Third Professional			
1. Communication Skills	100	-	100
2. Ilmul Saidlawa Murakkabat Paper (i)- Ilmul Saidla Paper (ii)- Advia Murakkabah	140	100	240
3. Tibbe Qanooniwa Ilmul Samoom	100	50	150
4. Sareeriyat wa Usoole Ilaj	80	140	220
5. Ilaj bit Tadbeer	80	140	220
6. Amraze Atfal	80	50	130
Note: For Practical training Ilmul Advia-II (Ilmul Saidlawa Murakkabat) and Tibbe Qanooniwa Ilmul Samoom, the students may be divided in two groups. Practicals in both the subjects may be held four days every week. The students will be posted in hospital, in various groups for clinical training of Ilaj bit Tadbeer, Sareeriyat and Amraze Atfal.			
Final Professional			
1. Moalajat Paper (i): Amraz-e-Nizam-e-Dimagwa Aasab and Baah, Hummiyat Paper (ii): Amraz-e-Tanaffus, Dauran-e-Khon, Tauleed-e-Dam, Tihal Paper (iii): Amraz-e-Hazm, Baul o Tanasul, Amraz-e-Mutaddiyah, Hummiyat, Amraz-e-mafasil	250	Clinical duties (in groups) In various sections of Hospital 3-4 hrs. per day	-
2. Amraze Niswan	100		-
3. Ilmul Qabalat wa Naumaulood	100		-
4. Ilmul Jarahat Paper (i) - Jarahat Umoomi Paper (ii) - Jarahat Nizami	150		-
5. Ain, Uzn, Anf, Halaqwa Asnan	100		-
6. Amraze Jildwa Tazeeniyat	100		-

6. Examinations-

(i) There shall be four examinations-

a) 1st professional BUMS examinations shall be held at the end of 1st Prof academic year.

b) 2nd professional BUMS examinations shall be held at the end of 2nd Prof academic year.

c) 3rd professional BUMS examinations shall be held at the end of 3rd Prof academic year.

d) 4th professional BUMS examinations shall be held at the end of 4th Prof academic year.

(ii) Supplementary examinations shall be held within six months of the corresponding professional examinations.

7. Passing Criteria-

1. The minimum marks required for passing the examination shall be fifty percent in theory and fifty percent in practical or clinical or viva-voce, wherever applicable separately in each subject.
2. A passed candidate will be awarded division as follows:
   (i) Distinction 75% marks or above in the aggregate.
   (ii) First Division 60% marks or above in the aggregate.
   (iii) Second Division 50% marks or above in the aggregate.

8. Promotional criteria-

(1) From Ist Prof to 2nd Prof

(a) The first professional session shall ordinarily start in July and the first professional examination shall be at the end of one academic year of first professional session;

(b) The first professional examination shall be held in the following subjects, namely:-
   (i) Arabic and Mantiq wa Falsafa (Logic and Philosophy);
   (ii) Kulliyat Umoore Tabiya (Basic Principles of Unani Medicine);
   (iii) Tashreehul Badan (Anatomy);
   (iv) Munafe ul Aaza (Physiology);

(c) The failed student of first professional shall be allowed to appear in second professional examination, but the student shall not be allowed to appear in third professional examination unless the student passes all the subjects of first professional examination and **maximum four chances** shall be given to pass first professional examination within a period of maximum three years.

(2) From 2nd Prof. to 3rd Prof.

(a) The second professional session shall start every year in the month of July following completion of first professional examination and the second professional examination shall be ordinarily held and completed by the end of month of May or June every year after completion of one year of second professional session;

(b) The second professional examination shall be held in the following subjects, namely:-
   (i) Tareekhe Tib (History of Medicine);
   (ii) Tahaffuzi wa Samaji Tib (Preventive and Community Medicine);
   (iii) Ilmul Advia (Pharmcology);
   (iv) Mahiyatul Amraz (Pathology);

(c) The failed student of second professional who have passed all the subjects of first professional examination shall be allowed to appear in third professional examination, but the student shall not be allowed to appear in final professional examination unless the student passes all the subjects of second professional examination and maximum four

chances shall be given to pass second professional examination within a period of maximum three years.

(3) From 3rd Prof. to Final Prof.

(a) The third professional session shall start every year in the month of July following completion of second professional examination and the third professional examination shall be ordinarily held and completed by the end of the month of May or June every year after completion of one year of third professional session;

(b) The third professional examination shall be held in the following subjects, namely:-

(i) Communication Skills;
(ii) Ilmul Saidla wa Murakkabat (Pharmacy)
(iii) Tibbe Qanooni wallmul Samoom (Jurisprudence and Toxicology);
(iv) Sareeriyat wa Usoolellaj (Clinical Methods);
(v) Ilaj bit Tadbeer (Regimenal Therapy);
(vi) Ilmul Atfal (Paediatrics);

(c) The failed student of third professional who have passed all the subjects of first and second professional examinations shall be allowed to appear in final professional examination and maximum four chances shall be given to pass third professional examination within a period of maximum three years.

(4) Final Prof. Examinations.

(a) The final professional session shall be of one year and six months duration and shall start every year in the month of July following completion of third professional examination and the final professional examination shall be ordinarily held and completed by the end of the month of December every year after completion of one year and six months or final professional session;

(b) The final professional examination shall comprise of the following subjects, namely:-

(i) Moalajat (General Medicine);
(ii) Amraze Niswan (Gynaecology);
(iii) Ilmul Qabalat wa Naumaulood (Obstetrics and Neonatology);
(iv) Ilmul Jarahat (Surgery);
(v) Ain, Uzn, Anf, Halaqwa Asnan (Eye, Ear, Nose, Throat and dentistry);
(vi) Amraze Jildwa Tazeeniyat;

(c) The student failed in any of the four professional examinations in four chances shall not be allowed to continue his or her studies: Provided that, in case of serious personal illness of a student and in any unavoidable circumstances, the Vice-Chancellor of the concerned University may provide one more chance in anyone of four professional examinations;

(d) To become eligible for joining the compulsory internship programme, all four professional examinations shall be passed within a period of maximum nine years including all chances as mentioned above.

9. Scheme of examinations-

(1) **Number of papers /marks for theory and practical examinations-**

	Details of Maximum Marks

Name of Subject	Number of paper	Theory	Practical	Total
First Professsional				
1. Arabic and Mantiq wa Falsafa	One	100	-	100
2. Kulliyat Umoore Tabiya (Basic Principles of Unani Medicine)	One	100	100	200
3. Tashreehul Badan (Anatomy)* **Paper (i)-** Tashreeh –I **Paper (ii)-** Tashreeh - II	Two	100 100	100	300
4. Munafeul Aza (Physiology) **Paper (i) -** Munafeul Aza Umoomiwa Hayati Kimiya (General Physiology and Biochemistry) **Paper (ii)-** Munafeul Aza Nizami (Physiology)	Two	100 100	100	300
Second Professional				
1. Tareekhe Tib (History of Medicine)	One	100	-	100
2. Tahaffuzi wa Samaji Tib (Preventive and (Community Medicine)	One	100	100	200
3. Ilmul Advia **Paper (i)-** Kulliyate Advia **Paper (ii)-** Advia Mufradah	Two	100 100	100	300
4. Mahiyatul Amraz **Paper(i)-** Mahiyatul Amraz Umoomiwa Ilmul Jaraseem **Paper (ii)-** Mahiyatul Amraz Nizamia	Two	100 100	100	300
Third Professional				
1. Communication Skills	One	100		100
2. Ilmul Saidlawa Murakkabat **Paper (i)-** Ilmul Saidla **Paper (ii)-** Advia Murakkabah	Two	100 100	100	300
3. Tibbe Qanooni wa Ilmul Samoom	One	100	100	200
4. Sareeriyatwa Usoolellaj	One	100	100	200
5. Ilaj bit Tadbeer	One	100	100	200
6. Amraze Atfal	One	100	100	200
Final Professional				
1. Moalajat **Paper –(i)-** Amraz-e-Nizam-e- Dimagwa Aasab and Baah, Hummiyat **Paper - (ii)-** Amraz-e-Tanaffus, Dauran-e-Khon, Tauleed-e- Dam, Tihal **Paper- (iii)-** Amraz-e-Hazm, Baul o Tanasul, Amraz-e-Mutaddiyah, Hummiyat, Amraz-e-mafasil	Three	100 100 100	100	400

2. Amraze Niswan	One	100	100	200
3. Ilmul Qabalat wa Naumaulood	One	100	100	200
4. Ilmul Jarahat **Paper (i)-** Jarahat Umoomi **Paper (ii)-** Jarahat Nizami	Two	100 100	100	300
5. Ain, Uzn, Anf, Halaqwa Asnan	One	100	100	200
6. Amraze Jildwa Tazeeniyat	One	100	100	200

The theory examination shall have minimum twenty per cent short answer questions having maximum mark up to forty per cent and minimum four questions for long explanatory answer having maximum marks up to sixty per cent, and these questions shall cover entire syllabus of subject.

Note:- Paper shall be of three hours duration and shall consist of three parts, A,B & C. Parts A & B shall be checked by external examiners and Part C shall be checked by internal examiner.

Paper Pattern will be as under

Paper	**Part A-** 1. Long Question (15 Marks) not less than 250 words 2. Short Question (9 marks) not more than 50 words 3. Very Short Question (8 Marks) not more than 25 words	1 No. x 15 3 No. x 3 4 No. x 2	32 Marks
	Part B- 1. Long Question (15 Marks) not less than 250 words 2. Short Question (9 marks) not more than 50 words 3. Very Short Question (8 Marks) not more than 25 words	1 No. x 15 3 No. x 3 4 No. x 2	32 Marks
	Part C- 1. Long Question (15 Marks) not less than 250 words 2. Short Question (6 marks) not more than 50 words	2 No. x 15 (Attempt any 2 out of 3) 2 No. x 3 (Attempt any 2 out of 3)	36 Marks
		Total marks: 100 **Total Duration of paper: 3 Hours**	

(2) The supplementary examination shall be held within six months of regular examination and failed students shall be eligible to appear in its supplementary examination, as the case maybe.

(3) Each student shall be required to maintain seventy-five per cent. attendance in each subject (in theory and practical) for appearing in the examination and in this regard a class attendance card shall be maintained for each student for the different subjects and the Principal shall arrange to obtain the signature of the students, teachers at the end of each course of lectures and practical instructions and send the cards to each Head of the Department for final completion before the commencement of each examination.

(4) In case a student fails to appear in regular examination for cognitive reason, he or she shall appear in supplementary examination as regular students, whose non-appearance in regular

examination shall not be treated as an attempt and such students after passing examination shall join the studies with regular students and appear for next professional examination after completion of the required period of study.

(5) The following facts may be taken into consideration in determining class work in the subject-

(a) Regularity in attendance;

(b) Periodical tests; and

(c) Practical work.

10. Grace Marks: The grace marks upto a maximum of 10 marks may be awarded at the discretion of the University to an Examinee for clearing (Passing) the examination as a whole (Irrespective of the number of subjects) but not for clearing a subject resulting in exemption.

11. Compulsory Rotatory Internship Training-

(1) The duration of Compulsory Rotatory Internship shall be one year and the student shall be eligible to join the compulsory internship programme after passing all the subjects from first to the final professional examinations, and the internship programme shall be start after the declaration of the result of final professional examination.

(2) The Internship Programme and time distribution shall be as follows: -

(a) the interns shall receive an orientation regarding programme details of internship programme alongwith the rules and regulations, in an orientation workshop, which shall be organized during the first three days of the beginning of internship programme and a workbook shall be given to each intern, in which the intern shall enter date-wise details of activities undertaken by him or her during his or her training;

(b) every intern shall provisionally register himself with the concerned State Board or Council and obtain a certificate to this effect before joining the internship program;

(c) the daily working hours of intern shall be not less than eight hours;

(d) no Intern shall remain absent from his hospital duties without prior permission from Head of Department or Chief Medical Officer or Medical Superintendent of the Hospital;

(e) normally one-year internship programme shall be divided into clinical training of six months in the Unani hospital attached to the college and six months in Primary Health Centre or Community Health Centre or Rural Hospital or District Hospital Civil Hospital or any Government Hospital of modern medicine:

Provided that where there is no provision or facility or permission of the State Government for allowing the graduate of Unani in the hospital or dispensary of Modern Medicine, the one-year Internship shall be completed in the Hospital of Unani College.

(3) The clinical training of six or twelve months, as case may be, in the Unani hospital attached to the college or in non- teaching hospitals approved by Central Council of Indian Medicine shall be conducted as follows:-

Sr. no.	Departments	Distribution of six months	Distribution Of twelve months
(i)	Moalajat including Ilaj bit Tadbeer and Amraze Jildwa Tazeeniyat	Two months	Four months
(ii)	Jarahat	One month	Two months
(iii)	Amraz-e-Ain, Uzn, Anf, Halaqwa Asnan	One month	Two months

(iv)	Ilmul Qabalat-wa-Amraz-e-Niswan	One month	Two months
(v)	Amraze Atfal	Fifteen days	One month
(vi)	Tahaffuzi-wa-Samaji Tib (Preventive and Community Medicine)	Fifteen days	One month

(4) Six months training of interns shall be carried out with an object to orient and acquaint the intern with National Health Programme and the intern shall undertake such training in one of the following institutes, namely:-

(a) Primary Health Centre;

(b) Community Health Centre or District Hospital;

(c) any recognised or approved hospital of modern medicine;

(d) any recognised or approved Unani hospital or dispensary:

Provided that all the above institutes mentioned in clauses (a) to (d) shall have to be recognised by the concerned University and concerned Government designated authority for providing such training.

(5) Detailed guidelines for internship programme- The guidelines for conducting the internship clinical training of six or twelve months in the Unani Hospital attached to the college and the intern shall undertake the following activities in the respective department as shown below:-

(a) Moalajat- The duration of internship in this department shall be two months or four months with following activities:-

(i) all routine works such as case taking, investigations, diagnosis and management of common diseases by Unani medicine;

(ii) examination of Nabz, Baul-o-Baraz by Unani methods, routine clinical pathological work as. haemoglobin estimation, complete haemogram, urine analysis, microscopic examination of blood smears, sputum examination, stool examination, interpretation of laboratory data and clinical findings and arriving at a diagnosis;

(iii) training in routine ward procedures and supervision of patients in respect of their diet, habits and verification of medicine schedule;

(iv) Ilaj bit Tadbeer: Procedures and techniques of various regimental therapies;

(v) Amraze Jild-wa Tazeeniyat: Diagnosis and management of various skin diseases, use of modern techniques and equipments in skin and cosmetology etc.;

(b) Jarahat- The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with following activities:-

(i) Diagnosis and management of common surgical disorders according to Unani principles;

(ii) management of certain surgical emergencies such as fractures and dislocations, acute abdomen;

(iii) practical training of aseptic and antiseptics techniques, sterilization;

(iv) intern shall be involved in pre-operative and post-operative managements;

(v) practical use of anesthetic techniques and use of anesthetic drugs;

(vi) radiological procedures, clinical interpretation of X-ray, Intra Venous Pyelogram, Barium meal, Sonography and Electro Cardio Gram;

(vii) surgical procedures and routine ward techniques such as:-

1. suturing of fresh injuries;
2. dressing of wounds, burns, ulcers and similar ailments;
3. incision of abscesses;
4. excision of cysts; and
5. venesection;

(c) **Amraze Uzn, Anf, Halaqwa Asnan-** The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with following activities: -

(i) Diagnosis and management of common surgical disorders according to Unani Principles;

(ii) intern shall be involved in Pre-operative and Post-operative managements;

(iii) surgical procedures of ear, nose, throat, dental problems, ophthalmic problems;

(iv) examinations of eye, ear, nose, throat disorders, refractive error, use of ophthalmic equipment for diagnosis of ophthalmic diseases, various tests for deafness ; and

(v) minor surgical procedure in Uzn, Anf, Halaq like syringing and antrum wash, packing of nose in epistaxis, removal of foreign bodies from Uzn, Anf and Halaq at Out-Patient Department level;

(d) **Ilmul Qabalatwa Amraze Niswan-** The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with following activities:-

(i) antenatal and post-natal problems and their remedies;

(ii) antenatal and post-natal care;

(iii) management of normal and abnormal labours; and

(iv) minor and major obstetric surgical procedures;

(e) **Amraze Atfal-** The duration of internship in this department shall be fifteen days or one month and intern shall be practically trained to acquaint with following activities:-

(i) antenatal and post-natal problems and their remedies, antenatal and Post-natal care also by Unani principles and medicine;

(ii) antenatal and post-natal emergencies;

(iii) care of new born child along with immunization programme; and

(iv) important pediatric problems and their managements in Unani system of Medicine;

(f) **Tahaffuzi wa Samaji Tibb**- The duration of internship in this department shall be fifteen days or one month and intern shall be trained to acquaint with the programmes of prevention and control of locally prevalent endemic diseases including nutritional disorders, immunisation, management of infectious diseases, family welfare planning programmes.

(6) The Internship training in Primary Health Centre or Rural Hospital or District Hospital or Civil Hospital or any Government Hospital of modern medicine or Unani Hospital or Dispensary: During the six months internship training in Primary Health Centre or Community Health Centre or District Hospital or any recognised or approved hospital of Modern medicine or Unani hospital or dispensary, the intern shall-

(i) get acquainted with the routine of the Primary Health Centre and maintenance of their records;

(ii) get acquainted with the routine working of the medical or non-medical staff of Primary Health Centre and be always in contact with the staff in this period;

(iii) get familiared with the work of maintaining the relevant register like daily patient register, family planning register, surgical register and take active participation in different Government Health Schemes or Programme;

(iv) participate actively in different National Health Programmes implemented by the State Government.

(7) Internship training in Rural Unani dispensary or hospital: During the six months internship training in Rural Unani dispensary or hospital, intern shall-

(i) get acquainted with the diseases more prevalent in rural and remote areas and their management; and

(ii) involve in teaching of health care methods to rural population and also various immunization programmes.

(8) Internship training in Casualty Section of any recognised hospital of modern medicine: During the six months internship training in Casualty Section of any recognised hospital of modern medicine, intern shall-

(i) get acquainted with identification of casualty and trauma cases and their first aid treatment and

(ii) get acquainted with procedure for referring such cases to the identified hospitals.

(9) Assessment of internship - After completing the assignment in various Sections, the intern shall obtain a completion certificate from the head of the Section in respect of their devoted work in the Section concerned and finally submit to the Principal or Dean or Head of the Institution so that completion of successful internship may be granted.

12. Syllabus- The syllabus for 1st, 2nd, 3rd and final professional prescribed by CCIM from time to time shall be applicable.

13. For all other matters which have not been provided in this Ordinance, the Guidelines issued by CCIM/Ministry of AYUSH, from time to time, will be followed.

7. Amendment to Ordinance V (2) & VII. [E.C Res. 15-8 dated 31.08.2021]

Amendment to the MBBS Ordinance Part-I (approved vide E.C. dated 09.07.2011)

Existing	Amended
Clause 4 (b) **Span Period:** Maximum of 08 (eight) years from the date of admission in the 1st Professional MBBS Course (excluding internship training period).	***Omitted***

REGISTRAR