SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
TIRUPATI – 517 507

MBBS COURSE

Agenda

3rd BOARD OF STUDIES MEETING

1stMBBS, 2nd MBBS, 3rd MBBS Part-I & II PROFESSIONALS

As per NMC Regulations on Graduate Medical Education as amended up to 2023
(Applicable for students admitted to First MBBS from Academic Year 2019-20 Onwards)

24-07-2024 (1st MBBS), 25-07-2024 (2nd MBBS),
31-07-2024 (3rd MBBS Part-I), 30-07-2024 (3rd MBBS Part-II)

SVIMS UNIVERSITY

(A University established by an act of A.P State Legislature)

TIRUPATI

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
Tirupati

MBBS COURSE

3rd Board of Studies Meeting held on
24.07.2024(1st MBBS), 25.07.2024 (2nd MBBS),
3rd MBBS Part-I (31.07.2024) & 3rd MBBS Part-II (30.07.2024)

INDEX

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
TIRUPATI

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   Dean
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34. Dr Arun H S - External Expert
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I. CBME Regulations

1. Preamble:

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide healthcare to the evolving needs of the nation and the world.

About 25years have passed since the existing Regulations on Graduate Medical Education, 1997 were notified, necessitating are look at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values, advancements in medical education and expectations of stake holders. Emerging healthcare issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward-looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2019 will reveal that the 2019 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical Education making it more learner-centric, patient-centric, gender- sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using "broad competencies"; instead, the reports have written end of phase subject (sub) competencies. These "sub-competencies" can be mapped to the global competencies in the Graduate Medical Education Regulations.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary team work, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

2. Objectives of the Indian Graduate Medical Training Programme:

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she 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 program are hereby prescribed.

3. National Goals:

At the end of under graduate program, the SVIMS-SPMCW Graduate should be able to:

1. Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession fulfill her social obligations towards realization of this goal.
2. Learn key aspects of National policies on health and devote herself to its practical implementation.
3. Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
4. Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
5. Become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

4. Institutional Goals:

The Indian Medical Graduates coming out of a SVIMS-Sri Padmavathi Medical College should:

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

ii. Be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.

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

iv. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

v. 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.

vi. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

1. Family Welfare and Maternal and Child Health (MCH);
2. Sanitation and water supply;
3. Prevention and control of communicable and non-communicable diseases;
4. Immunization;
5. Health Education and advocacy;
6. Indian Public Health Standards(IPHS) at various level of service delivery;
7. Bio-medical waste disposal
8. Organizational and or institutional arrangements.

vii. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counseling.

viii. 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 with maximum community participation.

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

x. Be competent to work in a variety of health care settings.

xi. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and depend ability and ability to relate to or show concern for other individuals.

5. Goals for the Learner:

In order to fulfill these goals, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

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

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

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

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

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

vi. Critical thinker who demonstrates problem solving skills in professional practice

vii. Researcher who generates and interprets evidence

6. 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, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

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

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.
- 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, healthcare delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- 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.
- 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.
- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 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 programmers and policies for the following:
    - Disease prevention,
    - Health promotion and cure,
    - Pain and distress alleviation, and
    - Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary(including home care) and/or secondary level that addresses chronicity, mental and physical disability,
- Demonstrate ability to appropriately identify and refer patients whom may require specialized or advanced tertiary care.
- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

Leader and member of the healthcare team and system

- Work effectively and appropriately with colleagues in an inter-professional healthcare team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- 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.

- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and incompliance with the national healthcare priorities and policies, as well as be able to collect, analyze and utilize health data.
- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.
- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision- making.

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

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

- Demonstrate ability to search (including through electronic means), and critically re-evaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career path way that is professionally rewarding and personally fulfilling.

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

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.
- Demonstrate a commitment to the growth of the medical profession as a while

II. Phase Wise Training and Time Distribution For Professional Development

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

In order to ensure that training is in alignment with the goals and competencies required for a medical graduate, there shall be Foundation Course to orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.

1.Training period, time distribution & University examinations:

SVIMS University shall organize admission timing and admission process in such a way that teaching in the first Professional year commences with induction through the Foundation Course by the 1st of August of each year from academic year 2024-25. There shall be no admission of students in respect of any academic session beyond 30th August from academic year 2024-25 or as per the guidelines notified by NMC from time to time. The University shall not grant admission of any student after the last date specified by NMC.

Every learner shall undergo a period of certified study extending over 4½ academic years, divided into four professional years 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.

Each academic year will have at least 39 teaching weeks with a minimum of eight hours of working on each day including one hour as lunch break.

Didactic lectures shall be one third of the schedule two third of the schedule shall include interactive sessions, practical, clinical or/and group discussions. The learning process shall include clinical experiences, problem- oriented approach, case studies and community health care activities.

Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension. Leaner centered learning methods shall include Early Clinical Exposure, problem-oriented learning, case studies, community- oriented learning, self- directed, experiential learning & Electives.

At the end of each professional year university examination will be conducted. If any student fails to clear university examination, she will appear in supplementary

examination.

Supplementary examinations and declaration of results shall be processed within 3-6 weeks from the date of declaration of the results of the main examination for every professional year, so that the candidates, who pass, can join the main batch for progression.

If the candidate fails in the supplementary examination of first MBBS, she shall join the batch of next academic/subsequent year. There shall be no supplementary batches. Partial attendance of examination in any subject shall be counted as an attempt.

If the MBBS students' attendance is less than 75% for theory and less than 80% for practical/ clinical training, the student cannot appear in supplementary examination following the regular annual examination. Such student is required to take classes with junior batch commencing in the next academic year to compensate for her attendance deficit, especially the course, she has missed. She will be eligible to appear in the examination in the next academic year only.

However, the college authorities will arrange additional classes to compensate for attendance deficit before the commencement of annual examination.

A candidate, who fails in the First Professional examination, shall not be allowed to join the Second Professional.

No student shall be allowed more than four (04) attempts for first year (first professional MBBS). In these four years, the maximum number of attempts permitted shall be four (04) which include supplementary examination also.

- A candidate, who fails in the second Professional examination, shall be allowed to join the third Professional Part I training, however she shall not be allowed to appear for the examination unless she has passed second professional examination.
- A candidate who fails in the third Professional (Part I) examination shall be allowed to join third Professional part II training, however she shall not be allowed to appear for the examination unless she has passed third Professional (Part I) examination.

Phase wise duration

The period of 4½ years is divided as follows:

Phase I - Total 12 months

Phase I First Professional phase of 12 months including Foundation Course of one week and university exams. It shall consist of - Anatomy,

Physiology, Biochemistry, introduction to Community Medicine, Humanities, Professional development including Attitude, Ethics & Communication (AETCOM) module, family adoption program through village outreach where-in each student shall adopt minimum of three(03) families and preferably at least five (05) families, Pandemic module and early clinical exposure, ensuring alignment & all types of integration and simulation-based learning.

Phase II - Total 12 months

Phase II - **Second Professional (12 months) including university exams.** It will consist of Pathology, Pharmacology, Microbiology, family visit under Community Medicine, General Surgery, General Medicine & Obstetrics & Gynecology Professional development including AETCOM module, simulation-based learning and introduction to clinical subjects ensuring both alignment & all types of 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 healthcare. Apart of training during clinical postings should take place at the primary level of healthcare. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve

i. Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,

ii. Involvement in patient care as a team member,

iii. Involvement in patient management and performance of basic procedures.

Phase III - **30months**

a. Third Professional Part I **(12months, including University exams)**

Forensic Medicine and Toxicology, Community Medicine, Medicine & allied, Surgery & allied, Pediatrics and Obstetrics& Gynecology including AETCOM, Pandemic module, Clinical teaching in General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Community Medicine, Psychiatry, Respiratory Medicine, Radio-diagnosis (& Radiotherapy) and Anesthesiology & Professional development.

b. Electives –one month in 2 blocks, 15 days each will be commenced after annual exam of III MBBS Part I.

c. Third Professional Part II (18months, including University exam)-
Subjects include:

- Medicine and allied specialties (General Medicine, Psychiatry, Dermatology, Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis)
- Surgery and allied specialties (General Surgery, Otorhinolaryngology, Ophthalmology, Orthopedics, Dentistry, Physical Medicine and rehabilitation, Anesthesiology and Radio diagnosis).
- Obstetrics and Gynecology (including Family Welfare)
- Pediatrics
- AETCOM module

2. Distribution of teaching hours phase wise.

First, second and third Professional part-I, teaching hours;

Time allotted: 12 months (approx. 52weeks)

Time available**:** Approx.**39weeks** (excluding13weeks) (39hours/week)

Prelim/University Exam & Results: 9weeks

Vacation: 2 weeks

Public Holidays : 2 weeks

Time distribution in weeks: 39 weeks x 39hours =1521 hours for Teaching-Learning

Final MBBS part-2, teaching hours:

Time allotted: 18months (approx.78weeks)

Time available: Approx. 62 weeks (excluding 16 weeks) (39 hours/ week) Prelim / University Exam & Results: 10 weeks

Vacation: 3 Weeks

Public Holidays: 3 Weeks

Timedistributioninweeks:62 x 39 hrs=2418hrsavailableforTeaching-Learning

(ClinicalPostings:15 hours/week II MBBS on wards included in academic schedule)

These are attached in separate annexure with all relevant tables.

Academic calendar shall be as per the Table 1.

Distribution of subjects for Professional Phase -wise training is given in Table 2. Minimum teaching hours prescribed in various disciplines are given in Tables 3-7. Distribution and duration of clinical postings is given in Table 8.

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

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.

A total of 25% of allotted time of third Professional shall be utilized for integrated learning with phase I and II subjects. This will be included in the assessment of clinical subjects.

Note:

- The period of training is minimum suggested. Adjustments where required depending on availability of time may be made by the concerned college/institution. This period of training does not include university examination period.
- An exposure to skills lab for atleast two (02) weeks prior to clinical postings shall be made available to all students.

3. New teaching/learning elements

a. Foundation Course

Goal: The goal of the Foundation Course is to prepare a learner to study medicine effectively.

Objectives:

(a) Orient the learner to:

- The medical profession and the physician's role in society
- The MBBS programme
- Alternate health systems i.e. AYUSH in India and history of Medicine
- Medical ethics, attitudes and professionalism
- Healthcare system and its delivery
- National health programmes and policies
- Universal precautions and vaccinations
- Patient safety and biohazard safety
- Principles of primary care (general and community based care)

- The academic ambience

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

- Language
- Interpersonal relationships
- Communication
- Learning including self-directed learning
- Time management
- Stress management
- Use of information technology, and artificial intelligence

(c) Train the learner to provide:

- First-aid
- Basic life support
- In addition to the above, learners may be enrolled in one of the following programmes which will be run concurrently:
- Local language programme
- English language programme
- Computer skills
- These may be done in the last two hours of the day. These sessions must be as interactive as possible.
- Sports (to be used through the Foundation Course as protected 04hours/week).
- Leisure and extracurricular activity (to be used through the Foundation Course as projected 02 hours per week).
- Institutions shall develop learning modules and identify the appropriate resource persons for their delivery.
- The time committed for the Foundation Course may not be used for any other curricular activity.

- The Foundation Course shall have a minimum of 75% attendance of all students mandatorily. This will be certified by the Dean of the college.

- The Foundation Course shall be organized by the Coordinator appointed by the Dean of the college and shall be under supervision of the Heads of MBBS phase1 departments.

- Every college shall arrange for a meeting with parents/wards of all students and records of the same shall be made available to UGMEB of NMC.

b. Early Clinical Exposure

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

- Recognize the relevance of basic sciences in diagnosis, patient care and management,
- Provide a context that will enhance basic science learning,
- Relate to experience of patients as a motivation to learn,
- Recognize attitude, ethics and professionalism as integral to doctor- Patient relationship,
- Understand the socio-cultural context of disease through the study of humanities.

Elements

- Basic science correlation: i.e. apply and correlate principles of basic sciences as they relate to patient care (this shall be part of integrated modules).
- Clinical skills: to include basic skills in interviewing patients, doctor-patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training shall be imparted in the time allotted for early clinical exposure).
- Humanities: to introduce learners to a broader understanding of the socio-economic frame work and cultural context with in which health is delivered through the study of humanities and social sciences.

c. Electives:

Objectives: To provide the learner with opportunities:

- For diverse learning experiences,
- It is mandatory for learners to do an elective. The elective time shall not be used to make up for missed clinical postings, shortage of attendance or other purposes.
- 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.
- Electives on topics in areas such as Research methodology, Use of Artificial intelligence and computers in Health and Medical Education, Health Management, Health economics, Indian system of medicine, Medical photography /clinical photography, Global health, Evidence based medicine, Art and music in medicine, Literary activities, etc. may be provided by the college/ institution.
- It shall be preferable that elective choices are made available to the learners in the beginning of the academic year.
- The learner must submit a learning log book based on both blocks of the electives.
- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the final MBBS examination/ NEXT.
- Institutions may use part of this time for strengthening basic skill certification.
- The student has to choose electives after completion of 3rd MBBS Part-I Examinations for a period of 1 month, 15 days in each block of laboratory & Clinical specialty departments of SVIMS.

Block1	Block2
Laboratory Experience:	**Clinical Specialty Experience:**
Pathology	Emergency room
Microbiology	CICU (Department of Cardiology)
Biochemistry	Psychiatry
Endocrinology lab	Dermatology
Pharma co-vigilance and clinical pharmacology	Oncology
Rural Community Health center	Endocrinology and Diabetes
Research	Nephrology
Student initiated research	Neurosurgery
Participation in faculty research	Cardiology / Cardiac Surgery
Community and epidemiologic surveys	GI surgery
Virology	Neurology
Blood Bank	Primary Health Center

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

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

- 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,
- Understand and apply the principles of system-based care as they relate to the care of the patient,
- Understand and apply empathy and other human values to the care of the patient,
- Communicate effectively with patients, families, colleagues and other health care professionals,
- Understand the strengths and limitations of alternative systems of medicine,
- Respond to events and issues in a professional, considerate and humane fashion,
- Translate learning from the humanities in order to further his professional and personal growth.

Learning experiences:

- This will be a longitudinal programme spread across the continuum of the MBBS programme including internship,
- Learning experiences shall include small group discussions, patient care scenarios, workshops, seminars, role plays, lectures etc.
- Attitude, Ethics& Communication Module (AETCOM module) developed by the erstwhile Medical Council of India should be used longitudinally for purposes of instruction.

- 75% attendance in Professional Development Programme (AETCOM Module) shall be mandatory for eligibility to appear for final examination in each professional year.

Internal Assessments hall include:

- Written tests comprising of short notes and creative writing experiences, OSCE based clinical scenarios/viva voce.

- At least one question in each paper of each clinical specialty in the University examination shall test knowledge competencies acquired during the professional development programme.
- Skill competencies acquired during the Professional Development Programme must be tested during the clinical, practical and viva voce.

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

a. Goal:

• To provide learners with experience in

• Longitudinal patient care,

• Being part of the health care team,

• Hands-on care of patients in outpatient and in-patient setting.

b. Structure:

- The first clinical posting in second professional shall orient learners to the patient, their roles and the specialty.
- The learner-doctor programme shall progress as outlined in Table 9.
- The learner shall function as a part of the health care team with the following responsibilities:
  - Be a part of the units out-patient services on admission days,
  - Remain with the admission unit until at least 6 PM except during designated class hours,
  - Be assigned patients admitted during each admission day for whom he will undertake responsibility, under the supervision of a senior resident or faculty member,
  - Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- Follow the patient's progress throughout the hospital stay until discharge,
- Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients,
- Participate in unit rounds on at least one other day of the week excluding the admission day,
- Discuss ethical and other humanitarian issues during unit rounds,
- Attend all scheduled classes and educational activities,
- Document his observations in a prescribed log book/case record.

No learner will be given independent charge of the patient in the capacity of primary physician of the concerned patient.

The supervising physician shall be responsible for all patient care decisions and guide the learner from time to time as required.

f. Assessment:

- 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.
- The logbook/ 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.
- The log book shall 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.

i. Eligibility to appear for Professional examinations

The performance in essential component soft training are to be assessed, based on:

(a) Attendance

- There shall be a minimum of 75% attendance 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. There shall be minimum of 80% attendance in family visits under Family adoption programme. Each student shall adopt minimum 3 families and preferably five families. The details shall be as per Family Adoption Program guidelines.
- If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting.
- Learners who do not have atleast 75% attendance in the electives will not be eligible for the Third Professional –Part II examination/ NEXT.
- A candidate lacking in the prescribed attendance and progress in any subject(s) in theory or practical should not be permitted to appear for the examination in that subject(s).

(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 healthcare in the community. Internal assessments shall not be added to summative assessment. However, internal assessment should be displayed under a separate column in detailed marks card.

(c) Learners must have completed the required certifiable competencies for that phase of training and completed the logbook Appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

(d) Regular periodic examinations shall be conducted throughout the course. There shall be no less than three internal assessment examinations in each subject of first and second professional year, and no less than two examinations in each subject of final professional year. An end of posting clinical assessment shall be conducted for each clinical posting in each professional year.

- 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.
- 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.
- 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.
- 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) for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.
- The results of internal assessment should be displayed on the notice board within

one week of the test.

- Universities shall guide the colleges regarding formulating policies for remedial measures for students who are either not able to score qualifying marks or have missed on some assessments due to any reason.

ii. University Examinations:

University examinations are to be designed with a view to as certain 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.

- Nature of questions shall include different types such as structured assays (Long-Answer Questions -LAQ), Short-Answer Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions - MCQ). Marks for each part shall be indicated separately. MCQs shall be accorded a weightage of not more than 20% of the total theory marks. Practical/clinical examinations shall 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 a 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.
- Viva/oral examination should assess approach to patient management, emergencies, and 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.

University Examinations shall be held as under:

(a) First Professional

The first Professional examination shall be held at the end of first Professional training (in the 12th month of that training),in the subjects of Anatomy, Physiology and Biochemistry.

(b) Second Professional

The second Professional examination shall be held at the end of second professional training(12th month of that training),in the subjects of Pathology, Microbiology, and Pharmacology.

(C) Third Professional

- Third Professional Part I examination shall be held at end of third Professional part 1 of training (12^{th} month of that training) in the subjects of Community Medicine, and Forensic Medicine including Toxicology

- Third Professional Part II / National Exit Test (NExT) as per NExT regulations- (Final Professional) examination shall be at the end of $17^{th}/18^{th}$ month of that training, in the subjects of General Medicine, General Surgery, Ophthalmology, Otorhinolaryngology, Obstetrics & Gynecology, and Pediatrics, and allied subjects as per NExT REGULATIONS.

Note:

- At least one question in each paper of each PHASE shall test the knowledge, and competencies acquired during the professional development programme (AETCOM module).

- Skills competencies acquired during the Professional Development Programme (AETCOM module) shall be tested during clinical, practical and viva.

Criteria for passing in a subject: As per the F.No. U/14021/8/2023-UGMEB, dt 1st September, 2023 & clarification provided by NMC vide N-U015 (29)/15/2024-UGMEB/014139, dated03/04/2024. candidates have to score 50% aggregate of theory & practical and minimum 40% in each separately in Theory and in practical in order to be declared as passed in every subject. No grace marks shall be given. It is also added that these shall be applicable to every examination conducted after the publication of these guidelines, irrespective to batch.

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

- Internal assessment marks will reflect as a separate head of passing at the university examination.

iii. Appointment of Examiners

- 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 following MBBS, in the subject in a college affiliated to a recognized medical college (by UGMEB of NMC).

- For Practical /Clinical examinations, there shall be at least four examiners for every learner, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner shall act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained.
- A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college. External examiner may be from outside the college/university/ state/ union territory.
- There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
- All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
- All theory paper assessment should be done as central assessment program (CAP) of concerned university.
- Internal examiners shall be appointed from the same institution for unitary examination in the same institution. For pooled examinations atone centre, the approved internal examiners from same university may be appointed.
- The Examiners for General Surgery and allied subjects as well as for General Medicine and allied subjects, shall be from General Surgery and General Medicine respectively.
- There shall be no grace marks to be considered for passing in an examination.

III Re-admission after discontinuation of study:

Every student shall attend her classes (theory, practical and clinical) on all working days unless the leave of absence is sanctioned by the principal/dean. If a student absents continuously for a period of 91 days or more, before one year after discontinuation and seeks permission to attend the course, her application shall be addressed to the dean of the college and shall be forwarded to the registrar while permitting the student to rejoin. The vice-chancellor may grant leave of absence applying such conditions as deemed necessary. Candidates who are absent for continuous period of one year or more without permission shall be deemed to have forfeited the admission and her studentship shall stand cancelled without any further notice.

IV Migration / Transfer of candidates:

To the extent permissible as per the prevailing regulations of the NMC on migration of students from one medical college to another medical college within or outside the state.

V Submission of Laboratory/ Clinical Record.

At the time of Practical Examination each candidate shall submit to the Examiners her laboratory record duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

VI Guidelines for Log Book:

1. The log book is a record of the academic / non-academic activities of the student.

2. Each medical student is responsible for maintaining their logbook.

3. Entries in the log book will be in accordance with activities done in the pre-clinical departments.

4. Some sections of the logbook are subject specific and have to be scrutinized by the head of the concerned department

5. It is the responsibility of the student to enter their activity in respective pages and get them duly signed by the supervising faculty.

6. The log book shall be kept as record work of the candidate for that department specialty and be submitted to department as a Bonafide record of the candidate before appearing for the university examination.

VII Malpractice:

Punishment for use of unfair means (malpractice) in university examinations:
The regulations of malpractice for MBBS course will as per the guidelines of SVIMS University approved vide resolution no. 17 of 30th Academic Senate meeting held on 30/04/2012.

VIII Declaration of Class:

- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of grand total marks (university examination) prescribed will be declared to have passed the examination with distinction.

- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of grand total marks (university examination) prescribed will be declared to have passed the examination in First Class.

- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of grand total marks (university examination) prescribed will be declared to have passed the examination in Pass Class.

- A candidate passing a university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by her in the examination.

Note: Please note fraction of marks will not be rounded off for clauses (a), (b) and (c)

IX Award of Degree:

The university on satisfactory completion of the compulsory internship shall award the degree.

X.ACADEMIC CALENDAR PROPOSED BY NMC

Table1: Time distribution of MBBS Programme & Examination Schedule

Proposed Academic Calender for CBME 2023-24 Batch : 2023

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2023									1	2	3	4
2024	5	6	7	8	9	10	11	12-Ist Prof, exam, result	13- 2nd MBBS	14	15	16
2025	17	18	19	20	21	22	23	24- 2nd Prof exam, result	25- Final 1st	26	27	28
2026	29	30	31	32	33	34	35	36- Final 1st exam, result	37- Final 2nd	38	39	40
2027	41	42	43	44	45	46	47	48	49	50	51	52
2028	53	54 NEXT-1	1- CRMI	2	3	4	5- 2nd proposed NEXT	6	7	8	9	10
2029	11	12-NEXT-Step 2										

Legends:

AETCOM: Attitude, Ethics and Communication skills

FAP: Family Adoption Programme (village outreach)

SDL: Self Directed Learning

SGL: Small Group Learning (tutorials/ Seminars/ Integrated Learning)

PCT (mentioned in Assessments): Part Completion Test

Table 2: Distribution of subjects in each Professional Phase

Phase &year of MBBS training	Subjects & Teaching Elements	Duration (months)	University Examination
First Professional **MBBS**	i. Foundation course **-1**week, remaining spread over 6 months at the discretion of college ii. Anatomy, Physiology & Biochemistry, Introduction to Community Medicine, including Family adoption programme (FAP) through village outreach iii. Early Clinical Exposure iv. Attitude,Ethics,andcommunicationModule(AETCOM)includingHumanities	12 months	1st professional
Second Professional **MBBS**	i. Pathology, Microbiology, Pharmacology ii. Introduction to clinical subjects iii. Clinical postings, Family visits for FAP iv. AETCOM	12 months	2nd professional
Third Professional part 1, **MBBS,** including Electives**1** month	i. Community Medicine, Forensic Medicine and Toxicology, Medicine & allied, Surgery & allied, Pediatrics, Obstetrics & Gynecology ii. Family visits for FAP iii. Clinical postings iv. AETCOM v. Electives-1month,2blocks,15dayseach	12 months	Final professional -Part1
Third Professional part 2, **MBBS**	i. General Medicine, Dermatology, Psychiatry, Respiratory medicine, Pediatrics, General Surgery, Orthopedics, Oto-rhinolaryngology, Ophthalmology, Radiodiagnosis, Anesthesiology, Obstetrics &Gynecology (ii)Clinical postings (iii)AETCOM	**18** months	Final Professional- Part II

Table 3: Foundation Course

(one week + spread over 6 months at the discretion of college)

Subjects/Contents	**Teaching hours**
Orientation	30
Skills Module	34
Field visit to Community Health Center	08
Introduction to Professional Development & AETCOM module	40
Sports, Yoga and extra-curricular activities	16
Enhancement of language/computer skills	32
Total	**160**

Table .4 Distribution of Subject Wise Teaching Hours for 1st MBBS

Subject	Lectures	SGL	SDL	Total
Foundation Course				39
Anatomy	210	400	10	620
Physiology	130	300	10	440
Biochemistry*	78	144	IO	232
Early Clinical Exposure**	27	-	0	27
Community Medicine	20	20		40
FAP			27	27
(AETCOM)***	-	26	-	26
Sports and extra-curricular activities	-	-	-	10
Formative Assessment and Term examinations	-	-	-	60
Total	**464**	**918**	**30**	**1521#**

* Including Molecular Biology

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

*** AETCOM module shall be a longitudinal programme.

Includes hours for Foundation course also

Table .5 Distribution of Subject Wise Teaching Hours for 2nd MBBS

Subjects	Lectures	SGL	Clinical Postings*	SDL	Total
Pathology	80	165	-	10	255
Pharmacology	80	165	-	10	255
Microbiology	70	135	-	10	215
Community Medicine	15	0	0	10	25
FAP	0	0	30		30
Forensic Medicine and Toxicology	12	22	-	08	42
Clinical Subjects	59		540	-	599
AETCOM	-	29	-	8	37
Sports, Yoga and extra-curricular activities	-	-	-	20	35
Pandemic module				28	28
Final total	316	516	585	104	1521

Pl. note: Clinical postings shall before 3 hours per day, Monday to Friday.

There will be15hours per week for all clinical postings.

Table 6-Distribution of Subject Wise Teaching Hours for 3rd MBBS part 1

Subject	Lectures	SGL	SDL	Total
Electives	0	156	0	156
Gen. Med.	30	50	10	90
Gen Surgery	30	50	10	90
Obs.&Gyn	30	50	10	90
Pediatrics	25	30	10	65
Orthopedics	15	20	10	45
For. Med. & Tax.	40	70	20	130
Community Med	55	70	20	145
FAP(Visits +log book submission)	-	21	10	31
Otorhinolaryngology(ENT)	15	20	10	45
Ophthalmology	15	20	10	45
Clinical posting			540	540
AETCOM	0	19	12	31
Pandemic module	18	0	0	18
Total	**273**	**546**	**672**	**1521**

Table 7: Distribution of Subject wise Teaching Hours for 3rd MBBS part-II

Subjects	Lectures	SGL	SDL	Total
General Medicine	95	155	55	**260**
General Surgery	80	140	40	**260**
Obstetrics and Gynecology	80	140	40	**260**
Pediatrics	30	60	30	**120**
Orthopedics	25	35	25	**85**
AETCOM	30	0	22	**52**
Dermatology	15	10	15	**40**
Psychiatry	15	15	15	**45**
Otorhinolaryngology (ENT)	15	25	15	**55**
Ophthalmology	15	25	15	**55**
Radiodiagnosis	8	15	15	**38**
Anesthesiology	8	15	15	**38**
Pandemic module	28	-	-	**28**
TOTAL	**444**	**610**	**302**	**1356**

Extra hours may be used for preparation of NExT or SDL.

Table no, 8; Clinical Posting Schedules in weeks

Subjects	Period of training in weeks			Total Weeks
	II MBBS	III MBBS Part I	III MBBS Part II	
Electives	0	4	0	4
General Medicine	9	4	14	27
General Surgery	7	4	10	21
Obstetrics &Gynecology	7	4	10	21
Pediatrics	4	4	5	13
Community Medicine	4	4	0	8
Orthopedics	2	2	4	8
Otorhinolaryngology	0	3	4	7
Ophthalmology	0	3	4	7
Psychiatry	0	2	4	6
Radio-diagnosis	0	0	2	2
Dermatology	2	2	2	6
Dentistry	1	0	0	1
Anesthesiology	0	0	J	3
Total	**36**	**36**	**62**	**134**

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, family adoption program
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education, family adoption program
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above(except Family adoption programme) and decision making, management and outcomes

Table 10: Marks distribution for various subjects for University Annual Examinations

Phase of Course	Theory	Practical's	Passing criteria
1st MBBS			
Anatomy-2 papers	Paper1-100	100	Mandatory to get 40% marks separately in theory and in practicals; and totally 50%for theory plus practicals.
	Paper2-100		
Physiology-2 papers	Paper1-100	100	
	Paper2-100		
Biochemistry-2 papers	Paper1-100	100	
	Paper2-100		
2nd MBBS			
Pathology-2 papers	Paper1-100	100	
	Paper2-100		
Microbiology-2 papers	Paper1-100	100	
	Paper2-100		
Pharmacology-2papers	Paper1-100	100	
	Paper2-100		
Final MBBS part 1			
Forensic Med.Tox.-1paper	Paper1- 100	50	
Community Med-2 papers	Paper1-100	100	
	Paper2-100		

For NEXT, as per NEXT regulations.

Phase wise marks distribution of internal assessment – Theory & Practical

THEORY											
Name of the Institute:											
DEPARTMENT OF Anatomy/ Physiology/ Biochemistry											
Faculty: MBBS		Year/Phase-I						Date: dd/mm/yyyy			
		Formative Assessment Theory			Continuous Internal Assessment Theory						
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total
							Self-Directed Learning				
		100	100	200	15	30	15	15	15	10	500

Professor & Head

Department of

Name of the Institute

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Anatomy/ Physiology/ Biochemistry												
Faculty MBBS		Year/Phase-I									Date:dd/mm/yyyy	
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)				Journal (Record book/Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity	Research			
			100	100	100	60	30	40	20	40	10	500
Professor & Head Department of Name of the Institute												

THEORY											
Name of the Institute:											
DEPARTMENT OF Pathology/ Pharmacology / Microbiology											
Faculty: MBBS		Year/Phase-II							Date: dd/mm/yyyy		
		Formative Assessment Theory			Continuous Internal Assessment Theory						
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total
							Self-Directed Learning				
		100	100	200	15	30	15	15	15	10	500

Professor & Head

Department of

Name of the Institute

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Pathology/ Pharmacology/ Microbiology												
Faculty MBBS		Year/Phase-II									Date: dd/mm/yyyy	
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)				Journal (Record book/Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity	Research			
			100	100	100	60	30	40	20	40	10	500
Professor & Head Department of Name of the Institute												

THEORY													***Cumulative percent of Theory Practical***
Name of the Institute:													
DEPARTMENT OF Community Medicine													
Faculty: final MBBS		Year/Phase-3 Part-I							Date: dd/mm/yyyy				
		Formative Assessment Theory			Continuous Internal Assessment Theory								
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total	Percentage theory (minimum cut of 40%)	Theory + Practical = 500+500 =1000 (minimum cut off 50%)
							Self-Directed Learning						Note: Minimum 40% separately for theory practical and 50% cumulative in IA for eligibility in summative examination.
		100	100	200	15	15	30	15	15	10	500	%	
Professor & Head Department of Name of the Institute													

THEORY													***Cumulative percent of Theory Practical***
Name of the Institute:													
DEPARTMENT OF Forensic Medicine													
Faculty: final MBBS		Year/Phase-3 Part-I							Date: dd/mm/yyyy				
		Formative Assessment Theory			Continuous Internal Assessment Theory								
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total	Percentage theory (minimum cut of 40%)	Theory + Practical = 375+500 =875 (minimum cut off 50%)
							Self-Directed Learning						
		100	100	100	10	10	25	10	10	10	375	%	
Professor & Head Department of Name of the Institute													

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Community Medicine												
Faculty Final MBBS		Year/Phase-3 part-I							Date:dd/mm/yyyy			
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)			Journal (Record book/Portfolio)	Attendance (Practical)	Total	Percentage Practical (Minimum cut off 40%)
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	Family adoption programme competencies in comm. medicine	AETCOM Competencies				
			100	100	100	60	30	30	40	10	500	%
Professor & Head Department of Name of the Institute												

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Forensic Medicine												
Faculty Final MBBS		Year/Phase-3 part-I							Date:dd/mm/yyyy			
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)			Journal (Record book/Portfolio)	Attendance (Practical)	Total	Percentage Practical (Minimum cut off 40%)
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity				
			100	100	100	70	40	40	40	10	500	%
Professor & Head Department of Name of the Institute												

THEORY

Name of the Institute:

DEPARTMENT OF Paediatrics/ ENT/ Ophthalmology

Faculty: final MBBS	Year/Phase- Part-II		Date: dd/mm/yyyy

		Formative Assessment			Continuous Internal Assessment						
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total
							Self-Directed Learning				
		100	100	100	10	25	10	10	10	10	375

Professor & Head

Department of

Name of the Institute

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Paediatrics/ ENT/ Ophthalmology												
Faculty: final MBBS		Year/Phase Part-II									Date:dd/mm/yyyy	
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)				Journal (Record book/Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity	Research			
			100	100	100	60	30	50	20	40	10	500
Professor & Head Department of Name of the Institute												

THEORY

Name of the Institute:

DEPARTMENT OF Medicine/ Surgery/ OBG

Faculty: final MBBS	Year/Phase- Part-II		Date: dd/mm/yyyy

		Formative Assessment			Continuous Internal Assessment						
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total
							Self-Directed Learning				
		100	100	200	15	30	15	15	15	10	500

Professor & Head

Department of

Name of the Institute

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Medicine/ Surgery/ OBG												
Faculty: final MBBS		Year/Phase- Part-II									Date: dd/mm/yyyy	
			Formative Assessment			Continuous Internal Assessment						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/second Ward Leaving Examination	Prelims Practical	Log Book (200)				Journal (Record book/Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity	Research			
			100	100	200	100	40	40	20	40	10	650

Professor & Head

Department of

Name of the Institute

Department of Anatomy

CURRICULUM

a. Competencies:

The undergraduate must demonstrate:

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

b. Broad subject specific objectives

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

- Comprehend the normal disposition, clinically relevant interrelationships, functional and cross -sectional Anatomy of the various organs and structures of the body.
- Identify the microscopic structure and correlate elementary ultra-structure of various organs and tissues with the functions as a prerequisite for understanding the altered state in various disease processes
- Comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions of the organs and systems. He should be able to locate the site of gross lesions according to the deficits encountered
- Demonstrate knowledge of the basic principles and sequential development of the organs and systems; recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards. He should be able to explain the developmental basis of the major variations and abnormalities.

c. Skills:

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

- Identify and locate all the structures of the body and mark the topography of the Living Anatomy.

- Understand clinical basis of some common clinical procedures i.e. intramuscular and intravenous injection, lumbar puncture and kidney biopsy etc.
- Identify the organs and tissues under the microscope.

- Understand the principles of karyotyping and identify the gross congenital anomalies.

- Understand principles of newer imaging techniques and interpretation of CT scan, sonogram, MRI & Angiography.

d. Integration:

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

Anatomy
Course content

Total duration – 1 year
Total teaching hours - 656

THEORY – 210 hrs.			**SGT/INTEGRATEDLEARNING/TUTORIALS/PRACTICALS- 400 hrs**		**SDL - 10 hrs**
	Region	Hours	Region	Hours	
1.	General Anatomy	12	Integrated teaching	10	
2.	Upper limb	17	Upper limb	56	
3.	Lower limb	17	Lower limb.	52	
4.	Thorax	13	Thorax.	30	
5.	Head and neck	32	Head and neck.	70	
6.	Abdomen pelvis and perineum	28	Abdomen, pelvis & perineum	66	
7.	Brain and spinal cord	17	Brain and spinal cord	30	
8.	General Histology Systemic Histology	10 20	Histology	64	
9.	General Embryology	10	Embryology	06	
10.	Systemic Embryology	26	Genetics	05	
11.	Genetics	8	Radiology	9	
Total		**210 hrs**	**Total**	**400**	

Didactic lectures: 210 hrs. - General Anatomy, Gross Anatomy, Embryology, Histology, Genetics.

SGT/ Integrated learning/ Tutorials/ Practicals (400 hrs.)

SDL – 10 hrs

ECE – 9 hrs

AETCOM – 7 hrs

Assessment – 20 hrs

GENERAL ANATOMY-12 Hrs

1. Introduction to Anatomy - 1hr
2. Terminology (AN: 1.1) - 1 hr
3. Skeletal system (AN: 2.1-2.4, 26.6) - 2 hrs
4. Arthrology (AN: 2.5, 2.6) - 2 hrs
5. Muscular system (AN:3.1,3.3) - 1 hr
6. Nervous system (AN:7.1-7.8) - 1 hr
7. Cardiovascular system(AN:5.1-5.8) - 2 hr
8. Lymphatic system (AN:6.1-6.3) - 1 hr
9. Integumentary system (AN:4.1-4.5) - 1 hr

GENERAL HISTOLOGY

	THEORY – 10 hrs.	**PRACTICALS 10 x2 = 20 hrs.**
1.	Microscope, common artifacts	Microscope and common artifacts
2.	Epithelial tissue(AN:65.1,65.2)	Simple & Stratified epithelia, Glandular epithelia
3.	Connective tissue (AN:66.1,66.2)	Connective tissue (AN:66.1,66.2)
4.	Cartilage (AN:71.2)	Cartilage – hyaline, elastic, white fibro cartilage (AN:71.2)
5.	Bone(AN:71.1)	Bone – T.S & L.S(AN:71.1)
6.	Muscular tissue(AN:67.1-67.3)	Muscles- Skeletal, cardiac, smooth(AN:67.1-67.3)
7.	Nervous tissue(AN:68.1-68.3)	Types of neurons, Peripheral nerve(AN:68.1- 68.3)
8.	Blood vessels(AN:69.1-69.3)	Blood vessels (AN:69.1-69.3)
9.	Lymphoid tissue (Lymphnode, tonsil) (AN:70.2)	Lymph Node, Tonsil, Thymus, Spleen (AN:70.2)
10.	Lymphoid tissue (Thymus, spleen) (AN:70.2)	Revision of all slides

SYSTEMIC HISTOLOGY

	THEORY – 20 Hrs.	PRACTICALS 22 X 2 = 44 Hrs.
1.	Salivary Glands (AN:70.1)	Salivary Glands (AN:70.1)
2.	GIT - Tongue, Tooth (AN:43.2) &Oesophagus, (AN:52.1)	Tongue, Tooth (AN:43.2) & GIT–Oesophagus, (AN:52.1)
3.	Stomach (AN:52.1)	Stomach- Fundus, Pylorus(AN:52.1)
4.	GIT–Small Intestine (AN:52.1)	Small Intestine – Duodenum, Jejunum, Ileum (AN:52.1)
5.	GIT – Large Intestine, Appendix(AN:52.1)	Large Intestine, Appendix(AN:52.1)
6.	Liver (AN:52.1)	Liver (AN:52.1)
7.	GIT - Gall Bladder , Pancreas(AN:52.1)	Gall Bladder, Pancreas(AN:52.1)
8.	Respiratory System– Trachea, Lungs(AN:25.1)	Respiratory System -Trachea, Lung(AN:25.1)
9.	Urinary System- Kidney, Ureter, Urinary bladder (AN:52.2)	Urinary System – Kidney, Ureter, Urinary bladder (AN:52.2)
10.	Female Reproductive System – Ovary, Uterine tube (AN:52.2)	Female Reproductive System – Ovary, Uterine tube(AN:52.2)
11.	Female Reproductive System – Uterus, Vagina (AN:52.2)	Female Reproductive System – Uterus, Vagina (AN:52.2)
12.	Female Reproductive System – Placenta, Umbilical cord, Mammary Gland (AN:52.3)	Placenta, Umbilical cord, Mammary Gland(AN:52.3)
13.	Male Reproductive System – Testis, Epididymis (AN:52.2)	Testis, Epididymis(AN:52.2)
14.	Male Reproductive System – Vas Deferens, Prostate (AN:52.2)	Vas Deferens, Prostate (AN:52.2)
15.	Endocrine System - Pituitary, Thyroid Gland (AN:43.2)	Endocrine System - Pituitary, Thyroid Gland (AN:43.2)
16.	Endocrine System - Parathyroid, Supra renal gland (AN:43.2)	Endocrine System - Parathyroid, Supra renal gland (AN:43.2)

17.	Nervous System – Spinal Cord, Cerebrum (AN:64.1)	Spinal Cord, Cerebral Cortex (AN:64.1)
18.	Nervous System- Cerebellum, Sections Of Medulla, Pons, Mid brain (AN:64.1)	Cerebellar Cortex, Medulla, Pons, Mid brain(AN:64.1)
19.	Special Senses - Cornea, Retina (AN:43.2) , Organ of Corti (AN:40.3)	Cornea , Retina (AN:43.2) Organ of Corti (AN:40.3)
20.	Skin and Appendages(AN:72.1)	Skin – Thick, Thin Skin (AN:72.1)
21.		Total Histology Slides Revision
22.		Total Histology Slides Revision

GENETICS THEORY - 8 HOURS

1. Chromosomes (AN:73.1-73.3)
2. Patterns of Inheritance (AN:74.1-74.4)
3. Principles Of Genetics ,Chromosomal Aberrations & Clinical Genetics (AN:75.1-75.5)
4. Prenatal Diagnosis (AN:81.1-81.3)

GENETICS PRACTICALS - 5 hrs

1. Sex-chromatin
2. Pedigree chart
3. Karyotyping

EMBRYOLOGY - 36 hrs.

GENERAL EMBRYOLOGY 10 HOURS

1. Introduction to embryology (AN:76.1,76.2)
2. Growth and Differentiation (AN:76.1, 76.2)
3. Gametogenesis-Spermatogenesis and Oogenesis(AN:77.1-77.3)
4. Fertilization , Cleavage , Implantation (AN:77.4-77.6)
5. Changes In 2nd Week (AN:78.1-78.5)
6. Changes In 3rd Week (AN:79.1-79.6)
7. Differentiation of Germ Layers (AN: 80.1- 80.7)
8. Foldings of Embryo & Development of Limb Buds (AN:13.8, 20.10)
9. Placenta and Foetal Membranes (AN: 80.1- 80.7)
10. Multiple Births & Twinning (AN:80.4)

SYSTEMIC EMBRYOLOGY - 26 HOURS

1. Digestive System - 7 Hrs

- Branchial Apparatus (AN: 43.4)
- Development of Face, Nose, Palate, Teeth, Tongue & Associated Anomalies (AN: 43.4, 39.1)
- Development of GIT & Associated Glands (AN: 52.1)

2. Cardio Vascular System - 6 Hrs

- Development of Heart & Associated Anomalies (AN: 25.2,25.4)
- Development of Major Arterial System (AN: 25.5,25.6)
- Development of Major Venous System (AN: 25.6)
- Foetal Circulation (AN:25.3)

3. Genito-Urinary System - 7 Hrs

- Development of Kidney, Ureter, Bladder, Urethra and associated Anomalies (AN:52.7)
- Male Reproductive System (AN:52.8)
- Female Reproductive System(AN: 52.8-)
- External Genitalia (AN: 52.8)

4. Development of Nervous System (AN: 64.1, 64.2,64.3) - 2

5. Development of Eye & Ear (AN: 43.4, 40.6)-1

6. Development of Endocrine Glands (AN: 43.2)-1

7. Development of Skin (AN: 72.1) & Its Appendages and Mammary Gland (AN: 9.3)-1

8. Development of Respiratory System (AN: 25.2) – 1

Regional Anatomy- Upper Limb

	Osteology-6hrs	Theory-17hrs.	Practicals-50 Hrs
1.	Clavicle (AN:8.1-8.4)	Pectoral Muscles and Clavipectoral Fascia(AN:9.1,10.11)- 1	General Introduction -2
2.	Scapula (AN:8.1,8.2,8.4)	Mammary Gland (AN:9.2,)-1	Introduction to Upper Limb, Skin Incision (AN: 13.1,13.2)-2
3.	Humerus (AN:8.1,8.2, 8.4)	Axilla and Its Contents Includes Axillary Artery (AN:10.1,10.2,10.4,10.7) - 1	Pectoral Region (Mammary Gland) (AN:9.2)- 2
4.	Radius (AN:8.1,8.2, 8.4)	Brachial Plexus (AN:10.3,10.5,10.6) - 1	Clavipectoral Fascia, Pectoral Muscles (AN:9.1,10.11) -2
5.	Ulna (AN:8.1,8.2, 8.4)	Muscles of Arm, Back and Scapula(Includes Deltoid Muscle) (AN:10.8-10.11,11.1) - 1	Axilla and Its Contents (AN:10.1-10.7)- 4
6.	Articulated Hand (AN:8.5,8.6,13.4)	Cubital Fossa (AN:11.5), Anastomosis around Scapula (AN:10.9) and Elbow(AN:11.6) -1	Back Dissection, Muscles of Back (AN:10.8,10.9) -4
7.		Muscles of Forearm(AN:12.1,12.11) -1	Cutaneous Innervation (AN: 13.2) Venous And Lymphatic Drainage of Upper Limb(AN:11.3,13.1)- 2
8.		Flexor (AN:12.3,12.4) and Extensor Retinaculae (AN:12.14),Dorsum of hand(AN:12.15) -1	Shoulder Region(Inter muscular Spaces, Deltoid) (AN:10.13,10.10)- 4
9.		Palm(AN:12.5,12.6,12.9,12.10) -2	Shoulder Joint (AN:10.12) -2
10.		Cutaneous Innervation (AN: 13.2), Venous and Lymphatic Drainage of Upper Limb(AN:11.3,13.1)- 1	Anterior Compartment of Arm (AN:11.1,11.2) -2
11.		Joints of Shoulder Girdle(Includes Shoulder Joint) (AN:10.12,13.4) -1	Cubital Fossa (AN:11.3,11.5,11.6) -2
12.		Elbow Joint and Radioulnar Joints(AN:13.3)- 1	Posterior Compartment of Arm (AN:11.1)- 2
13.		Wrist and 1stCarpometa carpal Joints (AN:12.6,13.3)- 1	Front of Forearm and Hand (AN:11.4,12.1-12.10)- 6
14.		Nerves of Upper Limb(Includes Axillary Nerve, Median ,Ulnar and Radial Nerves) (AN:10.13,11.2,11.4,12.2,12.3,12.7,12.8)-2	Back of Forearm and Hand(AN:12.11-12.15) -4
15.		Arteries of Upper Limb(AN:11.2,12.2,12.7)-1	Joints of Upper Limb (Includes- Elbow, Wrist, Carpo Metacarpal and

			Inter Carpal, Inter Phalangeal Joints) (AN:13.3-13.5) -6
16.			Radiological Anatomy (AN: 13.5)-2
17			Surface Marking (AN:13.7)-2

Regional Anatomy- Lower Limb

	Osteology-10hrs	**Theory-17 Hrs.**	**Practicals-42 Hrs**
1.	Hipbone (AN:14.1-14.4)-2	Front of Thigh (Femoral Triangle) (AN:15.1-15.4,20.3-20.5,20.10)-1	Introduction of Lower Limb and Front of Thigh (AN:15.1,-15.4, 20.3- 20.5,20.10,20.7) -6
2.	Femur (AN:14.1-14.4) -2	Adductor Compartment & Adductor Canal (AN:15.1,15.2,15.5)-1	Medial Side of Thigh (AN:15.1,15.2,15.5)-2
3.	Tibia, Fibula (AN:14.1-14.4)-4	Gluteal Region (AN:16.1,16.2,16.3)-1	Gluteal Region (AN:16.1-16.3)-4
4.	Articulated Foot (AN:14.1-14.4)-2	Back of Thigh and Popliteal Fossa (AN: 16.4,16.5,16.6)-1	Popliteal Fossa (AN:16.6)-2
5.		Hip Joint (AN: 17.1,17.2,17.3)-1	Back of Thigh(AN:16.4,16.5)-2
6.		Anterior Compartment of Leg and Dorsum of Foot (AN:18.1-18.3)-1	Hip Joint(AN:17.1-17.3)-2
7.		Posterior Compartment of Leg, Lateral compartment of leg (AN:19.1,19.2,19.3,19.4,19.5)-1	Anterior Compartment of Leg and Dorsum of Foot (AN:18.1-18.3)-4
8.		Knee Joint (AN:18.4,18.5,18.6,18.7)-2	Posterior Compartment and Lateral Compartment of Leg (AN:19.1-19.5)-6
9.		Ankle Joint and Retinaculae around Ankle Joint(AN:20.1,20.3)-1	Retinaculae around Foot (AN:20.3)-2
10.		Venous and Lymphatic Drainage of Lower Limb (AN:20.3,20.4,20.5)-1	Sole(AN:19.6,19.7)-4
11.		Arches of Foot (AN:19.5,19.6,19.7)-1	Knee Joint(AN:18.4-18.7)-2
12.		Sole(AN:19.6,19.7)-2	Ankle, Subtalar and Joints of Foot (AN:20.1,20.2)-2
13.		Tibiofibular Joint, Subtalar and Joints of Foot (AN:20.1,20.2)-1	Radiological Anatomy (AN:20.6)-2
14.		Nerves of Lower Limb (AN:15.1,15.2,16.116.2,16.5,18.2,19.2)-1	Surface Marking (AN:20.7,20.8,20.9)-2
15.		Arteries of Lower Limb (AN18.2,19.2,20.8)-1	

Regional Anatomy- Thorax

	Osteology-4hrs	Theory-13hrs.	Practicals- 26 Hrs
1.	Sternum -1	Inter costal spaces (AN:21.4-21.7)	Inter costal spaces (AN:21.4-21.7)-2
2.	Ribs – 1	Mediastinum (AN:21.11)	Mediastinum (AN:21.11) -2
3.	Thoracic Vertebrae – 1	Pleura (AN:24.1,25.2,25.9)	Pleura (AN:24.1,25.2,25.9)-2
4.	Thoracic Cage - 1	Lungs (AN:24.2,24.3,24.5,25.1,25.2)	Lungs (AN:24.2,24.3,24.5,25.1,25.2)-2
5.		Pericardium (AN:22.1)	Middle Mediastinum (Pericardium) (AN:22.1)-2
6.		Heart – External Features (AN:22.2) Internal Features (AN:22.2) Blood Supply (22.3)-4	Heart – External Features (AN:22.2) Internal Features (AN:22.2) Blood Supply (22.3)-4
7.		Venous Drainage of Thorax (AN:22.5)	Superior Mediastinum (Arch of Aorta) (AN:23.4)-2
8.		Trachea & Oesophagus (AN:23.1,24.6,25.1,25.2,25.9,25.8)	Trachea & Oesophagus (AN:23.1,24.6,25.1,25.2,25.9,25.8)-2
9.		Arch of Aorta & Thoracic Duct (AN: 23.4,23.2)	Venous Drainage of Thorax (AN:22.5) Thoracic Duct (AN:23.2)-2
10.		Diaphragm (AN: 47.13)	Diaphragm (AN: 47.13)-2
11.			Radiological Anatomy (AN: 25.7,25.8)-2
12.			Surface Marking (AN:25.9)-2

Regional Anatomy- Head & Neck

	Osteology-10 Hrs	Theory-32hrs.	Practicals-60 Hrs
1.	Skull Osteology (AN:26.1-26.7) -8	Scalp (AN:27.1,27.2)-1	Scalp, Temple, Face (AN:27.1-27.2) – 2
2.	Hyoid Bone, Cervical Vertebrae (AN:26.7)-1	Face (AN: 28.1-28.4 28.6-28.8) – 1	Side of Neck – Posterior Triangle (AN:29.1-29.4) – 4
3.	Mandible – 1	Lacrimal Apparatus (AN:31.4)-1	Dissection of Back (AN: 41.1,42.2) – 2
4.		Posterior Triangle of Neck (AN:29.1 -29.4) – 1	Anterior Triangles of Neck (AN:32.1-32.2,34.1,34.2)-6
5.		Anterior Triangle of Neck (AN: 32.1,32.2)(AN:34.1,34.2)-2	Cranial Cavity (AN:30.1-30.5) -4
6.		Deep Cervical Fascia (AN: 35.1) – 1	Deep Dissection of Neck (AN: 35.1-35.10) – 4
7.		Dural Folds & Dural Venous Sinuses(AN: 30.3,30.4)-1	Pre vertebral region (AN:35.1) – 2
8.		Thyroid Gland (AN:35.2,35.8)-1	Deep dissection of Face (AN:28.1-28.10)-2
9.		Bony Orbit & Extra Ocular Muscles (AN: 31.1- 31.3)-1	Orbit (AN:31.1-31.3)-4
10.		Cranial Nerves -III &IV,VI (AN:31.2,31.5)-1	Parotid region (AN:28.9-28.10)-2
11.		Parotid Gland (AN: 28.9,28.1)-1	Temporal & Infra Temporal fossa (Anl33.1-33.4)-8
12.		Infratemporal Fossa and its contents (AN:33.1,33.4)-1	Submandibular region (AN:34.1,34.2)-2
13.		Muscles of Mastication And Temporo mandibular Joint (AN: 33.1,33.3-33.5)-1	Mouth (Tongue) and Pharynx (AN:39.1,36.3,36.5)-2
14.		Submandibular Region (AN:34.1,34.2)-1	Nasal cavity - (AN:37.1-37.3)-2
15.		Soft Palate And Palatine Tonsil (AN:36.1- 36.5)-1	Larynx (AN:38.1-38.3)-4
16.		Tongue(AN:39.1,39.2)-1	Organs of Hearing and Equilibrium(AN:40.1-40.5) -2
17.		Pharynx(AN:36.3,36.5)-1	Eye Ball(AN:41.1-41.3)-2

18.		Nasal septum and Paranasal air sinuses (AN:37.1,37.2)-1	Joints of Neck(AN:43.1)-2
19.		Lateral wall of nose (AN:37.1)-1	Radiological Anatomy (AN: 43.7-43.9)-2
20.		Larynx (AN:38.1-38.3)-1	Surface Marking (AN:43.6)-2
21.		Middle Ear, Tympanic Membrane (AN:40.2,40.4)-1	
22.		Internal Ear,(AN:40.3) Auditory Tube (AN:40.5)-1	
23.		Cranial Nerves –VII (AN:43.1,58.3,28.1)-1	
24.		Eye Ball (AN:41.1-41.3)-1	
25.		Visual Pathway (AN:30.5)-1	
26.		Cranial Nerves -V(AN: 33.1)-1	
27.		Cranial Nerves -X(AN: 35.7)-1	
28.		Cranial Nerves -IX,XI,XII (AN: 35.7,39.2)-1	
29.		Peripheral Parasympathetic Ganglia (AN:33.1,34.1,28.9)-1	
30.		Lymphatic Drainage of Head & Neck(AN:28.5,35.5)-1	
31.		Atlanto Occipital &Atlanto Axial Joints (AN:43.1)-1	

REGIONAL ANATOMY - BRAIN AND SPINAL CORD

	THEORY – 17 Hrs.	**PRACTICALS – 30 Hrs.**
1.	Spinal Cord – External Features, Meninges, Blood Supply, Tracts (AN:57.1-57.5) – 3	Spinal Cord – External Features, Meninges (AN:57.1-57.5) – 2
2.	Brain Stem- Medulla Oblongata(AN:58.1-58.4), Pons (AN:59.1-59.3), Midbrain(AN:61.1-61.3) – 3	Cerebrum –Surfaces, External Features, Meninges, Blood Supply, Functional areas(AN:62.2,62.6) -6
3.	Cerebellum, cerebellar Peduncles(AN:60.1-60.3) – 2	Brainstem(AN:58.1-58.4) -4
4.	Cerebrum-External Features, functional areas,	Cerebellum, cerebellar Peduncles (AN:60.1-

	Blood Supply(AN:62.2,62.6) – 2	60.3) - 4
5.	White Mater of Cerebrum, Corpus Callosum , Internal Capsule (AN:62.3) -1	White Matter of Cerebrum, Thalamus, Hypothalamus, Basal Ganglia (AN:62.3) - 6
6.	Ventricles – Lateral, III, IV, CSF (AN:63.1-63.2) – 2	Ventricles(AN:63.1-63.2) - 4
7.	Thalamus, Hypothalamus(AN:62.5) – 1	Study of sections – 4
8.	Basal Ganglia, Limbic System and Olfactory Nerve (AN:62.4) – 1	
9.	Autonomic Nervous System (AN:7.1)-1	
10.	Cranial Nerve – VIII (AN:)-1	

Regional Anatomy- Abdomen & Pelvis

	Osteology-4hrs	Theory-28 Hrs.	Practicals-62 Hrs
1.	Lumbar Vertebrae, Sacrum (AN:53.4) -2	Anterior Abdominal Wall (AN:44.6) -1	Anterior Abdominal Wall (AN:44.1-44.6) -6
2.	Bony Pelvis (AN:53.2,53.3)- 2	Rectus Sheath and Its Contents (AN:44.3) -1	Inguinal Canal (AN:44.5,14.4) -2
3.		Inguinal Canal (AN:44.5,14.4) -1	Male External Genitalia (AN:46.1,46.2)- 2
4.		Testis and Spermatic Cord Epididymis (AN:46.1,46.2)- 1	Dissection of Loin(AN:45.3)-2
5.		Peritoneum (AN:47.147.2)- 2	Peritoneum (AN:47.147.2)- 4
6.		Stomach (AN:47.5)- 1	Spleen (AN:47.5)- 2
7.		Spleen & Pancreas (AN:47.5)- 1	Stomach (AN:47.5) -2
8.		Liver (AN:47.5)- 1	Coeliac Trunk (AN:47.9) -2
9.		Celiac Trunk (AN:47.9) -1	Small Intestine, Mesentery and Vessels (AN:47.5,47.9) -2
10.		Duodenum(AN:47.5) -1	Large Intestine (AN:47.5)- 2
11.		Extra hepatic biliary apparatus (AN:47.5)- 1	Duodenum (AN:47.5) -2
12.		Caecum and Appendix (AN:47.5)- 1	Pancreas and Portal Vein(AN:47.5,47.10)- 2

13.		Abdominal Aorta (AN:47.9)- 1	Liver(AN:47.5)- 2
14.		Kidney (AN:47.5)- 1	Kidney(AN:47.5)- 2
15.		Ureters (AN:47.5)- 1	Suprarenal Glands (AN:47.5) -2
16.		Suprarenal Glands (AN:47.5)- 1	Diaphragm(AN:47.13)- 2
17.		IVC, Portal Vein &Portacaval Anastomosis (AN:47.8,47.10) -1	Posterior Abdominal Wall (AN:45.1,45.3) -4
18.		Perineal Pouches, Pelvic Diaphragm, Perineal Body (AN:48.1,49.2)- 2	Urinary Bladder (AN:48.2)- 2
19.		Urinary Bladder(AN:48.2)- 1	Uterus ,Ovaries and Uterine Tube (AN:48.2) -2
20.		Seminal Vesicles and Prostate (AN:48.2)- 1	Rectum and Anal Canal(AN:48.2)- 2
21.		Uterus and Vagina (AN:48.2)- 1	Vessels of Pelvis(AN:48.3)-4
22.		Ovaries and Uterine Tubes (AN:48.2)- 1	Pelvic Diaphragm (AN:48.1, 49.1-49)-2
23.		Rectum, Ischiorectal Fossa (AN:49.4) and Anal Canal(AN:48.2)- 2	Perineum (AN:49.1,49.3) -4
24.		Internal Iliac Artery (AN:48.3)- 1	Radiological Anatomy (AN: 54.1-54.3)-2
25.		Lumbar and Sacral Plexus (AN:45.2,48.4)- 1	Surface Marking (AN:55.1,55.2)-2

List of Histology Slides

General Histology

1. Epithelial Tissue
2. Connective Tissue
3. Bone, Cartilage
4. Muscular Tissue
5. Nervous Tissue
6. Blood Vessels
7. Lymphoid Tissue

Systemic Histology

1. Trachea
2. Lung
3. Serous Salivary Gland
4. Mucous Salivary Gland
5. Mixed Salivary Gland
6. Tongue
7. Tooth
8. Esophagus
9. Stomach – Fundus
10. Stomach – Pylorus
11. Duodenum
12. Jejunum
13. Ileum
14. Colon– Large Intestine
15. Vermiform Appendix
16. Liver
17. Pancreas
18. Gall Bladder
19. Kidney
20. Ureter
22. Ovary
23. Fallopian Tube
24. Uterus
25. Vaginal Wall
26. Placenta
27. Umbilical Cord
28. Mammary Gland
29. Testis
30. Epididymis
31. Vas Deferens
32. Prostate
33. Thyroid
34. HypophysisCerebri
35. Supra-Renal Gland
36. Cerebrum
37. Cerebellum
38. Spinal Cord
39. Cornea
40. Retina
41. Skin

Practicals in Genetics
Pedigree charts & photographs

1. Sex-Chromatin (Barr Body)
2. Female Karyotype
3. Down's Syndrome – 21 Trisomy
4. Edward's Syndrome
5. Patau's Syndrome
6. Turner's Syndrome 45 – XO
7. Klinefelter's Syndrome 47 – XXY
8. Super Female 47 – XXX
9. Autosomal Dominant Inheritance
10. Autosomal Recessive Inheritance
11. Linked Recessive Inheritance
12. X- Linked Dominant Inheritance
13. Y- Dominant Inheritance
14. Structural anomalies
15. Structural anomalies

Embryology charts & Models

S.No	Embryology charts
	General Embryology
1	Normal & Abnormal Meiotic Division
2	Spermatogenesis
3	Abnormal sites of implantation
4	Fertilization
5	Cleavage
6	Primitive streak
7	Formation of Germ Layers
8	Development of Notochord & Neural tube
9	Section through umbilical cord
10	Placenta
	GIT
11	Fate of Pharyngeal pouches
12	Development of Tongue
13	Bilateral cleft Lip
14	Lateral Hare Lip with facial cleft
15	Cleft palate with unilateral anterior cleft Lip
16	Isolated cleft palate
17	Hare lip affecting lower lip
18	Oblique facial cleft
19	Intestinal loop before Rotation (I)
20	90^0 anticlockwise Rotation (II)
21	Rotation of Gut (III)
22	Development of liver, pancreas & Gall Bladder
	CVS
23	Development of Inter Atrial Septum
24	Development of Inter Ventricular Septum
25	Aortic Arches
26	Dorsal Aorta and its branches
27	Development of IVC
28	Development of Portal Vein (I)
29	Development of Portal vein (II)
30	Arteries of Upper Limb
31	Arteries of lower limb
32	Foetal circulation
	Urogenital system
33	UG System
34	Development of UG System
35	Development of Gonads
36	Anomalies of uterus
	CNS
37	Dorsal view of embryo @ 22days
38	Neural crest derivatives
39	Development of Hypophysiscerebri

Certification of Skill Acquisition in Anatomy

S.No.	Code No.	Competency	Certification date	Signature of Faculty
1	AN 25.1	Identify, draw and label a slide of trachea		
2	AN 25.2	Identify, draw and label a slide of lung		
3	AN 65.1	Identify epithelium under the microscope & Describe the various types that correlate to its function		

AETCOM
(Attitude, Ethics & Communication Modules)

Competency number	Competencies to be addressed
Module. 1.5	The Cadaver as our first teacher Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissues
Module.1.1	Identify, discuss physician's role and responsibility to society and the community that she/he serves

Marks distribution of Theory, Practical, ECE, SGL, SDL & etc

PAPER – I

Syllabus	Marks allocated	Essay	Short notes	MCQs
Upper limb	25M	15M	5M	5M
Head & neck	30M	15M	10M	5M
Neuroanatomy	18M	-	15M	3M
General anatomy	8M	-	5M	3M
General histology	7M	-	5M	2M
General Embryology	7M	-	5M	2M
AETCOM	5M	-	5M	-
Total	100M	30M	50M	20M

PAPER – II

Syllabus	Marks allocated	Essay –30M	Short notes-50 M	MCQs -20M
Lower limb	30	15 M	10M	5M
Thorax	19	Thorax (or) Abdomen, pelvis & Perineum-15M	15M (if essay is not from this region)	4M
Abdomen, Pelvis & Perineum	30M		25 (if essay is not from this region)	5M
Genetics	7M	-	5M	2M
Systemic Histology	7M	-	5M	2M
Systemic Embryology	7M	-	5M	2M
Total	100M	30M	50M	20M

General points to consider

- No Romans should be used in numbering
- Theory paper question numbers should be from 1-12 irrespective of essays & shorts
- MCQs numbering from 1-20 for questions and options as capitals - “A”,”B”, “C”. “D”
- Answers should not include “none of the above & all of the above”
- In each paper one short notes can be given as clinical based question

Marks distribution of Practical examination

PART-I – 40M

Histology including genetics				
Spotters- **15M**	**Discussion slide-1** **(General Histology)** **10M**	**Discussion slide -2** **(Systemic Histology)** **10M**	**Genetic chart** **5M**	**Total** **40M**

PART-2 – 40M

Gross Anatomy				
Discussion -1 **(above diaphragm)** **15M**	**Discussion – 2** **(below diaphragm)** **15M**	**Surface marking** **5M**	**OSPE** **5M**	**Total** **(40M)**

Viva-voce - 20M

Soft Parts 5M	Osteology 5M	Radiology 5M	Embryology 5M	Total 20M

EXAMINATION

Assessment method for Theory examination

Paper -1 - 100 Marks (3hrs duration)

Paper -2 - 100Marks (3hrs duration)

Question paper pattern

Question	**Marks**	**Total Marks**
2 Structured essay questions	2X15	30
10 Short answer questions	10x5	50
20 Multiple choice questions	20x1	20

Assessment method for Practical examination

Reg. No.	**Practical**												
	Part – 1				**Part- 2**				**Viva Voce**				**Grand Total**
	Gross Anatomy (40M)				**Histology Including Genetics(40M)**				**20 M**				
	Discussion – 1 (above diaphragm)	Discussion – 2 (bellow diaphragm)	Surface Marking	OSPE(Objective Structured Practical Examination)	Spotters	Stained Slides for discussion		Genetic charts	Soft parts	Osteology	Radiology	Embryology	100
						General 1	Systemic 1						
	15	15	5	5	15	10	10	5	5	5	5	5	100

Recommended Books

General Anatomy: Any one of the following books

1. Hand book of general anatomy - BD Chaurasia
2. General Anatomy - Vishram Singh
3. Text book of General anatomy - ShobhaRawlani and ShivlalRawlani

Embryology – Any one of the following books

1. Text book of Clinical Embryology – Vishram Singh
2. Textbook of Human Embryology - YogeshSontakke.

Human Histology - Any one of the following books

1. Textbook of Histology – Inderbir Singh – 7th Edition
2. Textbook of Histology – G.P.PAL
3. Textbook of Human Histology – YogeshSontakke

Genetics - Any One of the following Books

1. Human Genetics –S.D Gangane
2. Principles of Clinical Genetics – Yogesh Ashok Sontakke
3. Essentials of Medical Genetics – A.K. Datta

Dissection Manuals

1. Manual of practical Anatomy - Cunningham's (Dissection Manuals I, II & III volumes)
2. Grant's dissector – Alan J. Detton
3. Gross Anatomy - Any one of the following books
4. Text book of anatomy - Vishram Singh – 3 Volumes
5. Human anatomy - B.D.Chaurasia – 4 Volumes
6. Essentials of Human Anatomy - A.K.Datta (3volumes)

Neuro Anatomy - Any one of the following books

1. Clinical Neuro Anatomy - Vishram Singh
2. Human Neuro Anatomy - I.B.Singh

Atlas of Anatomy

1. Theime's Atlas of Anatomy
2. Netter's Atlas of Human Anatomy
3. Netter's Essential Histology
4. Difiore's Atlas of Histology With Functional Correlation, 12th Edition

Dictionary:

1. Pocket Book of Dorland Dictionary – Elsevier

Reference Books

General Anatomy:

1. Principles of General Anatomy – A.K. Datta

Embryology:

1. Essentials of Human Embryology - A.K. Datta
2. Langman's Medical Embryology
3. Clinical Embryology - Keith L. Moore

Human Histology:

1. Wheater's Functional Histology – A Text and Colour Atlas – 5th Edition
2. Junqueira's – Basic Histology Text and Atlas

Genetics:

1. Medical Genetics –G.P.PAL
2. Emery's Elements of Medical Genetics – 14th Edition

Dissection Manuals:

1. Dissection Manual With CD – Mercy Navis

Gross Anatomy:

1. Gray's Anatomy- The Anatomical basis of clinical practice
2 .Clinically Oriented Anatomy – Keith L. Moore
3. Lee McGregors – Synopsis of surgical Anatomy

Neuro Anatomy:

1. Neuro Anatomy - A.K.Datta

2. Clinical Neuroanatomy – Richard S.Snell

1st MBBS- ANATOMY

Blue Print for theory Examination

Syllabus	Marks allocated	Essay	Short notes	MCQs
Upper limb	25M	15M	5M	5M
Head & neck	30M	15M	10M	5M
Neuroanatomy	18M	-	15M	3M
General anatomy	8M	-	5M	3M
General histology	7M	-	5M	2M
General Embryology	7M	-	5M	2M
AETCOM	5M	-	5M	-
Total	100M	30M	50M	20M

PAPER – I

PAPER – II

Syllabus	Marks allocated	Essay 30M	Short notes 50 M	MCQs 20M
Lower limb	30	15 M	10M	5M
Thorax	19	Thorax (or) Abdomen, pelvis & Perineum- 15M	15M (if essay is not from this region)	4M
Abdomen, Pelvis & Perineum	30M		25 (if essay is not from this region)	5M
Genetics	7M	-	5M	2M
Systemic Histology	7M	-	5M	2M
Systemic Embryology	7M	-	5M	2M
Total	**100M**	**30M**	**50M**	**20M**

* General points to consider

- No Romans should be used in numbering
- Theory paper question numbers should be from 1-12 irrespective of essays & shorts
- MCQs numbering from 1-20 for questions and options as capitals - “A”,”B”, “C”. “D”
- Answers should not include “none of the above & all of the above”
- In each paper one short notes can be given as clinical based question

1st MBBS DEGREE EXAMINATION

Anatomy Paper – I

Syllabus: Upper limb, Head and Neck, Neuro Anatomy, Concerned Embryology, Histology, General Anatomy& General Histology

Time: 3 hours **Max.Marks:100**

I. Write Essay on **2X15=30m**

1. Describe the Median nerve under the following headings 1+3+7+4

(i) Root value (ii) Gross course

(iii) Branches & its distribution (iv) Applied aspect

2. Describe the Tongue under the following headings 1+2+5+5+2

(i) Presenting parts (ii) Muscles (iii) Nerve supply

(iv) Lymphatic drainage (v) Applied aspect

II. Write Short notes on **10X5=50m**

3. Rhomboid fossa
4. Cleft lip (Harelip)
5. Histological features of Thyroid gland
6. Otic ganglion
7. How to respect cadaver
8. Epiphyses
9. Pyriform fossa
10. Structure of passing through foramen magnum
11. Cephalic vein
12. Ansa cervicalis

III. Multiple Choice Questions **20X1=20m**

. 1. Which one of the following structure is not derived from somites ( )
(A) Vertebral column
(B) Ribs
(C) Epidermis
(D) Axial musculature

2. One of the following structure is a content of suboccipital triangle ( )
(A) First part of vertebral artery
(B) Greater occipital nerve
(C) Dorsal ramus of C_1
(D) Occipital artery

3. Rotator cuff is/are formed by all except ( )
(A) Supraspinatus
(B) Infraspinatus
(C) Teres major
(D) Subscapularis

4. All pierce the clavipectoral fascia except ( )
(A) Lateral pectoral nerve
(B) Lateral thoracic artery
(C) Cephalic vein
(D) Thoraco acromial artery

5. Artery in anatomical snuff box is ( )
(A) Radial artery
(B) Brachial artery
(C) Ulnar artery
(D) Interosseous artery

6. All the following muscles are innervated by the facial nerve except ( )
(A) Occipito-frontalis
(B)Anterior belly of digastric
(C)Risorius
(D) Procerus

7. Cranial part of Accessory nerve supplies all palatal muscles except ( )
(A) Palatoglossus
(B) Palatopharyngeus
(C) Tensor velipalatini
(D) Levator palate

8. The primitives streak appears at the beginning of ___ week ( )
(A) First
(B) Second
(C) Third
(D) Fourth

9. All of the following muscles have dual nerve supply, except ( )
(A) Brachialis
(B) Pectineus
(C) Flexor digitorumsuperficialis
(D) Flexor diagitorumprofundus

10. Corpus callosum is characterized by except ( )
(A) Commissural fibers
(B) Projection fibers
(C) Presence of Genu
(D) Superficially covered by indusiumgriseum

11. Which of the following is not a fibrous joint ( )
(A) Schindylesis

(B) Symphysis
(C) Gomphosis
(D) Syndesmosis

12. Which functional area is located in inferior frontal gyrus ( )
(A) Auditory area
(B) Motor speech area
(C) Visual area
(D) Wermicke's speech area

13. One of the following bones develop in a tendon ( )
(A) Scaphoid
(B) Cuboid
(C) Pisiform
(D) Triquetral

14. Carpo metacarpal joint of thumb is a ( )
(A) Pivot joint
(B) Saddle joint
(C) Ellipsoid joint
(D) Hinge joint

15. Cart wheel appearance of Nucleus is seen in ( )
(A) Macrophage
(B) Plasma cell
(C) Monocyte
(D) Lymphocyte

16. Which of the following foramen of skull transmits accessory meningeal artery? ( )
(A) Spinosum
(B) Lacerum
(C) Rotundum
(D) Ovale

17. Which one of the following is true about clavicle ( )
(A) It is the only long bone placed vertically
(B) Ossifies in membrane
(C) Well developed medullary cavity
(D) Pierced by middle suprascapular nerve

18. Pars flaccida of tympanic membrane is crossed by ( )
(A) Auriculotemporal nerve
(B) Chorda tympani nerve
(C) Auricular branch of vagus nerve
(D) Lingunal nerve

19. Which of the following is found in Volkmann'scanal ( )
(A) Blood vessel
(B) Process of osteocytes
(C) Sharpey'sfiber
(D) Lymphatic vessel

20. All of the following structures related to the floor of the fourth ventricle, except ( )
(A) Area postrema
(B) Facial coliculus
(C) Mammillary body
(D) Locus ceruleus

- Only one correct answer to be there
- All of the above should not be incorporated
- None of the above should not be incorporated

1st MBBS DEGREE EXAMINATION

ANATOMY PAPER-II

Syllabus: Lower limb, Thorax, Abdomen, Pelvis, Perineum, Concerned Embryology, Histology, Genetics & General Embryology

Time: 3 hours **Max.Marks:100**

I. Write Essay on **2X15=30m**

1. Describe the knee joint under the following headings 1+2+5+5+2

   (i) Type (ii) Bony components (iii) Ligaments

   (iv) Movements & Muscles responsible (v) Applied aspect

2. Describe the Uterus under the following headings 3+2+5+3+2

   (i) Situation and position (ii) Parts and relations (iii) Supports

   (iv) Blood supply (v) Applied aspect

II. Write Short notes on **10X5=50m**

3. Interior of right atrium
4. Intraembryonic mesoderm
5. Microscopic structure of pancreas
6. Down's syndrome
7. First rib
8. Major openings of Thoraco Abdominal diaphragm
9. Thoracic duct
10. Gluteus maximus
11. Portacaval anastomosis
12. Femoral nerve

III. Multiple Choice Questions **20X1=20m**

1. Parafollicular cells of thyroid gland develop from ( )
   (A) Second branchial pouch
   (B) Second branchial cleft
   (C) Ultimobranchial body
   (D) Third branchial pouch
2. Which of the following ligaments of the knee joint connects the menisci to the tibia ( )
   (A) Transverse ligament
   (B) Arcuate ligament
   (C) Oblique ligament
   (D) Coronary ligament
3. Regarding barr body one of the following statements is not true ( )
   (A) One barr body seen in normal females
   (B) Seen in males
   (C) No barr body in Turner's syndrome
   (D) 2 barr bodies seen in super female
4. All of the following are supplied by superior gluteal nerve except ( )
   A) Gluteus medius
   (B) Gluteus minimus
   (C) Gluteus maximus
   (D) Tensor fascia lata
5. Trigone of the bladder is derived from ( )
   (A) Paramesonephric duct
   (B) Mesonephric duct
   (C) Urogenital folds
   (D) Mullerian tubercle
6. Saphenous opening is situated ( )
   (A) Above and medial to the pubic tubercle
   (B) Below and medial to pubic tubercle
   (C) Below and lateral to pubic tubercle
   (D) Above the inguinal ligament
7. All of the following form the boundaries of epiploic foramen, except ( )
   (A) Inferior vena cava
   (B) Free margin of greater omentum
   (C) Caudate process of liver
   (D) First part of duodenum
8. All of the following are the features of Turner's syndrome except ( )
   (A) Mental retardation
   (B) Agenesis of ovaries
   (C) XXY chromosome constitution
   (D) Webbed neck
9. Inversion and eversion takes place at ( )
   (A) Ankle joint
   (B) Subtalar joint
   (C) Talonavicular joint
   (D) Calcaneo cuboid joint
10. Which one of the following nerves is related to ovarian fossa ( )
    (A) Femoral nerve
    (B) Pudendal nerve
    (C) Superior gluteal nerve
    (D) Obturator nerve
11. Left gonadal vein drains into ( )
    (A) Left internal iliac vein
    (B) Left renal vein
    (C) Inferior vena cava
    (D) Left external iliac vein

12. The lower border of costo diaphragmatic recess in mid axillary line is at the level of ( )
    (A) 8^{th} rib
    (B) 10^{th} rib
    (C) 12^{th} rib
    (D) 6^{th} rib
13. Bronchiole is characterized by all the following except ( )
    (A) Continuous layer of smooth muscle is present
    (B) Absence of hyaline cartilage in its wall
    (C) Presence of hyaline cartilage in its wall
    (D) Glands are absent
14. Gastric glands are lined by following types of cells except ( )
    (A) Oxyntic cells
    (B) Paneth cells
    (C) Chief cells
    (D) Mucous neck cells
15. One of the following structures is not a content of spermatic cord ( )
    (A) Pampniform plexus of veins
    (B) Vas deference
    (C) Inferior epigastic artery
    (D) Testicular artery
16. Structure arching over the root of Right lung is ( )
    (A) Superior venacava
    (B) Azygos vein
    (C) Recurrent laryngeal nerve
    (D) Arch of aorta
17. Supra pleural membrane is a modified ( )
    (A) Scalenusmedius
    (B) Scalenusminimus
    (C) Scalenus anterior
    (D) Levator scapulae
18. The following are the posterior relations of both kidneys except ( )
    (A) Diaphragm
    (B) Transverse abdominis
    (C) Psoas major
    (D) 10^{th} rib
19. The rectus sheath contains the following structures except ( )
    (A) Intercostal nerves
    (B) Superior epigastric artery
    (C) Ilio-inguinal nerve
    (D) Pyramidalis
20. Anterior interventricular artery is a branch of ( )
    (A) Right coronary artery
    (B) Left coronary artery
    (C) Ascending aorta
    (D) Left Conus artery

- **Only one correct answer to be there**
- **All of the above should not be incorporated**
- **None of the above should not be incorporate**

Name of the Institute : SVIMS-SPMCW											
Department of Anatomy											
Faculty : MBBS		**Year/Phase-I**									**Date:**
		Formative Assessment			**Continuous Internal Assessment Theory)**						
Roll No.	**Name of Student**	**1st PCT Theory**	**2nd PCT Theory**	**Prelims Theory (Paper I & II)**	**Home Assignment**	**Continuous Class test (LMS)**	**Seminar**	**Museum study**	**Library assignments**	**Attendance Theory**	**Total**
							Self-directed learning				
		100	**100**	**200**	**15**	**30**	**15**	**15**	**15**	**10**	**500**

Professor & Head

Name of the Institute : SVIMS-SPMCW												
Department of Anatomy												
Faculty : MBBS			Year/Phase-I							Date:		
			Formative Assessment			Continuous Internal Assessment (Practical)				Journal (Record book/portfolio)	Attendance (Practical)	Total
S.No.	Roll No.	Name of Student	1st PCT Practical/First ward leaving examination	2nd PCT Practical/second ward leaving examination	Prelims practical	Log book (150)						
						Certifiable skill base competencies (Through OSPE/OSCE/Sports exercise/Other)	AETCOM competencies	SVL Lab activity	Research			
			100	100	100	60	30	40	20	40	10	500

Professor & Head

Department of Physiology

Goal:

The broad goal of teaching the undergraduate students in Physiology is to provide the student a comprehensive knowledge of the normal functions of the organ systems of the body and to facilitate an understanding of the physiological basis of health and disease.

1.Curriculum

a. Competencies: The undergraduates must demonstrate:

Understanding of the normal functioning of the organs and organ systems of the body,

Comprehension of the normal structure and organization of the organs and systems on basis of the functions,

Understanding of age-related physiological changes in the organ functions that reflect normal growth and development,

Understand the physiological basis of diseases.

b. Broad subject specific objectives

Knowledge

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

Describe the normal functions of all the systems, the regulatory mechanisms and interactions of the various systems for well-coordinated total body functions.

Understanding the relative contribution of each organ system in the maintenance of the milieu interior (homeostasis)

Explain the physiological aspects of the normal growth and development.
Analyze the physiological responses and adaptation to environmental stress.
Comprehend the physiological principles underlying pathogenesis and treatment of disease.

Correlate knowledge of physiology of human reproductive system in relation to National Family welfare program.

c. Skills:

At the end of the course the student shall be able to:

Conduct experiments designed for study of physiological phenomenon.

Interpret experimental /investigative data.

Distinguish between normal and abnormal data derived as a result of clinical examination and tests, which he has performed and observed in the laboratory.

Recognize and get familiar with newer computerized and advanced instruments like medspiror, semen quality analyzer, EMG and TMT

d. Integration:

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

2.Course Content teaching hours

a. Teaching hours (Teaching learning methods)

Curricular component	Time allotted in hours
Lectures	130
Small group teaching / tutorials / integrated learning /practical	300
Self-directed learning	10
Early clinical exposure (basic science correlation and clinical skills)	9
Total	**449**
AETCOM module 1.2 and 1.4	**9**
Formative Assessment and term examinations	**20**

b. Theory Syllabus

- General Physiology
- Hematology
- Nerve-Muscle Physiology
- Gastro-Intestinal Physiology
- Cardiovascular Physiology

- Respiratory Physiology
- Renal Physiology
- Endocrine Physiology
- Reproductive Physiology
- Neurophysiology (Central Nervous System and Special Senses)
- Integrated Physiology

Physiology Syllabus

THEORY

General Physiology (PY 1.1-1.9) (8 hrs)

Structure and functions of a mammalian cell**;** Homeostasis, Intercellular communication**;** Apoptosis; Transport mechanisms across cell membranes; Fluid compartments of the body; pH & Buffer systems in the body; Evaluation of functions of the cells and products in clinical care and research.

Hematology: (PY 2.1 - 2.13) (16 hrs)

Components of blood: formation, regulation and functions; plasma proteins – origin, types, variations and functions; Hemoglobin- synthesis, variants, functions and its breakdown & Jaundice; Blood indices; Anemia and its classification; Hemostasis: mechanism, regulation & disorders Anticoagulants; Blood groups, blood banking and transfusion; Immunity: types, mechanism & regulation; ESR; Lymph-composition, circulation and functions

Nerve & Muscle Physiology: (PY 3.1 - 3.18) (10hrs)

Neuron and neuroglia: structures, types, functions; Resting membrane potential; Action potential in nerve, skeletal & smooth muscle; Nerve fibres: classification, functions & properties; nerve injuries, degeneration and regeneration in peripheral nerve; Neuromuscular junction: structure, transmission of impulses, neuro-muscular blocking agents, Myasthenia gravis; Muscle fibres: structure, types & functions; Muscle contraction; molecular basis (skeletal, smooth), Isotonic Vs. Isometric, Energy sources and metabolism, gradation of muscle activity; muscle dystrophy, Myopathies; Strength-duration curve

Gastrointestinal Physiology: (PY 4.1 - 4.10) (10hrs)

Functional anatomy and broad functions of digestive system, enteric nervous system; GI Secretions- composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion; GI movements- types, regulation, functions, reflexes; role of dietary fibres; Digestion and absorption of nutrients; GI hormones- source, regulation, functions; Gut-brain axis; structure and functions of liver and gall bladder; gastric function tests, pancreatic exocrine function tests & liver function tests, Pathophysiology - Achalasia cardia, peptic ulcer, gastro oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease.

Cardiovascular Physiology: (PY 5.1 - 5.16) (25hrs)

Functional anatomy of heart; Pacemaker tissue and conducting system-generation, conduction of cardiac impulse; Properties of cardiac muscle; Cardiac cycle; ECG- recording, normal ECG, uses, cardiac axis, Abnormal ECG in common arrhythmias, changes with hypertrophy & MI; Haemodynamics; Heart rate- factors affecting, regulation; Cardiac output- factors, regulation, measurement; Blood pressure- components, determinants, factors, regulation and applied aspect, Regional circulation- autoregulation, microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, fetal, pulmonary and splanchnic circulation; Pathophysiology- shock, syncope, heart failure & coronary artery disease

Respiratory Physiology: (PY 6.1-6.10) (12hrs)

Functional anatomy of respiratory tract, dead space; Mechanics of respiration; Pressure volume changes during ventilation; Lung volume and capacities; Alveolar surface tension; Compliance; Airway resistance; alveolar ventilation, V/P ratio; Diffusion capacity of lungs; Transport of respiratory gases- Oxygen and Carbon dioxide; Neural and chemical regulation of respiration; Physiology of high altitude and deep sea diving; Principles of artificial respiration, oxygen therapy; Patho-physiology of dyspnoea, hypoxia, cyanosis, asphyxia, drowning, periodic breathing; Lung function tests & its clinical significance

Renal Physiology: (PY 7.1 - 7.9) (10hrs)

Structure and functions of kidney & juxta glomerular apparatus, role of renin-angiotensin system ; Renal blood flow; Mechanism of urine formation, concentration and diluting mechanism;

Concept and significance of 'clearance' tests; Renal regulation of fluid and electrolytes & acid-base balance; Structure and innervation of urinary bladder, physiology of micturition, cystometry, and its abnormalities; Artificial kidney(dialysis) and renal transplantation; Renal Function Tests

Endocrine Physiology: (PY 8.1 - 8.6) (16 hrs)

Mechanism of action of steroid, protein and amine hormones; 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; Physiology of bone and calcium metabolism; Physiology of growth; Physiology of Thymus & Pineal Gland; Hormone function tests ; Obesity & metabolic syndrome; Stress response

Reproductive Physiology: (PY 9.1 - 9.12) (10hrs)

Sex determination; sex differentiation and their abnormalities; Puberty: onset, progression, stages; early and delayed puberty; Male reproductive system: functions of testis, spermatogenesis and its regulation, Cryptorchidism ; Female reproductive system: functions of ovary and its control, menstrual cycle: Hormonal, uterine and ovarian changes; Tests for ovulation; Physiological effects of sex hormones; Contraceptive methods for male and female; Effects of removal of gonads on physiological functions; Physiology of pregnancy, fetoplacental unit, pregnancy tests, parturition & lactation; Semen analysis; Causes and principles of management of infertility; Hormonal changes and their effects during

perimenopause and menopause; Psychological and psychiatric disturbances associated with reproductive physiology.

Neurophysiology: (PY 10.1 - 10.20) (37 hrs)

Organization of nervous system; Sensory system: types, functions and properties of synapse, receptors, reflex; Somatic sensations & sensory tracts; Physiology of pain; Motor system: organization, motor tracts, mechanism of maintenance of tone, control of voluntary movements ; Posture and equilibrium & vestibular apparatus; Reticular activating system, Autonomic nervous system ; Spinal cord: functional organization and lesions ; Formation, circulation and function of CSF; Blood brain barrier; Neurotransmitters.

Organization, connections and functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities; Higher mental functions ; Physiology of sleep, memory, learning and speech and their disorders; EEG.

Special senses- Smell and taste sensation and their abnormalities; Functional anatomy of ear and auditory pathways & physiology of hearing, Deafness, hearing tests; Functional anatomy of eye, Image formation, Visual pathway and its lesions, Physiology of vision including acuity of vision, colour vision, field of vision, refractive errors, physiology of pupil; light reflex, accommodation reflex, dark and light adaptation; Auditory & visual evoked potentials

Integrated Physiology: (PY 11.1 - 11.14) (6 hrs)

Temperature regulation: mechanism, adaptation to altered temperature (heat and cold environment), mechanism of fever, cold injuries and heat stroke; Exercise- cardio-respiratory and metabolic adjustments during exercise (isotonic and isometric), exercise in heat and cold, physical training effects; Physiological consequences of sedentary lifestyle; Brain death; Physiology of Infancy*; Physiology of aging-free radicals and antioxidants*; Physiology of meditation*.

(* ‘Non-core’ competencies as per “Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India”).

c. Practical Syllabus

The following list of practical is minimum and essential. Additional exercises can be included as and when feasible and required. All the practicals have been categorized as **'Procedures to be performed’** and **'Demonstrations'.** The procedures are to be performed by the students during practical classes to acquire skills. These would be included in the practical during University examination. Those categorized as ‘Demonstrations’ are to be shown to students during practical

classes. Questions based on these would be given in the form of data, charts, graphs, problems and case histories for interpretation by students during university examination.

I.<u>Procedures to be performed by the students:</u>

a.**Haematology:**

1. RBC count
2. WBC Count
3. Differential Leucocyte Count
4. Estimation of haemoglobin
5. Blood grouping
6. Bleeding time
7. Clotting time
8. Calculate RBC indices - MCV, MCH, MCHC.

b. **Procedures to be performed on human subjects:**

1. Mosso's ergography.
2. Recording of Blood Pressure, pulse rate at rest and effect of posture.
3. Effect of mild and moderate exercise on blood pressure, pulse rate and respiratory rate using Harvard step test.
4. Record and interpret Lead II ECG. Given a normal ECG, determine cardiac axis.
5. Spirometry – Lung volumes and capacities, MVV, Timed vital capacity.
6. Peak Expiratory Flow Rate
7. Demonstrate Basic Life Support in a simulated environment
8. Visual field by Perimetry

c. **Clinical Examination:**

1. Components of history taking and general physical examination
2. Examination of radial pulse
3. Examination of Cardiovascular system
4. Examination of Respiratory system
5. Examination of abdomen
6. Examination of Higher mental functions
7. Examination of Sensory system
8. Examination of Motor system including reflexes.
9. Examination of Cranial Nerves

II. <u>Demonstrations:</u>

I.Haematology:

1. Erythrocyte sedimentation rate
2. Haematocrit
3. Reticulocyte count
4. Platelet count
5. Osmotic fragility

2. Record Arterial pulse tracing using finger plethysmography*
3. Stethography
4. Tests of cardiovascular autonomic functions*

(* 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

III. Interpretation- charts: clinical case histories, graphs, charts, problems

(Suggested topics for preparation of these are given under **ANNEXURE I**.

Chart also includes - Interpret growth chart*, Interpret anthropometric assessment of infants*: (*these two charts are 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

IV. Computer assisted learning:

(i) **Amphibian nerve - muscle experiments and interpretation of graphs**

- Simple muscle twitch
- Effect of various strengths of stimuli on Simple muscle twitch
- Effect of changes in temperature on Simple muscle twitch
- Effect of two successive stimuli on muscle contraction
- Effect of multiple successive stimuli (treppe, clonus, tetanus)
- Study of fatigue in skeletal muscle
- Velocity of nerve conduction
- Effect of load on muscle
- Measurement of isometric contractions using nerve muscle preparation

(ii) **Amphibian cardiac experiments and interpretation of graphs**

- Normal cardiogram
- Effect of temperature on frog heart
- Effect of Stannius ligatures
- Properties of cardiac muscle – all or none law, staircase effect, refractory period in a beating heart (extrasystole and compensatory pause), refractory period in a quiescent heart
- Effect of vagus on frog's heart
- Action of drugs on vagus (nicotine and atropine)
- Perfusion of isolated heart and effect of ions (NaCl, KCl, CaCl2)
- Perfusion of isolated heart and effect of drugs (adrenaline, acetyl choline, atropine followed by Ach)

3.SKILL CERTIFICATION:

The list of certifiable skills is given below. The general instructions, blank template, samples of certification checklist suggested for skill certification are provided as **ANNEXURE - IIa, IIb, IIc, IId.**

List and number of sessions for skill certification as prescribed by MCI:

	Topics	Number of skills required To be certified as per MCI
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	3
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	1
PY 10.11	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	5
PY 10.20	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	4

4.SUGGESTED AREAS FOR INTEGRATION:

As per the "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India"

EARLY CLINICAL EXPOSURE**:**

- **Clinical visits: 3 hours** (Suggested format for assessing participation in ECE sessions is provided as **ANNEXURE III which could be a part of the practical record book**)

  Suggested hospital visits: (can include more than the below suggestions)

  Anemia, Diabetes, Fever, Stroke, Jaundice, Visit to blood bank, Computerized lung function tests, acid peptic disease, endoscopy procedure, dialysis unit, hemiplegia, etc.
- **Basic science correlations: 6 hours**

  Discussion based on case vignettes, graphs, clinical videos, patient in classroom setting, etc linked to various systems in physiology.

SELF-DIRECTED LEARNING:

10 hours of dedicated time for self-directed learning is provided for Physiology.

5.AETCOM COMPETENCES:

Competency Number	Competency
Module 1.2, Module 1.3	Demonstrate empathy in patient encounters
Module 1.4	Demonstrate ability to communicate to patients in a patient, respectful, non- threatening, non- judgmental and empathetic manner

*** https://www.mciindia.org/CMS/wp-content/uploads/2019/01/AETCOM_book.pdf**

Suggested format for reflective writing for the above AETCOM modules is given in ANNEXURE IV. This could be a part of the practical record book.

LOG BOOK:

Suggested Template of logbook is attached as annexure. The minimum elements that needs to be included are mentioned in the template provided **for log book.**

6.a.Marks Distribution: Theory

Name of the Institute

Department of Anatomy/Physiology/Biochemistry

Faculty: MBBS		Year/Phase -1								Date:dd/mm/yyyy	
Roll No	Name of Student	1st PCT Theory/ 1st Internal	2nd PCT Theory/ 2nd Internal	Prelims Theory /Prefinal (Paper I & II)	Home Assignment	Continuous Class Test(LMS)/ Formative Assessment	Seminar	Museum study	Library assignment	Attendance Theory	Total
		100	100	200	15	30	15	15	15	10	500

Professor & Head
Department of ----------
Name of the Institute

6.b.Marks Distribution: Practical

Name of the Institute

Department of Anatomy/Physiology/Biochemistry

Faculty: MBBS		Year/Phase -1										
S. No	Roll No	Name of Student	1st PCT Practical//1st Internal First ward leaving Examination	2nd PCT Practical/ / 2nd Internal Second ward leaving Examination	Prelims Practical /Prefinal	Log Book (150)				Journal (Record book/ Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/ Sports/ Exercise/ Other	AETCOM Competencies	SVL Lab activity (CAL/ Skills)	Research			
			100	100	100	60	30	40	20	40	10	500

Professor & Head
Department of ----------
Name of the Institute

7. Examination

a. Assessment methods for theory

There shall be two theory papers of 100 marks each and duration of each paper will be of 3 hours.

Type of questions	Number of questions	Marks for each question	Total Marks
Long essay	2	15	30
Short essay question with one case vignette	10	5	50
MCQ's	20	1	20
Total Marks			100

7.b. Assessment methods for Practical

S. No	Haematology	Marks(40M)
1	Major Experiment	20m
2	Minor Experiment	10m
3	Problems	10m

S. No	Clinical	Marks(40M)
1	Major Experiment	20m
2	Minor Experiment	10m
3	Clinically oriented question(OSPE)	10m

S. No	Viva/orals	Marks(20M)
1	General Physiology, Blood, GIT, Excretory , Skin & Body Temperature	5m
2	CVS, Respiratory System	5m
3	Endocrine Reproduction	5m
4	Nerve Muscle, Special Senses, CNS	5m

8. RECOMMENDED TEXT BOOKS :

1) Text book of Medical Physiology Author's: Venkatesh & H.H. Sudhakar
2) Text book of Physiology Author: AK Jain
3) Text book of Medical Physiology Author: G K pal
4) Text book of Medical Physiology Author: Indu khurana
5) Text book of Medical Physiology Author: Guyton & Hall
6) Review of Medical Physiology Author: Ganong

PRACTICALS :

1) Manual of Practical Physiology Author:C L Ghai
2) Manual of Practical Physiology Author:G K Pal
3) Manual of Practical Physiology Author:A K Jain

9.Reference Books

1) Understanding Medical Physiology - Author:R L Bijlani
2) Physiological Basis of Medical Practice Author's:Best & Taylor's
3) Principles of Physiology Author's: Berne& Levy
4) Vanders Human Physiology

10.Division of syllabus along with marks for MBBS

Blue print for theory question papers:

Paper I(Max 100 marks)

Systems	**Marks Allocated**
Cell Physiology, Biophysics, Body fluids	05
Haematology	18
Respiratory System	17
Excretory System	15
Cardio Vascular System	25
Digestive System	15
AETCOM	05

Paper II (Max 100 marks)

Systems	Marks Allocated
Endocrine Physiology	20
Reproductive System	15
Muscle and Nerve Physiology	15
Central Nervous System	35
ANS and Special senses	10
Integrated Physiology	05

Note:

- **The systems assigned to the different papers are generally evaluated under those sections. However, a strict division of the subject may not be possible and some overlapping of systems is inevitable. Students should be prepared to answer overlapping systems.**
- **Example of the structured questions and case vignettes are given in the example question papers in ANNEXURE Va, Vb. <u>This is only a model paper</u>. The systems under each section of the paper (long essay, short essay and short answer) and the system from which the case vignette may be prepared can vary. However, marks allotted to the various systems as given in the above tables must be adhered to (with minimal variation of distribution of marks) 1 case vignette to be included as SAQ only in both Paper I & II.**

- **Atleast 1 SAQ in each subject from AETCOM Module in Paper I**

11. a. Model Question Paper

SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
MODEL QUESTION PAPER

Paper: Physiology Paper –I **Time:3 hours** **Maximum marks:100**

Syllabus: Cell Physiology, Biophysics, Body fluids , Blood, CVS, Respiration, Digestion, Excretion, Regulation of body temperature.

I. Answer all of the following: (2X15=30M)

1. What are different types of immunity? Describe acquired immunity in detail. What is autoimmunity. (3+8+4)

2. Discuss the mechanism of oxygen transport in blood. What is oxygen debt? Add a note on artificial respiration. (7+4+4)

II. Write short notes on all of the following 10X5=50M

1.Transport across cell membrane

2.Short term regulation of blood pressure

3.Enteric nervous system

4.Factors affecting glomerular filtration

5.Professional qualities of Physician

6.JGA

7. Periodic breathing

8.Erythroblastosis foetalis

9.Body fluid compartments

10.A 36 year old man who is a known alcoholic presented to emergency department with 24 hour history of severe pain in epigastric region which is radiating to back. Investigations revealed raised plasma amylase levels.

1. What is the most probable diagnosis . 1M
2.List the digestive enzymes secreted by the involved organ. 2M
3.What is the cause for the above condition. 2M

III. 20 MCQ's 20X1=20

11. b. Model Question Paper

SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN
SRI VENKATESWA INSTITUTE OF MEDICAL SCIENCES, TIRUPATI
MODEL QUESTION PAPER

Paper: Physiology Paper –II **Time:3Hours** **Maximum marks:100**

Syllabus: Endocrines, Reproduction, Muscle and Nerve, CNS, ANS and Special senses

I. Answer all of the following: (2X15=30M)

1. List the descending pathways. Trace the pathway of pyramidal tract. Describe the functions of pyramidal tract. List the signs and symptoms of pyramidal tract lesion. (2+5+4+4=15M)
2. Mention the normal serum calcium concentration. Explain the hormonal regulation of calcium . Add a note on tetany (2+9+4=15)

II. Write short notes on all of the following 10X5=50M

1.Organ of Corti

2.PAPEZ Circuit

3.Visual Cycle

4. A 47 yrs old obese man, attends OPD with a complaint of tingling sensation in fingers. He Has observed that he has an increased frequency of micturition and he feels thirsty all the time and he has an urge to eat more and more. He has been on anti hypertensive medication since 4 yrs. Investigations revealed that Hb-12g/dl FBS- 240mg/dlHBA1C-8.5%
    1. What is probable diagnosis.(1M)
    2. Explain physiological basis of polyuria (2M)
    3. List 4 physiological actions of hormone involved (2M)

5.Adrenal Androgens

6.Properties of synapse

7.Contraceptive methods in female

8.Referred pain

9.Spermatogenesis

10.EC coupling in skeletal muscle

III. 20 MCQ's 20X1=20

MODEL QUESTION PAPER MCQ'S PAPER – I

Subject: Physiology Paper –I **Time: 20Min** **Maximum marks:20**

1.Na+-K+ pump is an example of ( )
a)Simple Diffusion b) Primary Active Transport
c) Secondary Active Transport d) Vesicular Transport

2. Gap junctions are formed by protein units ( )
a) Desmosomes b) Focal adhesions c) Connexons d) Selectins

3. Defect in Globin synthesis of Hb causes ( )
a) Hereditary Spherocytosis b) Sickle cell anaemia
c) Thalassemia d) Aplastic anaemia

4. Macrophages (part of Reticulo Endothelial system) of skin are ( )
a) Mesangial cells b) Kupffer cells c) Glial cells d) Histiocytes

5. Primary Immune response is due to ( )
a) IgG b) IgM c) IgA d) IgE

6. Haemophilia is characterized by ( )
a) Prolonged Bleeding time b) Prolonged Clotting time
c) Both Prolonged Bleeding time & Clotting time d) Abnormal platelet count

7. Most common immediate complication of mismatched Blood Transfusion ( )
a) Febrile reaction b) Hyperkalemia
c) Hypocalcemia d) Transmission of diseases

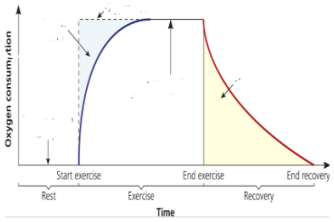
8. Negative Inotropic effect of Heart is due to ( )
a) Glucagon b) Theophylline c) Digitalis d) Barbiturates

9. Diagnose the ECG finding 

( )
a) Hyper Kalemia b) Myocardial Infarction
c) Complete Heart Block d) Atrial Fibrillation

10. Short, low resistance connections between arterioles and venules involved in body temperature regulation ( )
a) Meta arterioles b) Pre-capillary sphincters
c) Thorough fare vessels d) Post capillary venules

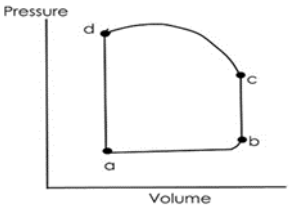
11.



shaded portion indicates ( )

a) Oxygen debt b) Oxygen deficit c) Oxygen command d) Oxygen demand

12



events in 'bc' is ( )

a) Isovolumetric contraction b) isovolumetric relaxation
c) Rapid ejection d)ventricular diastasis

13. FEV_1 estimation is done to detect ( )
a) Compliance of lung b) Elasticity of lungs
c) Vital capacity d) Distinguish between restrictive and obstructive diseases

14. Stimulation of Pneumotaxic center results in ( )
a) Shallow and Rapid breathing b) Deep and more prolonged breathing
c) Normal inspiration d) Prolonged inspiration

15. Biot's breathing is characterized by ( )
a) Waxing and Wanning of Tidal volume b)Occurs at regular intervals
c) Occurs at High Altitude d) Occurs at irregular intervals

16. Low pitched breathing sounds are ( )
a) Bronchial breath sounds b) Vesicular breath sounds
c) cavernous breath sounds d) Amphoric breath sounds

17. Motility of empty GIT is described as ( )
a) Mixing peristaltic waves b) Receptive relaxation
c) Migrating motor complex d) Gastric emptying

18. Auto digestion of pancreas is prevented by ( )
a) Pancreatic lipase b) Pancreatic Amylase c) ChymoTrypsinogen d) Trypsin Inhibitor

19. Release of Bile from Gall bladder into Intestine is called as ( )
a) Cholerectic action b) Digestive function c) Lubricating function d) Cholagogue function

20. Osmotic diuretics act at ( )
a) Proximal tubule b) Early Distal tubule c) Late Distal tubule d) Loop of Henle

MODEL QUESTION PAPER MCQ'S PAPER – II

Subject: Physiology Paper –II **Time:20Min** **Maximum marks:20**

1. Which one of the following acts as second messenger? ( )
   a. Mg^{+2} b. Ca^{+2} c. Mn^{+2} d. Fe^{+2}

2. Acromegaly is due to excess of ( )
   a. Somatomedin b. Insulin
   c. Somatostatin d. Growth hormone

3. Which of the following is not a feature of hyperthyroidism? ( )
   a. Tachycardia b. Systolic hypertension
   c. Weight gain due to hyperphagia d. Heat intolerance

4. Which of the following is the effect of cortisol on metabolism? ( )
   a. Decreased blood glucose b. Increased lipogenesis
   c. Increased proteolysis d. Increased ketone body formation

5. Chronic hyperglycemia in diabetes is better assessed by the estimation of ( )
   a. Fasting blood glucose b. Hb A1c
   c. Post prandial blood glucose d. Fundus examination of the eye

6. Capacitance of sperms takes place in ( )
   a. Seminiferous tubules b. Epididymis
   c. Vasdeferens d. Uterus

7. Main hormone in luteal phase is ( )
   a. Estrogen b. Progesterone
   c. Prolactin d. Oxytocin

8. Which among the following is the most effective contraceptive method? ( )
   a. Spermicide b. Condom
   c. Vaginal rings d. Intrauterine device

9. Which of the following receptor organs is largest in size? ( )
   a. Pacinian corpuscle b. Merkel disk
   c. Ruffini ending d. Krause end-bulb

10. Which of the following sensation is not carried in dorsal column pathway? ( )
    a. Vibration b. Stereognosis
    c. Crude touch d. Proprioception

11. All are true about cerebellum, except ( )
    a. Cerebral cortex has mostly inhibitory effects on deep nuclei
    b. Smoothening and coordination is a major function
    c. Decreased muscle tone in cerebellar disorder
    d. Inhibitory effect from deep nuclei to descending tracts

12. The processing of short term memory to long term memory is done in ( )
    a. Prefrontal cortex b. Hippocampus
    c. Neocortex d. Amygdala

13. LMN paralysis will not manifest as ( )
    a. Muscle hypertonia b. Muscle atrophy
    c. Depressed tendon reflexes d. Babinski negative

14. Delta waves are seen in ( )
    a. Deep sleep b. REM sleep
    c. Awake sleep d. Stage I NREM sleep

15. Color perception is a function of ( )
    a. Visual association area b. Pigment epithelium layer of retina
    c. Cones d. Pretectal nucleus

16. Scala media is filled with ( )
    a. Perilymph b. Endolymph c. Lymph d. CSF

17. Rheobase denotes ( )
    a. Specificity of impulse transmission b. Rate of discharge of neuron
    c. Strength of current d. Duration of current

18. All of the following occurs during skeletal muscle contraction except ( )
    a. Two Z lines come closer b. A band remains unchanged
    c. I band becomes wider d. H zone disappears

19. Preganglionic fibres are longer in ( )
    a. Parasympathetic system
    b. Sympathetic system
    c. Same length in both sympathetic and parasympathetic
    d. Variable in both

20. Which of the following is not a feature of Horner's syndrome ( )
    a. Miosis b. Hypertension
    c. Facial anhidrosis d. Ptosis

12. Theory & Practical Assessment marks as per Table provided by NMC

Phase of Course	Theory	Practicals	Passing criteria
I't MBBS			Mandatory to get 40% marks separately in theory and in practicals; and totally 50% for theory plus practicals.
Anatomy- 2 papers	Paper 1- 100	100	
	Paper 2 -100		
Physiology- 2 papers	Paper 1- 100	100	
	Paper 2 -100		
Biochemistry- 2 papers	Paper 1- 100	100	
	Paper 2 -100		

13.Any other information required for BOS

ANNEXURE – I

List of suggested topics for the preparation of charts, clinical cases, graphs, clinical problems

(Note: many other topics from the syllabus can be considered and charts developed which is left to the discretion of individual institution)

i. General Physiology – Blood volume, feedback mechanisms flowchart

ii. Nerve muscle physiology – Myesthenia gravis, picture chart of neuromuscular junction

iii. Hematology – clinical cases of anemia, blood indices, peripheral smear, jaundice (prehepatic, post hepatic and hepatocellular),

iv. Cardiovascular system – problems on cardiac output, cardiac index, ejection fraction, clinical cases on hypertension, shock, heart failure; interpretation of ECG and calculation of heart rate from ECG,

v. Respiratory system – spirogram with calculation of lung volumes and capacities, dyspnoeic index, respiratory reserve, charts with FEV1/FVC in obstructive and restrictive conditions

vi. Renal system – Clearance tests, cystometrogram

vii. Gastrointestinal system- clinical cases on peptic ulcer, OGTT, Gastrooesophageal reflux disease

viii. Endocrine system – clinical case histories / pictorial charts for various endocrine disorders

ix. Reproductive system - spinnbarkeit pattern pictorial chart, Fern pattern chart, clinical case history of infertility, hormonal changes during menstrual cycle graph,

x. Central nervous system - pictorial chart of properties of synapses, reflex arc, clinical cases on any of the 12 cranial nerves, Brown Sequard syndrome, cerebellar dysfunction, sensory ataxia, Parkinson's disease, UMN lesion, LMN lesion.

xi. Special senses – visual acuity, perimetry, hearing loss, audiogram

xii. Basal metabolic rate

xiii. Integrated Physiology: Chart also includes - Interpret growth chart*, Interpret anthropometric assessment of infants*: (*these two charts are 'Non-core' competencies as per "Competency based Undergraduate Curriculum for the Indian Medical Graduate 2018: Medical Council of India")

xiv. Others

ANNEXURE- IIa

SUGGESTED FORMAT FOR CERTIFICATION OF SKILLS IN PHYSIOLOGY
GENERAL INSTRUCTIONS

General information:

1. There are 13 skills that need to be certified in Physiology
2. These skills will be tested in normal, healthy volunteers or simulated environment
3. The focus will be on whether students perform the procedures correctly
4. Since these are skills that need to be recertified at the end of clinical training, this certification is a **"First level Certification"**

Role of the certifier:

1. Observe the student perform the skill without any prompting or interference
2. At the end of the assessment ask the specific questions that need to be asked (based on the skill checklist)
3. Grade the student (A, B, C, D – see below)
4. Give feedback to the student on the errors, if any, at the end of the skill assessment.
5. Fill in the Certification Sheet

Assessment

Professional conduct and communication:

1. Is the student adequately groomed
2. Does the student introduce him/herself, greet the subject and obtain consent?
3. Does the student use the hand sanitizer?
4. Does the student give clear instructions to the subject?
5. Does the student thank the subject?
6. Does the student use the hand sanitizer at the end of the session?

Skill specific assessment:

1. Has the student conducted the given assessment completely?
2. Has the student conducted the given assessment correctly?
   (for the above two points please refer to the checklist for the specific skill)
3. How do you rate the student for this session?

Grade	Explanation of Grade	Action to be taken
A	Student has performed the assessment **without any error**	Can be certified for skill
B	Student has performed the assessment **with minor errors** that need to be rectified	Re-assessment for parts that have been performed incorrectly
C	Student has performed the assessment **with major errors**	Re-assessment of whole skill
D	Student has **not been able to perform** the assessment	Re-assessment of whole skill

(Note: columns for 'number of attempts' can be added in the template attached below)

ANNEXURE – IIb

CERTIFICATION SHEET – Blank Template:

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

SKILL CHECKLIST
Satisfactory (√), unsatisfactory (X)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n' …….. Date:**
Professional conduct and communication			
Steps □ □ .... □ ...			
Grade			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken. (student's signature)			

Assessor name and signature with date of certification:

ANNEXURE – IIc

Sample Skill certification checklist: Examination of reflexes

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

(Note: columns for 'number of attempts' can be added in the template attached below)
SKILL CHECKLIST (Examination of Reflexes)
Satisfactory (√), unsatisfactory (X)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n'…… Date:**
Professional conduct and communication			
Step Superficial reflexes: • Explains procedure to subject for each of the following: Plantar reflex: • Asks the subject to lie down with foot wear removed • With the help of a blunt object stroke the sole, from heel along the lateral border of foot and medially along the metatarso-phalangeal joint. • Reports the finding (flexor response/Babinski's sign) • Mentions the level of integration on asking (L5, S1) Abdominal reflex:			

Asks the subject to lie down with foot wear removed With the help of a key, strokes parallel to costal margin. Both below and above naval region Observes and reports the contraction of abdominal muscles Mentions the level of integration on asking (T8 to T12) Deep reflexes: Biceps jerk: Places subject's forearm in semi-flexed position supported by his/her forearm in relaxed state. Places thumb on the tendon of biceps in cubital fossa. With the help of knee hammer taps on the thumb. Observes and reports (the contraction of biceps and flexion of forearm) Mentions the level of integration on asking (C5, C6) Triceps jerk: Supports the forearm of subject on his/her arm at right angles. Taps the tendon of triceps just above olecranon. OR Asks the subject to place his hand on opposite shoulder and taps triceps tendon. Observes and reports. (the contraction of triceps and extension of forearm) Mentions the level of integration on asking (C6, C7) Supinator jerk: The subject's forearm is held in semi-prone position and asks to rest his hand on the student's hand. Taps the styloid process of the radius. Observes and reports (contraction of supinator flexion of elbow and eversion of wrist) Mentions the level of integration on asking (C5, C6) Knee jerk: (ask to demonstrate either sitting or supine position) Sitting position: Asks the subject to sit on chair with legs relaxed and not touching the ground / legs crossed. Knee of the examining lower limb is exposed. With knee hammer, taps on the patellar tendon just above tibial tuberosity			

Lying down position: • Asks the subject to liedown supine • Positions the limb at 60°angle from bed • The student passes the hand underneath the testing limb, rests the hand on the opposite limb and the limb to be tested is slightly raised • The tendon is tapped • Observes and reports (contraction of quadriceps and extension of knee) • Mentions level of integration (L2, L3, L4) Ankle jerk: (ask to demonstrate either sitting or supine position) Standing position: • Asks the subject to place the limb to be examined on the stool with knee flexed at right angles to thigh • Dorsiflexes the ankle • Taps the tendoachillis with knee hammer • Makes the subject lie down. Positions the leg slightly flexed at the knee and foot slightly dorsiflexed. • Holds the big toe gently and taps tendoachillis • Observes and reports (contraction of gastrocnemius muscle with plantar flexion) Mentions level of integration (S1, S2)			
Grade			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken. (student's signature)			

Assessor name and signature with date of certification:

ANNEXURE IId

Sample Skill certification checklist: Measurement of Blood pressure at rest

Name of Student:

Subject:

Skill:

Competency Number:

Grading of Student (please circle the appropriate letter – A, B, C, D)

A	Student has performed the assessment without any error
B	Student has performed the assessment with minor errors that need to be rectified
C	Student has performed the assessment with major errors
D	Student has not been able to perform the assessment

(Note: columns for 'number of attempts' can be added in the template attached below)

SKILL CHECKLIST (measurement of Blood Pressure)

	Attempt I Date:	**Attempt II Date:**	**Attempt 'n'…… Date:**
Professional conduct and communication			
Steps: ·Positions subject (sitting-with their feet on floor, legs uncrossed and their back supported/ supine-lying down) and rests for 5min approx · Exposes the subjects arm at least 5 inches above the elbow: Sleeve can be rolled up but must be able to fit a finger under it or remove constrictive clothing. · Squeezes all air out of cuff before applying to subject · Arm is supported, at heart level, palm of hand turned up · Place cuff snugly on bare arm.			

·The centre of the bladder is positioned over the line of the artery. ·The lower edge of the bladder is 2-3 cm above the elbow crease ·The palpatory systolic pressure is measured by palpating for the radial artery, closing the valve, and pumping up the cuff. (Deflates cuff slowly and notes the point of reappearance of pulse) · The student reports the Palpatory Systolic Pressure ·Releases the air from the cuff and waits 30 seconds. -Elevates the pressure 20-30mm Hg above the palpatory systolic pressure. · Uses stethoscope properly (direction of ear pieces). Checks the stethoscope amplification for sound. · Position the diaphragm of the stethoscope over the brachial artery. · Deflates slowly at about 2mmHg/ second ·Releases the remaining air in the cuff after recording BP by opening the valve completely and removing the cuff. · If the student needs to recheck, completely deflates, waits 1-2 minutes and then reinflates. ·Documents: pt. position, arm used, cuff size, blood pressure Measurement			
Grade			
Name and signature of the assessor			
I have received detailed feedback on my performance including my grade, the errors that I have committed and actions to be taken.			

Certifiers name and signature with date of certification:
Signature of the student:

ANNEXURE III

(Note: questions could be added/modified to this document which is at the discretion of individual institution. This appendix could be a part of practical record/logbook of Physiology)

SUGGESTED FORMAT FOR ASSESSING PARTICIPATION IN EARLY CLINICAL EXPOSURE SESSIONS

Session number: **Date:**

Roll No:

Department visited:

Objectives

1.

2.

3.

1. Briefly describe what you learnt from this session/ clinical visit in relation to the objectives. (in 100-150 words)

2. Apart from the above learning, what did you observe that influenced (Positive/negative) you? (in 100-150 words)

Remarks: Satisfactory / Not satisfactory

Name and Signature of facilitator with date:

ANNEXURE IV

(Note: questions could be added/modified to this document which is at the discretion of individual institution. This appendix could be a part of practical record/logbook of Physiology)

SUGGESTED FORMAT FOR AETCOM SESSIONS

Name of the Facilitator:

Date:

AETCOM module Number: Session number:

AETCOM Topic:

Competencies / Objectives:

1.

2.

3.

1. Briefly describe what you learnt from this AETCOM session in relation to the objectives. (in 100-150 words)

2. Apart from the above learning, what did you observe that influenced (Positive/negative) you during this session? (in 100-150 words)

Remarks: Satisfactory / Not satisfactory

Name and Signature of facilitator with date:

Department of Biochemistry

GOAL

The broad goal is to teach Biochemistry to undergraduate students to make them understand in molecular terms, all chemical processes of living cells, understand the molecular basis of disease processes which will help them in understanding clinical conditions and application of the knowledge in treatment.

OBJECTIVES

A. KNOWLEDGE

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

1. Describe the molecular and functional organization of a cell and its subcellular components;
2. Delineate structure, function and how functional groups relate to bio molecular reactions, interactions;
3. Summarize the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
4. Describe digestion and assimilation of nutrients and consequences of malnutrition;
5. Integrate the various aspects of metabolism and their regulatory pathways;
6. Explain the biochemical basis of inherited disorders with their associated sequelae;
7. Describe mechanisms involved in maintenance of body fluid and pH homeostasis;
8. Outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine;
9. Biochemical basis of cancer and carcinogenesis;
10. Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data;
11. Suggest laboratory investigations to support theoretical concepts and clinical diagnosis.

B. SKILLS:

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

1. Make use of conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
2. Analyze and interpret investigative data;
3. Demonstrate the skills of solving scientific and clinical problems and decision Making.

C. INTEGRATION

The knowledge acquired in Biochemistry should help the students to integrate molecular events with structure and function of the human body in health and disease.

COURSE CONTENT AND TEACHING HOURS

A. TEACHING HOURS

TOTAL: 232 HOURS

THEORY SYLLABUS

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
SDL= Self-directed learning; SGL= Small group learning; HI= Horizontal integration; VI = Vertical integration								
	Introduction to Biochemistry		1			1		
BI1.1	**Basic Biochemistry**	**Describe the molecular and functional organization of a cell and its subcellular** 1. Cell: Types and Functions 2. Cellular components: types of cells, functional role of subcellular organelles, marker enzyme 3. Cell membrane structure and functions: structure –function relationships, 4. Cell membrane transport: active transport, passive transport, endocytosis, exocytosis 5. Cytoskeleton: structure and functions of microtubules, actin filaments, intermediate filaments	2		1	3	HI (Physiology)	1
BI2.1	**Enzymes**	**Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.** 1. Define enzyme, isoenzyme, alloenzyme, coenzyme and co-factors	1			1		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		2. Enzymes - IUBMB classification with 4examples 3. Enzymes - general characteristics,enzyme specificity, activesite 4. Coenzymes						
BI2.2		**Observe the estimation of SGOT & SGPT** Estimation and interpretation of SGOT and SGPT	-	-	-	-		
BI2.3		**Describe and explain the basic principles of enzyme activity** 1. Mechanism of enzyme action 2. Factors affecting enzyme activity 3. Regulation of enzymea ctivity	1			1		
BI2.4		**Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes.** 1. Enzyme inhibition with examples 2. Therapeutic role of enzymes	1			1	VI (Pathology, General Medicine)	1
BI2.5		**Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.** 1. Isoenzymes 2. Enzymes used as diagnostic markers	1		1	2	VI (Pathology, General Medicine)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI2.6		**Discuss use of enzymes in laboratory investigations (Enzyme-basedassays)** 1. Enzymekinetics 2. Principles for the estimation ofenzymes 3. Role of enzymes in molecularbiology and immunoassays	1		1	2	VI (Pathology, General Medicine)	
BI2.7		**Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.** 1. Reference ranges, interpretation of laboratory reports of enzymes and isoenzymes in diseases of heart, muscle, liver, bone,pancreas 2. Enzymes as tumourmarkers			2	2	VI (Pathology, General Medicine)	
BI3.1	**Chemistry and metabolism of carbohydrates**	**Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body** 1. Definition and classification of carbohydrates with examples and their properties 2. Monosaccharides, derivatives of monosaccharides and their biomedical importance 3. Oligosaccharides, polysaccharides-composition and biomedicalimportance	2		1	3		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI3.2		**Describe the processes involved in digestion and assimilation of carbohydrates and storage.** 1. Digestion of carbohydrates 2. Absorption of carbohydrates, role of glucose transporters and theirimportance 3. Glycogen metabolism- conversion of glucose toglycogen	1			1		
BI3.3		**Describe and discuss the digestion and assimilation of carbohydrates from food.**		1		1	VI (General Medicine)	1
		1. Digestible and undigestible carbohydrates, dietaryfibre 2. Clinical aspects of carbohydrate digestion and absorption, lactoseintolerance						
BI3.4		**Define and differentiate the pathways of carbohydrate metabolism, (glycolysis, gluconeogenesis, glycogen metabolism, HMPshunt).**	3		2	5	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Glycolysis - steps, energetics, regulation, aerobic and anaerobic glycolysis, Cori's cycle 2. RapaportLeubering cycle and its significance 3. Pyruvate dehydrogenase complex and its co enzymes 4. Gluconeogenesis- substrates, key enzymes, steps in relation to glycolysis,regulation 5. Glycogenesis and glycogenolysis - steps, energetics andregulation; 6. Minor metabolic pathways of glucose: HMP shunt – steps, regulation and significance Uronic acid pathway – steps and significance Metabolism of galactose and fructose						
BI3.5		**Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.** 1. Role of hormones in the regulation of	1		1	2		
		carbohydrate metabolism 2. Inborn errors of carbohydrate metabolism - glycogen storage disorders, disorders associated with fructose and galactose metabolism 3. Diabetes mellitus andhypoglycemia						
BI3.6		**Describe and discuss the concept of TCA cycle as aamphibolic pathway and its regulation.**	1			1		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		Citric acid cycle - reactions, energetics, regulation, significance						
BI3.7		**Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)** Inhibitors of enzymes of glycolysis and citric acid cycle and their importance			1	1		
BI3.8		**Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.** Laboratory tests done for inborn errors of carbohydrate metabolism and their interpretation		1		1	VI (Pathology, General Medicine)	1
BI3.9		**Discuss the mechanism and significance of blood glucose regulation in health and disease.** 1. Metabolism of glucose in fed and fasting states 2. Regulation of bloodglucose 3. Diabetes mellitus and itscomplications	1			1	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
I3.10		**Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydratemetabolism.** 1. Normal blood sugar levels, glycatedhemoglobin 2. Laboratory investigation for diabetes mellitus – glucose tolerance test andits interpretation			1	1	VI (General Medicine)	
BI4.1	**Chemistry and metabolism of lipids**	**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.**	3			3	VI (General medicine)	1
		1. Definition, classification, functions and biological importance oflipids 2. Classification of fatty acids with examples, essential fatty acids and theirimportance 3. Composition and importance of triglycerides 4. Phospholipids - classification with examples, biological functions and clinical significance 5. Cholesterol-functions andderivatives						
BI4.2		**Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism.**	5		2	7		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Composition of dietarylipids 2. Digestion and absorption of dietary lipids - role of bile acids and variousdigestive						
		enzymes 3. Absorption of lipids - including small, medium and long chain fattyacids 4. Disorders of lipid digestion andabsorption 5. Metabolism of triglycerides and phospholipids 6. Fatty acidoxidation 7. Biosynthesis of fattyacids 8. Ketone bodymetabolism 9. Metabolism ofcholesterol						
BI4.3		**Explain the regulation of lipoprotein metabolism & associateddisorders.** 1. Formation and cellular uptake and the fate of chylomicrons, VLDL, LDL andHDL. 2. Hyper andhypolipoproteinemias 3. Fattyliver	1	1		2		
BI4.4		**Describe the structure and functions of lipoproteins, their functions, interrelations & relations withatherosclerosis.** 1. Lipoproteins - classes, structure, functions and clinicalimportance 2. Apolipoproteins – classes, functions and clinicalimportance 3. Atherosclerosis – concept of CVD risk factors, lipids and lipoproteins andCVD			1	1		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI4.5		**Interpret laboratory results of analytesassociated with metabolism oflipids.** 1. Various components of lipid profile and their referenceranges 2. Inbornerrorsoflipidmetabolismandlipid storage disorders			1	1		
BI4.6		**Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.** 1. Eicosanoids 2. Prostaglandins, prostacyclins, thomboxanes and leukotrienes -synthesis andfunctions 3. Therapeutic applications ofprostaglandins 4. Anti inflammatory drugs – mechanism of action	1			1		
BI4.7		**Interpret laboratory results of analytesassociated with metabolism oflipids.** 1. Various patterns ofdyslipidemias 2. Lipid and lipoprotein levels in various hyperlipoproteinemias			1	1		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI5.1	**Chemistry and metabolism of proteins**	**Describe and discuss structural organization of proteins.** 1. Amino acids: Classification of amino acids: based on side-chains, nutritional requirement, metabolicfate 2. Proteins: Definition, Classification based on chemical nature and solubility, nutritional value 3. Functions 4. Properties ofProteins 5. Structure of proteins: Levels of organization, bonds stabilizingstructure 6. Outlines of elucidation of proteinstructure 7. Separation techniques for proteins and aminoacids 8. Plasmaproteins	5			5		
BI5.2		**Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies** 1. Structure-function relationship: Haemoglobin, collagen, enzymes 2. Biologically activepeptides	1		1	2	VI (Pathology, General Medicine)	1
BI5.3		**Describe the digestion and absorption of dietary proteins** 1. Digestion ofproteins 2. Absorption of amino acids: transporters, meisterscycle 3. Disorders associated with absorption of aminoacids	1			1	VI (Pediatrics)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI5.4		**Describe common disorders associated with protein metabolism** 1. Amino acidpool 2. General pathways of metabolism: transamination anddeamination 3. Inter-organ transport of amino aicds 4. Ammonia: formation, transport and detoxification through urea cycle, urea cycle disorders, ammonia toxicity 5. Metabolic fate of amino acidcarbonskeleton 6. Metabolism of individual amino acids: alanine, serine, histidine, acidicaminoacids-aspartate, glutamate, sulphur containing amino acids, aromatic aminoacids-phenylalanine, tyrosine, tryptophan,branchedchainamino acids-valine, leucine, isoleucine,basic amino acids- arginine, lysine 7. Special products derived from amino acids 8. Inborn errors of metabolism associated with amino acids 9. One carbon metabolism	5	1	5	11	VI (Pediatrics)	
BI5.5		**Interpret laboratory results of analytesassociated with metabolism ofproteins.** 1. Urea 2. Creatinine 3. Screening test. Guthrie test for PKU (phenyl ketonuria).	1		1	2	VI (General Medicine)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.1 .	Metabolism and homeostasis	**Discuss the metabolic processes that take place in specific organs in the body in the fed and fastingstates** 1. The metabolic fates of carbohydrates, lipids andproteins 2. Integration ofmetabolism 3. Metabolic profile of individualorgans 4. Organ-specific metabolic pathways active in the fasting and well fedstates	2			2	VI (General Medicine)	1
BI6.2		**Describe and discuss the metabolic processes in which nucleotides are involved.** 1. Nitrogen bases: purines, pyrimidines-structure,functions 2. Nucleosides, Nucleotides-structure, functions 3. Nucleosidederivatives 4. Biologically important nucleotides and syntheticnucleotides 5. Metabolism of Purines: Sources of carbon atoms of purine ring, de novo synthesis, salvagepathway 6. Metabolism of pyrimidines: Sources of carbon atoms of pyrimidine ring, de no synthesis, salvagepathway	3		2	5		
BI6.3		**Describe the common disorders associated with nucleotide metabolism.** 1. Disorders of purine metabolism: Gout: primary, secondary; Lesch-Nyhansyndrome 2. Disorders of pyrimidine metabolism: oroticaciduria	2			2	HI (Physiology	1

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.4		**Discuss the laboratory results of analytes associated with gout &LeschNyhan syndrome** 1. Uricacid 2. HGPRTase			1	1	VI (General Medicine)	1
BI6.5		**Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency.** 1. Definition and classification ofvitamins 2. Chemistry, structure, sources, metabolism, functions, daily requirement, deficiency disorders and hypervitaminosis of vitamins including thiamine, riboflavin, niacin, pyridoxine, pantothenic acid, biotin, folic acid, vitamin B12, vitamin C, vitamin A, vitamin D, vitamin E, vitaminK	5	2	6	13	VI (General Medicine)	1
BI6.6		**Describe the biochemical processes involved in generation of energy in cells.** 1. Bioenergetics, exergonic and endergonic reactions 2. High and low energycompounds 3. Electron transport chain, shuttle pathways, biological oxidation and oxidative phosphorylation 4. Inhibitors of ETC, uncouplers and their significance 5. Brown adipose tissue and itsimportance	2		1	3		
BI6.7		**Describe the processes involved in**	3		1	4	VI (General	1

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		maintenance of normal pH, water &electrolyte balance of body fluids and the derangements associated with these. 1. Distribution of body water and its composition in variouscompartments 2. Distribution of major electrolytes in various compartments of thebody 3. Water and electrolyte balancemechanisms 4. Disorders of water and electrolytebalance 5. Acids, bases andbuffers 6. Body buffers and theirfunctions 7. Mechanism of acid basebalance 8. Disorders of acid basebalance					Medicine), HI (Physiology)	
BI6.8		**Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.** 1. Importance of Arterial Blood Gas analysis in acid base disorders and itsinterpretation 2. Anion gap and its importance		1	2	3	VI (General Medicine)	1
BI6.9		**Describe the functions of various minerals in the body, their metabolism and homeostasis.** 1. Macro and microminerals 2. Sources, functions, metabolism, regulation and RDA of minerals including sodium, potassium, calcium, phosphorous, chloride, iodine, magnesium, manganese,iron, copper, sulphur, zinc, molybdenum, cobalt, fluoride, selenium, chromium	3		2	5	VI (General Medicine), HI (Physiology)	1

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.10		**Enumerate and describe the disorders associated with mineral metabolism.**		1	1	2	VI (General Medicine)	1
		1. Signs and symptoms, reference ranges and laboratory investigations of disorders associated with minerals including sodium, potassium, calcium, phosphorous, chloride, iodine, magnesium, manganese, iron, copper, sulphur, zinc, molybdenum, cobalt, fluoride, selenium,chromium 2. Heavy metal poisoning andtoxicology						
BI6.11		**Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.**	1		1	2	VI (General Medicine, Pathology), HI (Physiology)	1
		1. Haem – structure, functions of haemand haem containing compounds, biosynthesis andcatabolism 2. Bilirubinmetabolism 3. Disorders of haem metabolism –porphyrias						
BI6.12		**Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathologicalrelevance.**	1	1	2	4	VI (General Medicine, Pathology)	1

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		1. Structure and functions of haemoglobin and myoglobin 2. Structure functionrelationship 3. Haemoglobin – major types, structure function relationship, derivatives of haemoglobin (carboxyHb, metHb, glycatedHb), and theirimportance 4. Molecular basis of haemoglobinopathies including sickle cell anaemiaand thalassemias						
BI6.13		**Describe the functions of the kidney, liver,Thyroid and adrenal glands.** 1. Cell signalling: Introduction of concept of Autocrine, paracrine, juxtacrine, endocrine systems 2. Classification of hormones 3. General Principles of hormonalaction 4. Metabolic roles of thyroid and adrenal gland hormones 5. Functions of liver 6. Functions of Kidney	2		2	4	VI (General Medicine, Pathology)	1
BI6.14		**Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).** 1. Hepatic functiontests 2. Renal functiontests 3. Thyroid functiontests 4. Function tests related to adrenalglands	2		1	3	VI (General Medicine, Pathology)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI6.15		**Describe the abnormalities of kidney, liver, thyroid and adrenal glands** 1. Renalfailure 2. Liver dysfunction,jaundice 3. Hyperthyroidism and hypothyroidism 4. Hyper and Hypoadrenalism			2	2	VI (General Medicine, Pathology)	
BI7.1		**Describe the structure and functions of DNA and RNA and outline the cell cycle.** 1. DNA: structuralorganization 2. RNA: types, structure,functions 3. miRNA: types, function andimportance 4. Cellcycle	1		2	3		
BI7.2		**Describe the processes involved in replication & repair of DNA and the transcription & translationmechanisms**	3		2	5		
		1. Central dogma oflife 2. DNA metabolism: cell cycle and its regulation, replication, inhibitors of replication and itsimportance 3. DNA repair and defects associated with repair mechanisms DNA mutations: causes, types,consequences 4. RNA metabolism: Tanscription, post-transcriptional modifications, inhibitors of transcription and itsimportance 5. Protein Biosynthesis: Genetic code, Translation, post-translational modifications, inhibitors of translation and itsimportance 6. Regulation of geneexpression 7. Proteinfolding						

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI7.3		**Describe gene mutations and basic mechanism of regulation of gene expression** 1. Mutations: types,consequences 2. Regulation of gene expression: concept of operon, induction, repression, gene-amplification, geneswitching			2	2	VI (Pediatrics)	1
BI7.4		**Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.** 1. Genetic engineering and its clinical applications 2. Nucleotide polymorphisms and disease 3. Genetherapy 4. Techniques used in molecular diagnostics: PCR, Blotting techniques, DNA sequencing, RFLP, nanotechnology	1		6	7	VI (General medicine, Pediatrics)	
		5. Introduction to Bioinformatics						
BI7.5		**Describe the role of xenobiotics in disease** 1. Metabolism and detoxification of xenobiotics - Phase I and phase IIreactions 2. Diseasescaused	1			1		
BI7.6		**Describe the anti-oxidant defence systems in the body** 1. Reactive oxygenspecies 2. Generation of freeradicals 3. Normal antioxidant defence mechanisms: enzymatic andnon-enzymatic 4. Damage caused by free radicals to biomolecules: lipid peroxidation, protein carbonylation, DNAoxidation	1			1		

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI7.7		**Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.** 1. Role of oxidative stress in cancer: oxidative stress induced DNA damage, mutations 2. Role of oxidative stress in complications of diabetes: oxidative stress induced formation of advanced glycationend products, activation of prtotein kinase C pathway, oxidation of LDL and atherogenesis 3. Role of oxidative stress in atherosclerosis: oxidative stress induced endothelial dysfunction, oxidation of LDL and formation of fattystreak	1		2	3	VI (General medicine, Pathology)	1
BI8.1	**Nutrition**	**Discuss the importance of various dietary components and explain importance of dietary fibre** 1. Major dietary components, calorific value of foods, components of a balanceddiet 2. Dietary fibre - sources, RDA, nutritional importance	1		1	2	VI (General medicine, Pathology, Pediatrics)	1
BI8.2		**Describe the types and causes of proteinenergy malnutrition and its effects** 1. Nitrogen balance, biological value of proteins 2. Kwashiorkar and Marasmus	1		1	2	VI (General medicine, Pathology, Pediatrics)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI8.3		**Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.** 1. Respiratory coefficient, basal metabolic rate, specific dynamicaction 2. Calculation of energy requirements and prescription of diet in health including childhood and adolescence, pregnancy and lactation, and in disease conditions such as diabetes mellitus, chronic kidney disease, and coronary artery disease and prescription of diet			2	2	VI (General medicine)	
BI8.4		**Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity** 1. Indicators of nutritional status including body massindex 2. Overweight and obesity – definition, causes and health risksassociated			2	2	VI (General medicine, Pathology)	
BI8.5		**Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its**			2	2	VI (Community medicine General medicine,	
		importance) 1. Food pyramid, glycemicindex 2. Mutual supplementation of cereals and pulses					Pediatrics)	

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI9.1	**Extracellular matrix**	**List the functions and components of the extracellular matrix (ECM)** 1. ECM proteins: collagen, elastin, fibronectin, laminin, muscle proteins, keratins, actin, myosin,troponins 2. Functions of ECMproteins	1			1		
BI9.2		**Discuss the involvement of ECM components in health anddisease.** 1. Biochemistry ofageing 2. Abnormalities ofcollagen 3. Malignant hyperthermia, muscular dystrophy 4. Cataract 5. Prions and Alzheimer'sdisease			1	1	VI (General Medicine)	1
BI9.3		**Describe protein targeting & sorting along with its associated disorders.** 1. Signal peptides for proteinsorting 2. Defects in protein sorting: Zellweger syndrome, primary hyperoxaluria, cyctic fibrosis, inclusion celldisease	1			1		
BI10.1	**Oncology and Immunity**	**Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis** 1. Cell cycle: regulation, programmed cell death(apoptosis) 2. Abnormal cellgrowth 3. Biochemical basis ofcarcinogenesis 4. Oncogenicmarkers 5. Biochemical basis of cancer therapy:	1	1	1	3	VI (OBG, General surgery, Pathology)	1

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
		alkylating agents, antimetabolites, topoisomerase inhibitors, antibiotics, hormones, receptor blockers, radiotherapy etc (competency) 6. Monoclonal antibodies and their application						
BI10.2		**Describe various biochemical tumor markers and the biochemical basis of cancer therapy** 1. Tumourmarkers 2. Biochemical basis of cancer therapy: alkylating agents, antimetabolites, topoisomerase inhibitors, antibiotics, hormones, receptor blockers, radiotherapy etc(competency) 3. Monoclonal antibodies and theirapplication			1	1	VI (OBG, General surgery, Pathology)	
BI10.3		**Describe the cellular and humoral components of the immune system & describe the types and structure of antibody** 1. Antigens: concept of epitope,hapten 2. Antibodies: Types, structure,functions 3. Cells of the immuneresponse 4. Cytokines, inflammatory markers, adhesion molecules 5. Cell mediated immunity and humoralimmunity	1		1	2	VI (OBG, General surgery, Pathology)	2

Competency number	Topic	Competency	Lectures (78 hours)	SDL (10hours)	SGL/Tutorial (74 hours)	Total (162 hours)	Integrated teaching type (Departments)	Integrated teaching hours (20 hours)
BI10.4		**Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.** 1. Innate and adaptive immunity 2. Induction of immune response and types of immuneresponse 3. Hypersensitivityreactions 4. Immune tolerance and autoimmunity			1	1	VI (General medicine, Pathology), HI (Physiology)	
BI10.5		**Describe antigens and concepts involved in vaccine development.** 1. Antigen:properties 2. Concept of vaccine development (competency)			1	1	VI (Pathology, Pediatrics, Microbiology)	

TEACHING HOURS:

Theory: 232 hours (78 Lectures+144 Small group teaching&Practical + 10 SDL)

Practical: 70 hours

Early clinical exposure (ECE): Lectures – 9hrs.

TEACHING LEARNING METHODS:

Sr. No	**Teaching learning method**	**No. of hours**
1	Lectures	78
2	Small group learning (SGL)	74
3	Self Directed Learning (SDL)	10
4	Practicals	70
TOTAL		232 Hours
Early clinical exposure		9 Hours
AETCOM		12 Hours

PRACTICAL SYLLABUS

No of hours: 70
Part 1: Qualitative Experiments –16hrs
Part 2: Quantitative Experiments – 30hrs
Part 3: Demonstration Experiments – 18 hrs
Part 4: Interpretation experiments-6 hrs

S No.	Name of the practical	Competencies covered	Teaching method	Hours	Assessment method
1	**Basics of Laboratory:** Commonly used laboratory apparatusand equipments, good safe laboratory practice and wastedisposal 1. Specimen collection and processing: collection of blood, urine and other body fluids, types of anticoagulants used, urinepreservatives, handling of specimens andtransport 2. Preanalytical variation: Biological variation, specimencollection related causes of variation, post collectionvariation 3. Analytical goals: precision, accuracy, bias, sensitivity andspecificity 4. Biological reference intervals of commonanalytes 5. Basics of automation, quality control programs (internal andexternal quality control), laboratory informationsystem 6. Critical alerts and itsimportance 7. Biomedical wastemanagement	**BI11.1**	Lecture	4	Written/ Viva voce
2	**Analysis of normal urine:** Reference ranges of normal constituents in urine and interpretation	**BI11.3**	Lecture & Instructions	4	Written/ Viva voce
3	**Analysis of normal urine**	**BI11.4**	Practicals	4	Skill assessment
4	**Analysis of Abnormal constituents in urine**: Case study (diabetes mellitus, Jaundice, nephrotic syndrome, proteinuria) and interpretation of abnormal constituents in urine	**BI11.4, BI11.17, BI11.20**	Lecture & Instructions, case study	2	Written/ Viva voce
5	**Analysis of Abnormal constituents in urine**	**BI11.4, BI11.20**	Practicals	2	Skill assessment
6	**Principles of colorimetry and spectrophotometry, demonstration of colorimeter**	**BI11.6, BI11.18, BI11.19**	Lecture	2	Written/ Viva voce

7	**Renal function tests (RFT):** Estimation of serum urea, creatinine and creatinine clearance, Reference ranges, Case study (renal failure) and interpretation	**BI11.7, BI11.17, BI11.21, BI11.22**	Lecture & Instructions, case study	2	Written/ Viva voce
8	**Renal function tests (RFT)**: Estimation of serum urea, creatinine and creatinine clearance	**BI11.7, BI11.21, BI11.22**	Practicals	2	Skill assessment
9	**Estimation of serum calcium, phosphorous, uric acid**, Reference ranges, Case study (Gout) interpretation	**BI11.11, BI11.17,**	Lecture & Instructions	2	Written/ Viva voce
10	**Estimation of serum calcium, phosphorous, uric acid**	**BI11.11**	Practicals	4	Skill assessment
11	**Serum Electrolytes:** demonstration of ISE, Case study and interpretation of electrolyte	**BI6.7, BI11.16, BI11.19**	Lecture & Demonstration, Case study	2	Written/ Viva voce
12	**Glucose tolerance test -** Estimation of plasma glucose, Normal GTT, Reference ranges, Case study of GTT (all patterns including diabetes mellitus) and interpretation, demonstration of glucometer	**BI11.17, BI11.21**	Lecture & Instructions, DOAP, Case study	2	Written/ Viva voce
13	**Glucose tolerance test**: Estimation of plasma glucose- GTT (FPG, PP-1 & 2 hr)	**BI11.21**	Practicals	2	Skill assessment
14	**Estimation of serum Lipid profile:** serum total cholesterol, HDL cholesterol, Triglycerides, Reference ranges, Case study (dyslipidemia)and interpretation	**BI11.9, BI11.10, BI11.12, BI11.17,**	Lecture & Instructions	2	Written/ Viva voce
15	**Estimation of serum Lipid profile**: serum total cholesterol, HDL cholesterol, Triglycerides	**BI11.9, BI11.10, BI11.12**	Practicals	2	Skill assessment
16	**Liver function test:** Estimation of serum proteins, albumin, albumin:globulin ratio, Reference ranges, case study (liver diseases) and interpretation	**BI11.8, BI11.17, BI11.21, BI11.22**	Lecture & Instructions	2	Written/ Viva voce
17	**Liver function test:** Estimation of serum proteins, albumin and albumin:globulin ratio	**BI11.8, BI11.21, BI11.22**	Practicals, DOAP	2	Skill assessment
18	**Liver function test:** Estimation of serum bilirubin, SGOT, SGPT, alkaline phosphatase, Reference ranges, case study of types of Jaundice and interpretation	**BI11.12, BI11.13, BI11.14, BI11.17**	Lecture & Instructions	2	Written/ Viva voce
19	**Liver function test:** Estimation of serum bilirubin	**BI11.12**	Practicals	2	Skill assessment

20	**Liver function test:** Estimation of Liver enzymes -SGOT	**BI2.2, BI11.12**	Practicals	2	Skill assessment
21	**Liver function test:** Estimation of Liver enzymes -SGPT	**BI2.2, BI11.12**	Practicals	2	Skill assessment
22	**Liver function test:** Estimation of Liver enzymes -ALP	**BI11.14**	Practicals	2	Skill assessment
23	**CSF analysis:** CSF formation, function, composition, Case study and interpretation	**BI11.15**	Lecture	2	Written/ Viva voce
24	**Screening of urine for inborn errors:** Case study of aminoacidurias, carbohydrate metabolism, Demonstration of paper chromatography, TLC	**BI11.5, BI11.16**	Lecture & Demonstration, Case study	2	Written/ Viva voce
25	**Screening of urine for inborn errors:** Screening of urine for inborn errors - carbohydrate, amino acids, porphyrias& poisoning	**BI11.5**	Practicals	2	Skill assessment
26	**Estimation of pH:** Preparation of buffers, , uses of buffers, demonstration of pH meter	**BI11.2, BI11.19**	Lecture & Demonstration	2	Written/ Viva voce
27	**Serum protein electrophoresis:** Principle, applications, interpretation, demonstration of Serum Protein electrophoresis, Polyacrylamide gel electrophoresis	**BI11.16**	Lecture & Demonstration	4	Written/ Viva voce
28	**ABG analysis:** Case study and interpretation of acid-base disorders, demonstration of ABG analyzer	**BI11.16, BI11.17, BI11.19**	Lecture & Demonstration, case study	2	Written/ Viva voce
29	**Immunoassays:** Principle, applications, interpretation, demonstration of ELISA, Immunodiffusion	**BI11.16**	Lecture & Demonstration	2	Written/ Viva voce
30	**Automation and quality control:** Basics of Autoanalyser and Quality control	**BI11.16, BI11.19**	Demonstration	2	Written/ Viva voce
31	**Isolation of DNA** from blood/,tissue	**BI11.16**	Demonstration	2	Written/ Viva voce
32	**Diet planning and importance of fat in diet:** Calculate energy content of different food Items, identify food items with high and low glycemicindex and explain the importance of these in the diet Enumerateadvantages and/or disadvantages of use of unsaturated, saturated and trans fats in food	**BI11.23, BI11.24**	Small group teaching	2	Written/ Viva voce
	Total hours			70	

EXAMINATION:

i. Assessment methods for Theory (Formative and Summative):

No.	Question	Marks	Total Marks
1.	Long answer questions	2x15	30
2.	Short answer questions	10x5	50
3.	Multiple choice questions	10x2	20
Total :			100 Marks

ii. Assessment pattern for practicals:

S. No.	Question	Marks	Total Marks
1.	Spotters	10 x1	10
2.	OSPE: - Number of stations:2 (1performance station and 1 response station) a. Performance station; b. Response station	2x5	10
3.	Qualitative Analysis of normal or abnormal Constituents of Urine	20	20
4.	Quantitative estimation and interpretation- Plasma Glucose or serum urea or serum creatinine and creatinine clearance or serum total protein or serum albumin	20	20
5.	Case Studies - 4	4 x 5	20
6.	Viva	20	20
Total :			100 Marks

CERTIFICATION OF SKILL ACQUISITION:

To be certified usingchecklists

Sr. No	Competency number: Competency to certified	No. required to certify
1	**BI11.4:** Perform urine analysis to estimate and determine normal constituents	1
2	**BI11.4:** Perform urine analysis to estimate and determine abnormal constituents	1
3	**BI11.20:** Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states	1
4	**BI11.21:** Demonstrate estimation of glucose in plasma	1
5	**BI11.7, BI11.20:** Demonstrate the estimation of serum Creatinineand Creatinine clearance	1
6	**BI11.21:** Demonstrate estimation of urea in serum	1
7	**BI11.7, BI11.21:** Demonstrate estimation of serum protein, albumin and A:G ratio	1

RECOMMENDEDBOOKS:

1. Textbook of Biochemistry for Medicalstudents-D.M.Vasudevan
2. Biochemistry:U.Satyanarayana
3. Textbook of Medical Biochemistry: DineshPuri

REFERENCE BOOKS:

1. Harper’s illustrated Biochemistry: RobertMurray
2. Principals of Biochemistry:Lehninger
3. Biochemistry: LupertStryer
4. Biochemistry (Lippincott's IllustratedReviews)

5. Practical Clinical Biochemistry: HaroldVarley

NOTE: Latest editions to be followed

UNIVERSITY THEORY EXAM BLUE PRINT

There shall be two theory papers of 100 marks each and duration of each paper shall be 3 hours. The pattern of questions in each paper shall be as mentioned below

Type of Question	Number of Questions	Maximum Marks	Total
Structured Long essay questions (SLEQ)	2	15	30
Short answer questions (SAQ) (includes one case-based question)	10	5	50
Multiple choice questions (MCQs)	20	1	20
TOTAL MARKS			100

Note:

1. A suggested format for blueprint of question paper is shown in Annexure I
2. Please refer Annexure II for suggested model question paper
3. Distribution of topics for Paper 1 and Paper 2 for University examination Topic wise weightage is given in ANNEXURE III.

Note:

1. Weightage of marks assigned to topics may add to more than 100
2. Structured Long essay question should be from the topics with weightage of MORE THAN 15marks. However, a part of structured long essay may be from other topics adhering to the weightage of marks allotted for that topic.

ANNEXURE 1

BLUE PRINT FOR QUESTION PAPER (to be filled by the question paper setter)
Total marks under each type of question from each topic needs to be entered by QP Setter.
It should be in accordance with the guidelines suggested by SVIMS University.
BIOCHEMISTRY PAPER 1

A	B	C	D	E	F	G	
SI No	TOPIC	Structured Long essay questions (SLEQ) **15 Marks**	Short notes (includes one case-based question) **5 Marks**	Multiple choice questions (MCQs) **1 Mark**	TOTAL (Columns C to E)	Higher order thinking skills questions	
						Question no	Marks

Marks allocated to questions that assess higher order thinking skills (%) =
Note:

1. Question paper to be framed using “Blue print “table as guideline
2. Case-based question to be included in SAQ.
3. One AETCOM question to be asked in paper I as SAQ on: What does it mean to be a doctor?
4. A minimum of 30% marks in each paper shall be allocated to questions that assess the higher order thinking skills of the student. This includes Case based questions.

ANNEXURE II

DIVISION OF SYLLABUS FOR MBBS EXAMS

MBBS Ist Yr

BIOCHEMISTRY PAPER- I

Sr. No.	TOPIC	WEIGHTAGE OF MARKS
1	Cell-Molecular & Functional organization	5
2	Extracellular matrix	5
3	Carbohydrate Chemistry and Metabolism	15
4	Lipid Chemistry and Metabolism	15
5	Enzymes	10
6	Biological Oxidation	5
7	Hemoglobin	5
8	Mineral Metabolism	10
9	Vitamin	10
10	Energy metabolism and Nutrition	5
11	Fluid, Electrolyte and Acid-Base Balance	10
12	AETCOM* What does it mean to be a doctor	5

*** Note: One question for 05 marks must be given compulsorily from the AETCOM module in Paper I.**

BIOCHEMISTRY PAPER- II

Sr. No	Topic	WEIGHTAGE OF MARKS
1	Protein Chemistry and Metabolism	15
2	Integration of metabolism	10
3	Nucleic Acid Chemistry and Metabolism	15
4	Molecular Biology	15
5	Functional Tests	10
6	Cell-Cell Interactions	5
7	Endocrine Systems	10
8	Carcinogenesis	5
9	Detoxification	5
10	Immunology	5
11	Clinical Chemistry	5

ANNEXURE III

MODEL QUESTION PAPERS

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN; TIRUPATI
I MBBS
BIOCHEMISTRY PAPER-1

Date: **Duration**: 3 hours **Max. Marks**: 100

Answer all questions

Draw neat and labeled diagrams wherever necessary

I. LAQ: 2 x 15M=30M

1. Give an account of the sources, formation of vitamin D and deficiency manifestations of Vitamin D. Add a note on its role in calcium homeostasis. (2+4+4+5)
2. What is gluconeogenesis? Describe gluconeogenesis in detail. Add a note on its regulation. (2+8+5)

II. SAQ: 10 x 5=50M

3. Define competitive inhibition. Add a note on clinical applications of competitive enzyme inhibitors. (1 + 4)
4. Describe in detail the renal mechanisms for regulation of pH.
5. A 52-year old male patient, a mechanic by profession experienced a sudden, crushing chest pain, after he returned from his work. His wife noticed that he was pale, sweating profusely and was in distress. She rushed him to the ICU of a nearby hospital immediately. He told the attending physician that on previous occasions too he had felt such pain but it had subsided with rest. He is a known smoker. He also suffers from diabetes, dyslipidemia and hypertension. ECG was taken and it showed ST elevation in leads II, III. He was admitted in the ICU.
   i. What is the probable diagnosis?
   ii. What are the laboratory investigations which would aid in diagnosis apart from ECG?
   iii. What lipid parameters would you measure in this patient? (1+2+2)

6. What is anion gap?
   Calculate the anion gap using the following data: Serum sodium: 145mmol/L, serum potassium: 4.0 mmol/L, serum bicarbonate- 24mmol/L, serum chloride: 104 mmol/L.
   List three causes of raised anion gap. (1+3+1)
7. Define oxidative phosphorylation. Explain the chemiosmotic theory of oxidative phosphorylation. (1 + 4)
8. Discuss the structure of normal haemoglobin. Add a note on sickle cell disease. (2 + 3)
9. What do you understand by balanced diet? Explain the importance of dietary fibre. (1+4)
10. Describe the process of digestion and absorption of lipids. (2.5+2.5)
11. Explain the mucosal block theory of iron absorption. List the manifestations of iron deficiency anaemia. (4+1)
12. Enumerate and describe professional qualities and roles of a physician(2+3)

III.Multiple choice questions: 1 x 20=20 marks

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES; TIRUPATI
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN; TIRUPATI
DEPARTMENT OF BIOCHEMISTRY

I MBBS PAPER-I MCQ's

Date: **Duration**: 20 minutes **Max. Marks**: 100

Name of the student: **Roll No:**

III. Multiple choice questions: **1 x 20=20 marks**

1. **A 50 years old male brought to Emergency department with chief complaint of breathlessness. He has chronic obstructive airway disease since 5 years. On examination he was found cyanosed. Blood investigations revealed following results: Blood pH is below normal reference range; pCO2 is elevated markedly, bicarbonate is elevated. Name the acid base disorder.** [ ]
   a. Metabolic Acidosis
   b. Respiratory Acidosis
   c. Metabolic Alkalosis
   d. Respiratory Alkalosis

2. **Beriberi is due to deficiency of:** [ ]
   a. Niacin
   b. Thiamine
   c. Riboflavin
   d. Vitamin B12

3. **In competitive inhibition of enzymes:** [ ]
   a. Km increases whereas Vmax decreases
   b. Km increases whereas Vmax remains unchanged
   c. Vmax increases while km decreases
   d. Vmax decreases while km remains unchanged

4. **The low activity of enzyme uroporphyrinogen III synthase results in:** [ ]
   a. Acute intermittent porphyria
   b. Congenital erythropoietic porphyria
   c. Hereditary coproporphyria
   d. Variegate porphyria

5. **All the following are saturated fatty acids ,except:** [ ]
   a. Palmitic acid
   b. Stearic acid
   c. Arachidic acid
   d. Oleic acid

6. **Heriditary fructose intolerance is due to:** [ ]
   a. Aldolase A
   b. Aldolase B
   c. Fructokinase
   d. Glycerol kinase

7. **Niemann-pick disease occurs due to defect in:** [ ]
   a. Ceramidase
   b. Sphingomyelinase
   c. Phospholipase C
   d. Galactosidase

8. **Which one of the following vitamins is essential for the liberation of free THF from N5- Methyl THF:** [ ]
   a. B9
   b. B2
   c. B6
   d. B12

9. **Zinc is present in all enzymes except:** [ ]
   a. Cardonic anhydrase
   b. Alkaline phosphatise
   c. Carboxypeptidase
   d. Amylase

10. Which among the following is the major intracellular cation? [ ]

a. Magnesium
b. Potassium
c. Sodium
d. Calcium

11. Structure of vitamin E contains: [ ]

a. Chromane ring
b. Beta ionone ring
c. Thiazole ring
d. Naphthoquinone ring

12. The following GAG does not contain uronic acid: [ ]

a. Hyaluronic acid
b. Chondroitin sulphate
c. Dermatan sulphate
d. Keratan sulphate

13. Transamination reactions require: [ ]

a. Pyridoxal phosphate
b. B12
c. Thiamine
d. Vitamin C

14. Which among the followingdoes not contain iron? [ ]

a. Aconitase
b. Xanthine oxidase
c. Albumin
d. Myoglobin

15. Which is not a major class in classification of enzymes? [ ]

a. Transferases
b. Hydrolases
c. Dehydrogenases
d. Isomerases

16. All are true about Wilsons disease <u>except</u>: [ ]

a. Ceruloplasmin level in blood increased
b. Defective copper binding ATPase gene
c. Copper deposits in brain and liver
d. Kayser-Fleischer rings are see around cornea

17. Cholecalciferolis synthesised in: [ ]

a. Intestinal mucosa
b. Skin
c. Liver
d. Kidney

18. Vitamin B2 is constituent of [ ]

a. NAD
b. FAD
c. NADH
d. None of the above

19. Metabolic acidosis with high anion gap is seen in all <u>except</u>: [ ]

a. Diabetic ketosis
b. Lactic acidosis
c. Renal failure
d. Diarrhea

20. Characteristics of enzymes are all <u>except</u>: [ ]

a. They are heat-labile
b. They are water soluble
c. They cannot be precipitated by tricholoraceticacid
d. They contain 16% weight as nitrogen

END

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES,
SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN; TIRUPATI
I MBBS
BIOCHEMISTRY PAPER-2

Date: **Duration**: 3 hours **Max. Marks**: 100

Answer all questions

Draw neat and labeled diagrams wherever necessary

I. LAQ: 2 x 15M=30M

1. Why is ammonia toxic to the body? Describe the metabolic reactions involved in the detoxification of ammonia. Add a note on the defects in the metabolic cycle associated with detoxification of ammonia. (4+7+4)
2. Explain the structure of DNA under the following headings:
   i. Using a neat and labelled diagram explain the structural organization of DNA.
   ii. Name the histone proteins.
   iii. Name the different forms of DNA. (11+2+2)

II. SAQ: 10 x 5=50M

3. Classify hormones. Discuss in detail the mechanism of action of steroid hormones. (1+4 marks)
4. What are immunoglobulins? Name the different immmunoglobulins. Discuss the structure of a normal immunoglobulin molecule. (1+1+3 marks)
5. Describe phase-2 reactions of detoxification. Explain the concept using two examples. (2+3 marks)
6. Metabolic changes occurring in the brain during starvation. (5 marks)
7. Outline the steps of polymerase chain reaction and its applications. (3+2 marks)
8. A 50-year-old patient was admitted for treatment of sore throat and pneumonia. He had poorly controlled diabetes mellitus and on admission blood urea was 140 mg/dL and serum creatinine was 2.8 mg/dL. He received 2.0 L fluid, but blood urea rose to 160 mg/dL and serum creatinine to 3.0 mg/dL. Urine output which was initially good dropped to 500 mL over a 24 hours period. Next day, he developed shortness of breath and lower extremity edema. Blood urea rose to 300 mg/dL and serum creatinine to 6.3 mg/dL.
   a. What is the probable diagnosis?
   b. Write the reference range for serum urea and creatinine levels in an adult.
   c. Define creatinine clearance.
   d. Mention atleast one formula used to calculate creatinine clearance.(1+2+1+1)
9. List out the blotting techniques. Write in brief about any one blotting technique along with applications. (2+3)
10. What are tumor markers? Outline their clinical significance. Give two examples. (1+3+1).
11. What are antioxidants? Name the enzymatic and non-enzymatic antioxidants.(1+2+2)
12. List the liver function tests. Elaborate the liver functions used to assess the synthetic function of the liver. (2 + 3)

III. Multiple choice questions: 1 x 20=20 marks

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES; TIRUPATI
SRI PADMAVATI MEDICAL COLLEGE FOR WOMEN; TIRUPATI
DEPARTMENT OF BIOCHEMISTRY
1st MBBS Paper –II MCQ'S

Date: **Time: 20mins** **Max Marks: 20 marks**

NAME OF STUDENT: **ROLL NO:**

III. Multiple choice questions **20 x 1=20Marks**

1. By heating a protein undergoes: [ ]
   A. Isomerism B. Denaturation
   C. Mutarotation D. Levorotation

2. Glucose and Mannose are: [ ]
   A. Epimers B. Anomers
   C. Stereoisomers D. Enantiomers

3. Fluidity of cell membrane is dependent on one of the following: [ ]
   A. Concentration of protein B. Membrane pumps
   C. Nature of fatty acids D. Glycosylation of protein

4. In Parkinsons's disease there is a decrease in the production of one of the following: [ ]
   A. Melanin B. Thyroxin
   C. Dopamine D. Homocysteine

5. Uric acid is the end product of one of the following: [ ]
   A. Pyrimidine metabolism B. Protein metabolism
   C. HMP shunt pathway D. Purine metabolism

6. One of the following amino acid is required for purine and pyrimidine synthesis: [ ]
   A. Phenyalanine B. Cysteine
   C. Aspartate D. Methionine

7. The two nitrogen atoms in urea are derived from: [ ]
   A. Ammonia and arginine B. Ammonia and aspartic acid
   C. Both from ammonia D. Ammonia and ornithine

8. One of the following is a tumor marker: [ ]
   A. Homocysteine B. Methotrexate
   C. Calmodulin D. Alpha-fetoprotein

9. In Artificially Acquired Active Immunity: [ ]
   A. Antigens given in vaccines B. Preformed antibodies are injected
   C. Antibodies pass from mother to fetus D. Antigens enter body naturally

[P.T.O]

10. One of the following is a ketogenic amino acid: [ ]
    A. Phenylalanine B. Valine
    C. Leucine D. Cysteine

11. If a product becomes more toxic than original compound, the process is known as: [ ]
    A. Bioactivation B. Detoxification
    C. Denaturation D. Polymorphism

12. One of the following enzyme system is involved in detoxification: [ ]
    A. Transaminase B. Carboxylase
    C. Decarboxylase D. Cytochrome P450 enzymes

13. Frame shift mutation results from: [ ]
    A. Deletion of a single base B. Substitution of a single base
    C. Promoter insertion D. Chromosomal translocation

14. One of the following is a post-transcriptional modification: [ ]
    A. Phosphorylation B. Splicing
    C. Decarboxylation D. Sorting through golgi apparatus

15. One of the following is not a Chargaff's rule: [ ]
    A. Purines equal to pyrimidines B. Base pairing of G with C
    C. Strands of DNA are antiparallel D. Base pairing of A with T

16. Steroid hormones are produced from: [ ]
    A. Linoleic acid B. Sphingomyelin
    C. Cholesterol D. Palmitic acid

17. One of the following is a second messenger : [ ]
    A. 2,3-bisphosphoglycerate B. Fructose 1,6-bisphosphate
    C. Glucose 6-phosphate D. Inositol triphosphate

18. One of the following is a non-protein nitrogenous substance: [ ]
    A. Creatinine B. Epinephrine
    C. Norepinephrine D. Serotonin

19. Bilirubin undergoes conjugation in the liver with one of the following: [ ]
    A. Hippuric acid B. UDP- Glucuronic acid
    C. Hyaluronic acid D. Albumin

20. Glucose transport across cell membrane is by: [ ]
    A. Facilitated diffusion B. Active transport
    C. Simple diffusion D. Ionophores

END

THEORY

Name of the Institute:

DEPARTMENT OF Anatomy/ Physiology/ Biochemistry

Faculty: MBBS	Year/Phase-I		Date: dd/mm/yyyy

		Formative Assessment Theory			Continuous Internal Assessment Theory						
Roll. No	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Continuous Class Test (LMS)	Seminar	Museum study	Library Assignments	Attendance Theory	Total
							Self Directed Learning				
		100	100	200	15	30	15	15	15	10	500

Professor & Head

Department of

Name of the Institute

PRACTICAL												
Name of the Institute:												
DEPARTMENT OF Anatomy/ Physiology/ Biochemistry												
Faculty MBBS		Year/Phase-I									Date: dd/mm/yyyy	
			Formative Assessment			Continuous Internal Assessment (Practical)						
S. No	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical/First Ward Leaving Examination	Prelims Practical	Log Book (150)				Journal (Record book/Portfolio)	Attendance (Practical)	Total
						Certifiable skill based competencies (Through OSPE/OSCE/Sports/ Exercise/Other)	AETCOM Competencies	SVL Lab Activity	Research			
			100	100	100	60	30	40	20	40	10	500
Professor & Head Department of Name of the Institute												

Department of Community Medicine

TABLE OF CONTENTS

GOALS AND OBJECTIVES

i) **GOAL:** The broad goal of the teaching of undergraduate students in Community Medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals.

ii) **OBJECTIVES**

a) **KNOWLEDGE** At the end of the course, the student should be able to: -

(1) Describe the health care delivery system including rehabilitation of the disabled in the country;

(2) Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control.

(3) List epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation.

(4) Apply biostatistical methods and techniques.

(5) Outline the demographic pattern of the country and appreciate the roles of the individual, family, community and socio-cultural milieu in health and disease.

(6) Describe the health information systems.

(7) Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.

(8) Identify the environmental and occupational hazards and their control.

(9) Describe the importance of water and sanitation in human health.

(10) To understand the principles of health economics, health administration, health education in relation to community.

b) SKILLS At the end of the course, the student should be able to: -

(1) Use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention.

(2) Collect, analyse, interpret, and present simple community and hospital-based data.

(3) Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs.

(4). Diagnose and manage maternal and child health problems and advise a couple and the community on the family planning methods available in the context of the national priorities.

(5) Diagnose and manage common nutritional problems at the individual and community level.

(6) Plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids.

(7) Interact with other members of the health care team and participate in the organisation of health care services and implementations of national health programmes.

c) INTEGRATION:

Develop capabilities of synthesis between cause of illness in the environment or community and individual health and respond with leadership qualities to institute remedial measures for this.

EXPLANATION OF TERMS USED IN THE MANUAL

1. LECTURE

Any instructional large group method including traditional lecture and interactive lecture.

2. SMALL GROUP DISCUSSION

Any instructional method involving small groups of students in an appropriate learning context.

3. SELF DIRECTED LEARNING

A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning, choosing, and implementing appropriate learning methods.

4. FIELD VISIST

Any visit to an organization of public health importance to observe its functioning. It may also include visits to community for family study / clinicosocial case discussion.

5.SKILL ASSESSMENT

A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients or **in the community/ field** as the context demands.

6. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

7. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know

SUGGESTED GUIDELINES FOR THE TEACHING AND LEARNING METHODS

LECTURE: Suggested topics for didactic and interactive lectures have been included along with specific learning objectives linked to each competency. Lectures should cover the core competencies with appropriate pictures, charts, or diagrams.

SMALL GROUP DISCUSSION: The topics for small group discussion that have been suggested, these topics included are those where more intensive and interactive learning sessions are required.

SELF DIRECTED LEARNING: Non-core competencies are suggested to be taken as topics for self-directed learning. At the end of the session, the teacher moderates the discussion and the learning is recorded in the logbook.

PRACTICAL DEMONSTRATION

Practical classes will include demonstration and discussion on topics of public health importance. All sessions will have specific learning objectives which are linked to the relevant competencies and are assessed as described in the assessment module.
All sessions will be done with the faculty as facilitator.

The students will be encouraged to observe the demonstrations and perform the requisite skills either independently or with assistance as required. Emphasis will be on acquiring relevant skills at the field level and clinically. Thus, case-based learning and discussions will be encouraged.

FIELD VISIT

Any visit to an organization of public health importance to observe its functioning. These may include visit to PHC, Anganwadi, DOTS Centre, Hospital Waste Management Facility, Water Treatment Plant, ART / ICTC Centre.It may also include visits to community for family study / clinic social case discussion.

FAMILY ADOPTION PROGRAMME

Family Adoption Programme Survey
Camp Guidelines

1. Institutes/colleges are requested to conduct at least one health camp under family adoption programme survey (for MBBS batch admission year 2022:23).
2. A committee under the chairmanship of Head of the institute/college is to be formed for conducting the health camps under family adoption programme survey.
3. The department of community medicine will be the nodal department for the above activity.
4. Resources required for the camp (s) to be mobilized at the level of college/institute in coordination with Community Medicine department.
5. Faculty members and Resident Doctors from other departments can also be involved in the conduction of the health camp(s).
6. Data of the health camp (s) to be maintained by the department of community medicine.
7. Institutes/Colleges to share the de-identified data of all the families adopted during family adoption programme (admission year 2022) with UGMEB of NMC in the prescribed formats before 7th August, 2024.
8. Health awareness via health talks, role-plays, rallies etc. on relevant health topics as identified by the community medicine department may be done.
9. Cleanliness, sanitation and/or plantation drives can also be planned during the health camps with involvement of local community volunteers.
10. Queries may be raised to the following e mail ID: fap.ugr.neb@,nmc.org.in

1st Professional	• Collect demographic profile of allotted families, take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the basic demographic profile of allocated family members	Family survey, Community clinics	Community case presentation, OSPE, logbook, journal of visit	6 hrs
	• Organize health check-up and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the basic health profile and treatment history of allocated family members	Community clinics, Multispecialty camps	Community case presentation, OSPE, logbook, journal of visit	9 hrs
	• Maintain communication & follow up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow-up of treatment and suggested remedial measures	Reporting of follow up visits, PRA techniques (transact walk, group discussion) Community clinics,	Community case presentation, OSPE, logbook based certification of competency, journal of visit	6 hrs
	• Take part in environment protection and sustenance activities.	By the end of this visit, students should be able to report the activities undertaken for environment protection and sustenance like study of environment of families, tree plantation/ herbal plantation activities conducted in the village	Participation in and Process documentation of activities (NSS activities) along with reporting of photographic evidences	logbook based certification of competency, journal of visit	6hrs (Total27 hrs, 9 visits)

Competencies, Specific learning Objectives, Teaching learning and Assessment methods

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Teaching hours
Topic: Concept of health and disease **No. of competencies- 10** **Total number of hours required: 18**						
CM1.1	Define and describe the concept of Public Health	K	KH	Y	Lecture	1
CM1.2	Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	K	KH	Y	Lecture	2
CM1.3	Describe the characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease	K	KH	Y	Lecture	1
CM1.4	Describe and discuss the natural history of disease	K	KH	Y	Lecture	2
CM1.5	Describe the application of interventions at various levels of prevention	K	KH	Y	Lecture	1
CM1.6	Describe and discuss the concepts, the principles of Health promotion and Education, IEC and Behavioral change communication (BCC)	K	KH	Y	Lecture	2
CM1.7	Enumerate and describe health indicators	K	KH	Y	Lecture	2
CM1.8	Describe the Demographic profile of India and discuss its impact on health	K	KH	Y	Lecture	1

CM1.9	Demonstrate the role of effective Communication skills in health in a simulated environment	S	SH	Y	SGL	3
CM1.10	Demonstrate the important aspects of the doctor patient relationship in a simulated environment	S	SH	Y	SGL	3
Topic: Relationship of social and behavioral sciences to health and disease **No. of competencies- 05** **Total number of hours required: 12**						
CM2.1	Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community	S	SH	Y	SGL	3
CM2.2	Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status	S	SH	Y	SGL	3
CM2.3	Describe and demonstrate in a simulated environment the assessment of barriers to good health and health seeking behavior	S	SH	Y	SGL	3
CM2.4	Describe social psychology, community behaviour and community relationship and their impact on health and disease	K	KH	Y	Lecture	1
CM2.5	Describe poverty and social security measures and its relationship to health and disease	K	KH	Y	Lecture	2
Topic: Environmental Health Problems **No. of competencies- 08** **Total number of hours required: 12**						
CM3.1	Describe the health hazards of air, water, noise, radiation and pollution	K	KH	Y	Lecture	1
CM3.2	Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting	K	KH	Y	Lecture	1

CM3.3	Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases	K	KH	Y	Lecture	1
CM3.4	Describe the concept of solid waste, human excreta and sewage disposal	K	KH	Y	SGL	3
CM3.5	Describe the standards of housing and the effect of housing on health	K	KH	Y	Lecture	1
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	Lecture	2
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	S	SH	Y	Lecture	2
CM3.8	Describe the mode of action, application cycle of commonly used insecticides and rodenticides	K	KH	Y	Lecture	1
Topic: Health Education **No. of competencies- 03** **Total number of hours required: 06**						
CM4.1	Describe various methods of health education with their advantages and limitations	K	KH	Y	Lecture	1
CM4.2	Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings	K	KH	Y	Lecture	2
CM4.3	Demonstrate and describe the steps in evaluation of health promotion and education program	S	SH	Y	Lecture & SGL	3(1 +2)

Distribution of Teaching Hours for I MBBS

Subject	Lectures	SGL	SDL	Total
Community Medicine	20	20	-	40
FAP	-	-	27	27

I MBBS Schedule

SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN

DEPARTMENT OF COMMUNITY MEDICINE				
1st year MBBS (Batch 2023-24) Teaching Schedule				
Date	**Time**	**Topic**	**Students Group**	**Faculty**
		1. Health definition. Dimensions of Health and changing concepts	A & B	
		1. Health definition. Dimensions of Health and changing concepts 2. Concept of Well-being, PQLI, HDI, Specturm of Health	A & B	
		1. Determinants of Health, health development 2. Indicators of health 3. Concept of Disease, Concept of Causation	A & B	
		1. Natural History of Disease 2. Concepts of prevention & control 3. Modes of intervention	A & B	
		1 Hospitals & community, Functions of physician, Community Diagnosis & treatment 2. Demography, Demographic cycles, trends (World & in India), demographic pattern in the country 3. Burden of diseases - Globally & in India	A	
		Hospital Visit	B	

Department of Community Medicine

Faculty : MBBS Year/Phase 3, part 1 Date : dd/mm/yyyy

			Formative Assessment			Continuous Internal Assessment (Practical)						
S.No.	Roll No.	Name of Student	1st PCT Practical/First Ward Leaving Examination	2nd PCT Practical /Second Ward Leaving Examination	Prelims Practical	Log book (150)			Journal (Record book/ Portfolio)	Attendance (Practical)	Total	Percentage Practical (Minimum cut off 40%)
						Certifiable skill based competencies (Through OSPE/OSCE/Spots/Exercise/Other)	Family Adoption Programme competencies in Comm. Med	AETCOM competencies				
			100	100	100	60	30	30	40	10	500	%
1												
2												
3												

S/d
Professor & Head
Department of _____
* Medical College
University
State/ U.T.

DEPARTMENT OF Community Medicine

Faculty : MBBS Year/Phase 3, part 1

			Formative Assessment_Theory			Continuous Internal assessment_Theory								Cumulative percent of Theory & Practical
S.No.	Roll No.	Name of Student	1st PCT Theory	2nd PCT Theory	Prelims Theory (Paper I & II)	Home Assignment	Seminar	Continuous Class Test (LMS)	Museum study	Library assignments	Attendance Theory	Total	Percentage Theory (Minimum cut off 40%)	Theory+ Practical = 500+500= 1000 (Minimum cut off 50%)
									Self Directed Learning					Note: Minimum 40% separately for theory and practical and 50% cumulative in IA for eligibility in Summative examination
			100	100	200	15	15	30	15	15	10	500	%	
1														
2														
3														

Summative Assessment - Assessment will be conducted at the end of instruction to check how much the student has learnt.

Formative Assessment - Assessment will be conducted during the instruction with primary purpose of providing feedback for improved learning.

Internal Assessment - Range of assessments conducted by the teachers teaching a particular subject with the purpose of knowing what is learnt. Internal assessment can have both formative and summative functions.

Theory IA includes: Written test includes essay questions, short notes and MCQs.

Practical IA includes: Practical tests, Objective Structured Practical Examination (OSPE), Directly Observed Procedural Skills (DOPS), records maintenance and attitudinal assessment.

Assessment of Log-book- Log book should record all activities like seminar, symposia, quizzes and other academic activities. It should be assessed regularly and submitted to the department. Up to ten (10) per cent IA Practical marks should be for Log book assessment.

Assessment of Practical Record book- Practical book should record all skills and other practical exercises done during the academic programme. It will be assessed regularly and submitted to the department.

Assessment for AETCOM will include: - Written tests comprising of short notes and creative writing experiences only in internal assessment

Recommended Text books-(Latest edition)

1. Park's text book of preventive and social medicine
2. Kulkarni's text book of preventive and social medicine
3. Sunderlal's text book of preventive and social medicine
4. Suryakantha's text book of Community medicine
5. Essentials of Community medicine practicals- DK Mahabalaraju
6. Nutritive values of Indian foods-C.Gopalan
7. Methods in bio-statistics – BK Mahajan
8. Text book of bio statistics – P Sundar Rao

Reference books

1. Public health and preventive medicine -Maxcy-rosenau
2. Oxford text book of public health -Oxford medical education
3. Uses of epidemiology -Morris
4. Medical statistics -Bradford and hill
5. Preventive and community medicine -Clark
6. Human nutrition and dietetics -Davidson and passmore
7. Practical epidemiology -Barker
8. Theory and practice of public health -Hobson

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS-SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

MBBS - 3rd BOARD OF STUDIES MEETING
HELD ON 24.07.2024, 25.07.2024, 30.07.2024 & 31.07.2024

Minutes of the 3rd Board of Studies (1st MBBS, 2nd MBBS, 3rd MBBS Part-I & II) Meeting held at College Council Hall, SVIMS-SPMCW on 24.07.2024, 25.07.2024, 30.07.2024 & 31.07.2024 from 10.00 AM onwards.

Members of the Board of Studies:

1.	Dr Alladi Mohan Dean SVIMS	Chairman
2.	Dr.UshaKalawat Principal, SVIMS-SPMCW	Member Secretary
3.	Dr. Aparna R. Bitla Registrar, SVIMS - Virtual	Member
4.	Dr. V. Vanajakshamma Controller of Examinations SVIMS	Member
5.	Dr. C. Sreekanth Professor & HoD Dept. of Anatomy SVIMS-SPMCW, Tirupati	Member
6.	Dr. D. Jagadeesh Babu Professor Dept. of Anatomy SVMC, Tirupati	External expert
7.	Dr. M. Sharan B Singh Professor & HoD Dept. of Physiology SVIMS-SPMCW, Tirupati	Member
8.	Dr. V S Bhagyalakshmi Professor & HOD Dept. of Physiology S.V. Medical College, Tirupati	External expert
9.	Dr. Aparna R. Bitla Professor &HoD Dept. of Biochemistry SVIMS-SPMCW, Tirupati - Virtual	Member
10.	Dr. Madhavilatha Professor & HoD Dept. of Biochemistry SVMC, Tirupati - Virtual	External expert
11.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member
12.	Dr. Ashalatha Professor & HoD, Dept of Pharmacology SVMC, Tirupati - Virtual	External expert
13.	Dr. N. Rukmangadha Professor & HoD 2nd MBBS, Coordinator Dept. of Pathology SVIMS, Tirupati	Member
14.	Dr. Janaki, Professor & HoD Dept. of Pathology Shanthi Ram Medical College, Nandyal - Virtual	External expert
15.	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member

16.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research Murakambattu, Chittoor - Virtual	External expert
17.	Dr. K. Nagaraj Professor& HoD 3rd MBBS Part-I, Coordinator Dept. of Community medicine SVIMS-SPMCW, Tirupati	Member
18.	Dr. Pankaj B Shah Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual	External expert
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru - Virtual	External expert
21.	Dr. J. Harikrishna Professor & HoD 3rd MBBS Part-II, Coordinator Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member
22.	Dr. Ravi. K Professor & HoD, Dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore - Virtual	External expert
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery ACSR Govt., Medical College, Nellore	External expert
25.	Dr.J. Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati.	Member
26.	Dr. Keshava Gangadharan Professor & HoD Dept. of OBG PES Medical College, Kuppam - Virtual	External expert
27.	Dr. S. B. Amarnath Professor & HoD Dept. of ENT, SVIMS-SPMCW	Member
28.	Dr. Ravi. D Professor & HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert
29.	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member
30.	Dr. V. Vijaya Lakshmi Professor & HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert
31.	Dr. N. Punith Patak Professor & HoD Dept. of Pediatrics, SVIMS-SPMCW	Member
32.	Dr.Vinayaka.G Professor & HoD, Dept. of Paediatrics Subbaiah Institute of Medical sciences Shimoga - Virtual	External expert
33.	Dr. S. M. Venugopal Associate Professor & HoD Dept. of Orthopaedics, SVIMS-SPMCW	Member

34.	Dr Arun H S Professor, Dept. of Orthopaedics Sri Devaraj Urs Medical College, Tamaka, Kolar - Virtual	External expert
35.	Dr. Arpana Bhide Professor, Dept. of Physiology SVIMS-SPMCW	1st MBBS Coordinator

SVIMS-SPMCW has conducted the 3rd Board of Studies (1st MBBS, 2nd MBBS, 3rd MBBS Part-I & II) Meeting for approval of the Competent Based Medical Education Curriculum notified by NMC (UGMEB) vide No.U.14021/8/2023-UGMEB, dated, 01.08.2023 for implementation of the said regulations from the Academic Year 2023 onwards in SVIMS-Sri Padmavathi Medical College for Women of SVIMS University.

MINUTES OF THE MEETING:

1. Curriculum of respective Phases were approved separately.

2. **COMMON REGULATIONS -** The Committee approved to implement Competency Based Medical Education Curriculum for MBBS course notified by NMC (UGMEB) vide No.U.14021/8/2023-UGMEB, dated, 01.08.2023 for the batches admitted in MBBS from the Academic year 2019-20, effective from the year 2023 onwards in SVIMS-SPMCW and to follow the guidelines notified by NMC from time to time.

CBME New Regulations:

1 Regulations and teaching approach as per CBME of NMC (Preamble, Objectives of the Indian Graduate Medical Training Programme, National Goals, Institutional Goals, Goals for the Learner, Competency based training programme of the Indian Medical Graduate, Lifelong learner committed to continuous improvement of skills & knowledge) — Approved

2 Phase Wise Training and Time distribution for Professional Development — Approved

- Training period, time distribution & University examinations:
- Distribution of teaching hours phase wise
- New teaching /learning elements
- Foundation Course
- Early Clinical Exposure
- Electives
- Professional Development including Attitude, Ethics and Communication Module (AETCOM)
- Learner-doctor method of clinical training (Clinical Clerkship)
- Assessment **(in the phase wise Internal Assessment marks distribution (theory & practical) provided as tables, the split up of logbook marks to be adjusted as per total marks mentioned.**
- Eligibility to appear for Professional examinations Attendance and Internal Assessment **Advised to display the results of Internal Assessment on the Notice Board within one week of the Test.**
- University Examinations
- AETCOM Question in university examination:
  - **It was resolved to include at least one question in each paper (both paper I & II) of each clinical specialty in the university examination.**
  - **The 3rd MBBS Part-I University Examinations 2024 will be held as per 2023 New NMC Regulations, that is Two subjects (Community Medicine & Forensic Medicine)**
- Appointment of Examiner

3 Readmission after discontinuation of study — Approved

4	Migration/ Transfer of candidates	Approved
5	SUBMISSION OF LABORATORY/ CLINICAL RECORD.	Approved
6	Log Book	Approved
7	Malpractice	Approved
8	Declaration of Class	Approved
9	Award of Degree	Approved
10	Academic calendar proposed by NMC Table 1: Time distribution of MBBS Program and Examination Schedule – 2023-2024 batch onwards Table 2: Distribution of subjects in each Professional Phase Table 3: Foundation Course Table 4: Distribution of Subject Wise Teaching Hours for 1st MBBS Table 5: Distribution of Subject Wise Teaching Hours for II MBBS Table 6: Distribution of Subject Wise Teaching Hours for 3rd MBBS part 1. Table 7: Distribution of Subject Wise Teaching Hours for 3rd MBBS part II. Table 8: Clinical Posting Schedules in weeks Table 9: Learner- Doctor program (Clinical Clerkship) Table 10 : Marks distribution for various subjects for University Annual Examinations Phase wise marks distribution of internal assessment – Theory & Practical	Approved

S. No.	Member		Signature
1.	Dr Alladi Mohan Dean SVIMS	Chairman	
2.	Dr.UshaKalawat Principal SVIMS-SPMCW	Member Secretary	
3.	Dr. Aparna R. Bitla Registrar, SVIMS	Member	
4.	Dr. V. Vanajakshamma Controller of Examinations SVIMS.	Member	
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6.	Dr. D. Jagadeesh Babu Professor, Dept. of Anatomy, SVMC, Tirupati.	External expert	
7.	Dr. M. Sharan B Singh Professor & HOD Dept. of Physiology SVIMS-SPMCW, Tirupati	Member	
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10.	Dr. Madhavilatha Professor & HOD Dept. of Biochemistry SVMC, Tirupati	External expert	
11.	Dr. K. Nagaraj Professor& HOD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Member	

12.	Dr. Pankaj B Shah Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual	External expert	Mail Attached
13.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member	
14.	Dr. Ashalatha Professor & HOD Dept of Pharmacology SVMC, Tirupati - Virtual	External expert	
15.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS, Tirupati	Member	
16.	Dr. Janaki, Professor & HoD Dept. of Pathology Shanthi Ram Medical College Nandyal - Virtual	External expert	Mail Attached
17.	Dr. B. Venkataramana Professor & HOD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member	
18.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor – Virtual	External expert	Mail Attached
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member	
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru – Virtual	External expert	Mail Attached
21.	Dr. J. Harikrishna Professor & Head Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member	
22.	Dr. Ravi. K Professor & Head, dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore – Virtual	External expert	Mail Attached
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member	
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert	Mail Attached
25.	Dr.J.Malathi Professor & i/c HoD Dept.of OBG, SVIMS-SPMCW Tirupati	Member	
26.	Dr. Keshava Gangadharan Professor & HOD, Dept. of OBG PES Medical College, Kuppam - Virtual	External expert	Mail Attached
27.	Dr.S.B.Amarnath Professor & i/c, HoD Dept. of ENT, SVIMS-SPMCW	Member	

28.	Dr. Ravi. D Professor & Head, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka	External expert	Mail Attached
29.	Dr.Prabhanjankumar Associate Professor & HoD i/c Dept. of Ophthalmology SVIMS-SPMCW	Member	P. Prabhanjan kumar
30.	Dr. V. Vijaya Lakshmi Professor & Head, Dept. of Ophthalmology Govt. Medical College, Guntur	External expert	Mail Attached
31.	Dr. N. Punith Patak Associate Professor & i/c HoD Dept. of Pediatrics, SVIMS-SPMCW	Member	
32.	Dr.Vinayaka.G Professor & HOD Dept. of pediatrics Subbaiah Institute of Medical sciences, Shimuga	External expert	Mail Attached
33.	Dr. Venugopal Associate Professor Dept. of Orthopaedics SVIMS-SPMCW	Member	
34.	Dr Arun H S Professor Dept. of Orthopaedics Sri Devaraj Urs Medical College, Tamaka, Kolar	External expert	Mail Attached
35.	Dr. Arpana Bhide Professor Dept. of Physiology SVIMS-SPMCW	1st MBBS Co-coordinator	7/8/24
36.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS-SPMCW, Tirupati	2nd MBBS Coordinator	
37.	Dr. K. Nagaraj Professor& HOD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Coordinator 3rd MBBS Part-I	K. Nagaraj
38.	Dr. J. Harikrishna Professor Dept. of General Medicine SVIMS-SPMCW, Tirupati	3rd MBBS Part-II Coordinator	

Pathology

	SVIMS-SPMCW, Tirupati		
12.	Dr. Pankaj B Shah Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual	External expert	
13.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member	
14.	Dr. Ashalatha Professor & HoD Dept of Pharmacology SVMC, Tirupati - Virtual	External expert	
15.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS, Tirupati	Member	
16.	Dr. Janaki, Professor & HoD Dept. of Pathology Shanthi Ram Medical College Nandyal – Virtual	External expert	
17.	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member	
18.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor – Virtual	External expert	
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member	
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru – Virtual	External expert	
21.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member	
22.	Dr. Ravi. K Professor & Head, dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore – Virtual	External expert	
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member	
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert	
25.	Dr.J.Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati	Member	
26	Dr. Keshava Gangadhara		

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS- SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

Minutes of the 3rd Board of Studies (2nd MBBS) Meeting held at College Council Hall, SVIMS-SPMCW on 25.07.2024 from 10 AM onwards.

Members of the Board of Studies:

1	Dr Alladi Mohan Dean SVIMS	Chairman
2	Dr.UshaKalawat Principal SVIMS-SPMCW	Member Secretary
3	Dr Aparna R Bitla Registrar, SVIMS - Virtual	Member
4	Dr V. Vanajakshamma, Controller of Examinations SVIMS	Member
5	Dr. N. Rukmangadha Professor & HoD 2nd MBBS Coordinator Dept. of Pathology SVIMS-SPMCW, Tirupati	Member
6	Dr. Janaki, Professor & HoD, Dept. of Pathology Shanthi Ram Medical College, Nandyal - Virtual	External expert
7	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member
8	Dr. Ashalatha Professor & HoD, Dept of Pharmacology SVMC, Tirupati - Virtual	External expert
9	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member
10	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor - Virtual	External expert

SVIMS-SPMCW has conducted the 3rd Board of Studies (2nd MBBS) Meeting for approval of the Competent Based Medical Education Curriculum notified by NMC (UGMEB) vide No.U.14021/8/2023-UGMEB, dated, 01.08.2023 for implementation of the said regulations from the Academic Year 2023 onwards in SVIMS-Sri Padmavathi Medical College for Women of SVIMS University.

Community Medicine
Dr. Pankaj

16.	Dr. Animireddy Kishore Professor. Dept. of Microbiology Apollo Institute of Medical Sciences and Research Murakambattu, Chittoor - Virtual	External expert
17.	Dr. K. Nagaraj Professor& HoD 3rd MBBS Part-I, Coordinator Dept. of Community medicine SVIMS-SPMCW, Tirupati	Member
18.	Dr. Pankaj B Shah Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual	External expert
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru - Virtual	External expert
21.	Dr. J. Harikrishna Professor & HoD 3rd MBBS Part-II, Coordinator Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member
22.	Dr. Ravi. K Professor & HoD, Dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore - Virtual	External expert
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery ACSR Govt., Medical College, Nellore	External expert
25.	Dr.J. Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati.	Member
26.	Dr. Keshava Gangadharan Professor & HoD Dept. of OBG PES Medical College, Kuppam - Virtual	External expert
27.	Dr. S. B. Amarnath Professor & HoD Dept. of ENT, SVIMS-SPMCW	Member
28.	Dr. Ravi. D Professor & HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert
29.	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member
30.	Dr. V. Vijaya Lakshmi Professor & HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert
31.	Dr. N. Punith Patak	Member

Forensic medicine

	Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual		
13.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member	
14.	Dr. Ashalatha Professor & HoD Dept of Pharmacology SVMC, Tirupati - Virtual	External expert	
15.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS, Tirupati	Member	
16.	Dr. Janaki. Professor & HoD Dept. of Pathology Shanthi Ram Medical College Nandyal - Virtual	External expert	
17.	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member	
18.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor – Virtual	External expert	
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member	
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru – Virtual	External expert	
21.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member	
22.	Dr. Ravi. K Professor & Head, dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore – Virtual	External expert	
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member	
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert	
25.	Dr.J.Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati	Member	
26.	Dr. Keshava Gangadharan Professor & HoD.	External expert	

Medicine

	Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual		
13.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member	
14.	Dr. Ashalatha Professor & HoD Dept of Pharmacology SVMC, Tirupati - Virtual	External expert	
15.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS, Tirupati	Member	
16.	Dr. Janaki, Professor & HoD Dept. of Pathology Shanthi Ram Medical College Nandyal - Virtual	External expert	
17.	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member	
18.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor – Virtual	External expert	
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member	
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru – Virtual	External expert	
21.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member	
22.	Dr. Ravi. K Professor & Head, dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore – Virtual	External expert Dr. K. Ravi MBBS, MD, FICP Professor & HOD Internal Medicine Bangalore Medical College & Research Institute Bangalore - 560 001. K.M.C. Reg. No. 33713	
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member	
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert	
25.	Dr.J.Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati	Member	
26.	Dr. Keshava Gangadharan Professor & HoD, Dept. of OBG PES Medical College, Kuppam - Virtual	External expert	
27.	Dr.S.B.Amarnath Professor & HoD Dept. of ENT, SVIMS-SPMCW	Member	
28.	Dr. Ravi. D	External expert	

Gen. Surgery

	SVIMS-SPMCW, Tirupati		
12.	Dr. Pankaj B Shah Professor & Associate Dean (Research) Dept of community medicine SRMC, Chennai - Virtual	External expert	
13.	Dr. K. Umamaheswara Rao Professor & HoD Dept. of Pharmacology SVIMS-SPMCW, Tirupati	Member	
14.	Dr. Ashalatha Professor & HoD Dept of Pharmacology SVMC, Tirupati - Virtual	External expert	
15.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS, Tirupati	Member	
16.	Dr. Janaki, Professor & HoD Dept. of Pathology Shanthi Ram Medical College Nandyal - Virtual	External expert	
17.	Dr. B. Venkataramana Professor & HoD Dept. of Microbiology SVIMS-SPMCW, Tirupati	Member	
18.	Dr. Animireddy Kishore Professor, Dept. of Microbiology Apollo Institute of Medical Sciences and Research, Murakambattu, Chittoor – Virtual	External expert	
19.	Dr. K. Jyothi Prasad Professor & HoD, Dept. of Forensic Medicine SVIMS-SPMCW, Tirupati	Member	
20.	Dr. Kilari Bhaskar Md Professor & Head Dept. of Forensic Medicine & Toxicology Government Medical College, Eluru – Virtual	External expert	
21.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	Member	
22.	Dr. Ravi. K Professor & Head, dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore – Virtual	External expert	
23.	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member	
24.	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert	20/7/21
25.	Dr.J.Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati	Member	

OBG

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS- SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

Minutes of the 3rd Board of Studies (3rd MBBS Part-II) Meeting held at College Council Hall, SVIMS-SPMCW on 30.07.2024 from 10 AM onwards.

Members of the Board of Studies:

1	Dr Alladi Mohan Dean SVIMS	Chairman
2	Dr.UshaKalawat Principal, SVIMS-SPMCW	Member Secretary
3	Dr. Aparna R. Bitla Registrar, SVIMS - Virtual	Member
4	Dr. V. Vanajakshamma Controller of Examinations SVIMS	Member
5	Dr. J. Harikrishna Professor & HoD 3rd MBBS Part-II, Coordinator Dept. of General Medicine SVIMS, Tirupati	Member
6	Dr. Ravi. K Professor & HoD, Dept. of Medicine Bangalore Medical College and Research Institute Fort, K. R. Road, Bangalore - Virtual	External expert
7	Dr. Y. Mutheeswaraiah Professor & HoD Dept. of General Surgery SVIMS-SPMCW, Tirupati	Member
8	Dr. S. Nagamuneiah, MS., Professor, Dept. of General Surgery, ACSR Govt., Medical College, Nellore	External expert
9	Dr. J. Malathi Professor & HoD Dept.of OBG, SVIMS-SPMCW Tirupati.	Member
10	Dr. Keshav Gangadharan Professor Dept. of OBG PES Medical College, Kuppam - Virtual	External expert
11	Dr. S. B. Amarnath Professor & HoD Dept. of ENT, SVIMS-SPMCW	Member
12	Dr. Ravi. D Professor & HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert
13	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member

Paediatrics

28.	Dr. Ravi. D Professor & HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert	
29.	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member	
30.	Dr. V. Vijaya Lakshmi Professor & HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert	
31.	Dr. N. Punith Patak Professor & HoD Dept. of Pediatrics, SVIMS-SPMCW	Member	
32.	Dr.Vinayaka.G Professor & HoD Dept. of Paediatrics Subbaiah Institute of Medical sciences Shimuga - Virtual	External expert	
33.	Dr. S. M. Venugopal Associate Professor & HoD Dept. of Orthopaedics SVIMS-SPMCW	Member	
34.	Dr Arun H S Professor Dept. of Orthopaedics Sri Devaraj Urs Medical College, Tamaka Kolar - Virtual	External expert	
35.	Dr. Arpana Bhide Professor Dept. of Physiology SVIMS-SPMCW	1st MBBS Co-coordinator	
36.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS-SPMCW, Tirupati	2nd MBBS Coordinator	
37.	Dr. K. Nagaraj Professor& HoD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Coordinator 3rd MBBS Part-I	
38.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	3rd MBBS Part-II Coordinator	

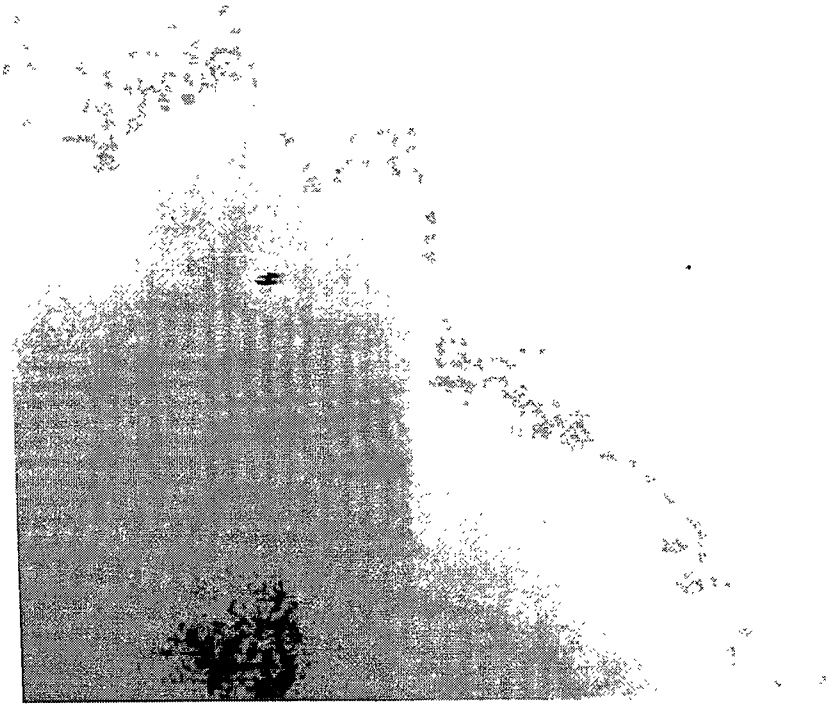
ENT

28.	Dr. Ravi. D Professor &HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert	
29.	Dr.Prabhanjankumar Associate Professor &HoD Dept. of Ophthalmology SVIMS-SPMCW	Member	
30.	Dr. V. Vijaya Lakshmi Professor &HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert	
31.	Dr. N. PunithPatak Professor &HoD Dept. of Pediatrics, SVIMS-SPMCW	Member	
32.	Dr.Vinayaka.G Professor &HoD Dept. of Paediatrics Subbaiah Institute of Medical sciences Shimuga - Virtual	External expert	
33.	Dr.S. M. Venugopal Associate Professor&HoD Dept. of Orthopaedics SVIMS-SPMCW	Member	
34.	Dr Arun H S Professor Dept. of Orthopaedics Sri DevarajUrs Medical College, Tamaka Kolar - Virtual	External expert	
35.	Dr.ArpanaBhide Professor Dept. of Physiology SVIMS-SPMCW	1st MBBS Co-coordinator	
36.	Dr. N. Rukmangadha Professor &HoD Dept. of Pathology SVIMS-SPMCW, Tirupati	2nd MBBS Coordinator	
37.	Dr. K. Nagaraj Professor&HoD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Coordinator 3rd MBBS Part-I	
38.	Dr.J. Harikrishna Professor &HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	3rd MBBS Part-II Coordinator	

Ophthalmology

	Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual		
29.	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member	
30.	Dr. V. Vijaya Lakshmi Professor & HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert	V. Vijayalakshmi
31.	Dr. N. Punith Patak Professor & HoD Dept. of Pediatrics, SVIMS-SPMCW	Member	
32.	Dr.Vinayaka.G Professor & HoD Dept. of Paediatrics Subbaiah Institute of Medical sciences Shimuga - Virtual	External expert	
33.	Dr. S. M. Venugopal Associate Professor & HoD Dept. of Orthopaedics SVIMS-SPMCW	Member	
34.	Dr Arun H S Professor Dept. of Orthopaedics Sri Devaraj Urs Medical College, Tamaka Kolar - Virtual	External expert	
35.	Dr. Arpana Bhide Professor Dept. of Physiology SVIMS-SPMCW	1st MBBS Co-coordinator	
36.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS-SPMCW, Tirupati	2nd MBBS Coordinator	
37.	Dr. K. Nagaraj Professor& HoD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Coordinator 3rd MBBS Part-I	
38.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	3rd MBBS Part-II Coordinator	

V. Vijayalakshmi



Ortho

28.	Dr. Ravi. D Professor & HoD, Dept. of ENT Mandya Institute of Medical Sciences Mandya, Karnataka - Virtual	External expert	
29.	Dr.Prabhanjankumar Associate Professor & HoD Dept. of Ophthalmology SVIMS-SPMCW	Member	
30.	Dr. V. Vijaya Lakshmi Professor & HoD, Dept. of Ophthalmology Govt. Medical College, Guntur - Virtual	External expert	
31.	Dr. N. Punith Patak Professor & HoD Dept. of Pediatrics, SVIMS-SPMCW	Member	
32.	Dr.Vinayaka.G Professor & HoD Dept. of Paediatrics Subbaiah Institute of Medical sciences Shimuga - Virtual	External expert	
33.	Dr. S. M. Venugopal Associate Professor & HoD Dept. of Orthopaedics SVIMS-SPMCW	Member	
34.	Dr Arun H S Professor Dept. of Orthopaedics Sri Devaraj Urs Medical College, Tamaka Kolar - Virtual	External expert	
35.	Dr. Arpana Bhide Professor Dept. of Physiology SVIMS-SPMCW	1st MBBS Co-coordinator	
36.	Dr. N. Rukmangadha Professor & HoD Dept. of Pathology SVIMS-SPMCW, Tirupati	2nd MBBS Coordinator	
37.	Dr. K. Nagaraj Professor& HoD Dept. of Community medicine SVIMS-SPMCW, Tirupati	Coordinator 3rd MBBS Part-I	
38.	Dr. J. Harikrishna Professor & HoD Dept. of General Medicine SVIMS-SPMCW, Tirupati	3rd MBBS Part-II Coordinator	

DR. ARUN H.S.
KMC Reg. No. 46362
Professor & Unit Chief
Department of Orthopaed
R.L. Jalappa Hospital

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES
SVIMS- SRI PADMAVATHI MEDICAL COLLEGE FOR WOMEN::TIRUPATI

Minutes of the 3rd Board of Studies (1st MBBS) Meeting held at College Council Hall, SVIMS-SPMCW on 24.07.2024 from 10 AM onwards.

Members of the Board of Studies:

1	Dr Alladi Mohan Dean, SVIMS	Chairman
2	Dr.UshaKalawat Principal SVIMS-SPMCW	Member Secretary
3	Dr Aparna R Bitla Registrar, SVIMS - Virtual	Member
4	Dr V. Vanajakshamma, Controller of Examinations SVIMS	Member
5	Dr. C. Sreekanth Professor & HOD Department of Anatomy SVIMS-SPMCW, Tirupati	Member
6	Dr. D. Jagadeesh Babu Professor Department of Anatomy SVMC, Tirupati	External expert
7	Dr. M. Sharan B Singh Professor & HoD Department of Physiology SVIMS-SPMCW, Tirupati	Member
8	Dr. V S Bhagyalakshmi Professor & HoD Department of Physiology S.V. Medical College, Tirupati	External expert
9	Dr. Aparna R. Bitla Professor &HoD Department of Biochemistry SVIMS-SPMCW, Tirupati	Member
10	Dr. N. Madhavilatha Professor & HoD Department of Biochemistry SVMC, Tirupati - Virtual	External expert
11	Dr. Arpana Bhide Professor Department of Physiology SVIMS-SPMCW	1st MBBS Coordinator

SVIMS-SPMCW has conducted the 3rd Board of Studies (1st MBBS) Meeting for approval of the Competent Based Medical Education Curriculum notified by NMC (UGMEB) vide No.U.14021/8/2023-UGMEB, dated, 01.08.2023 for implementation of the said regulations

from the Academic Year 2023 onwards in SVIMS-Sri Padmavathi Medical College for Women of SVIMS University.

The Principal, SVIMS-SPMCW welcomed all the members and initiated the proceedings as per the agenda. The Members discussed the agenda in detail and resolved as mentioned below.

MINUTES OF THE MEETING
Subject wise Curriculum – 1st MBBS

The Committee approved to implement Competency Based Medical Education Curriculum for MBBS course notified by NMC (UGMEB) vide No.U.14021/8/2023-UGMEB, dated, 01.08.2023 for the batches admitted in MBBS from the Academic year 2019-20 effective from the year 2023 onwards in SVIMS-SPMCW and to follow the guidelines notified by NMC from time to time.

Curriculum of 1st MBBS Course:

1. **Anatomy**	**Approved**
2. **Physiology**	**Approved**
3. **Biochemistry**	**Approved**
4. **Community Medicine**	**Approved** in 3rd MBBS Part-I BOS meeting held on 31.7.24

Dr. C. Sreekanth
Professor & HoD
Department of Anatomy
SVIMS-SPMCW, Tirupati

Dr. D. Jagadeesh Babu
Professor
Department 0f
Anatomy,
SVMC, Tirupati

Dr. M. Sharan B Singh
Professor & HoD
Department of Physiology
SVIMS-SPMCW, Tirupati

Dr. V S Bhagyalakshmi
Professor & HoD
Department of
Physiology
S.V. Medical College,
Tirupati

Dr. Aparna R. Bitla
Professor &HoD
Dept. of Biochemistry
SVIMS-SPMCW, Tirupati

Dr. N. Madhavilatha
Professor & HoD
Dept.t of Biochemistry
SVMC, Tirupati

Dr. Arpana Bhide
1st MBBS Coordinator
SVIMS-SPMCW

Dr.UshaKalawat
Principal
SVIMS-SPMCW

Dr V. Vanajakshamma,
Controller of
Examinations
SVIMS

Dr Aparna R Bitla
Registrar
SVIMS

Dr Alladi Mohan
Dean
SVIMS