THE TAMIL NADU
Dr. M.G.R. MEDICAL UNIVERSITY
CHENNAI - 600 032.

SECOND M.B.B.S. COURSE
REVISED (NON-SEMESTER) REGULATIONS

THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY CHENNAI

REGULATIONS FOR THE BACHELOR OF MEDICINE AND BACHELOR OF SURGERY COURSE

In exercise of the powers conferred by Section 44 of the Tamil Nadu Dr.M.G.R. Medical University, Chennai, Act, 1987 (Tamil Nadu Act 37 of 1987), the Standing Academic Board of the Tamil Nadu Dr.M.G.R. Medical University hereby makes the following regulations:

SHORT TITLE AND COMMENCEMENT

These regulations shall be called "THE REVISED (NON-SEMESTER) REGULATIONS FOR THE II M.B.B.S. COURSE OF THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI".

They shall come into force from 9th September 1998. These regulations are applicable to the students who are admitted to the course from the academic year 1998-99 onwards.

The regulations framed are subject to modification as made by the Standing Academic Board from time to time.

I. GENERAL CONSIDERATIONS AND TEACHING APPROACH

(1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative and rehabilitative aspects of medical care.

(2) With a wide range of career opportunities available today a graduate has a wide choice of career opportunities. The training, though broad based and flexible, should aim at provide an educational experience of the essentials required for health care in our country.

(3) To undertake the responsibilities of various service situations, it is essential to provide adequate placement training tailored to the needs of such services. To avail of opportunities and engage in professional activities the graduate shall ~endeavour to acquire basic training in different aspects of medical care.

(4) The importance of the community aspects of health care and of rural health care services is to be emphasised. This aspect of education and training of graduates should be adequately recognised in the prescribed curriculum. Adequate exposure to such experiences should be available throughout in all the three phases of graduate medical education and training. This has to be further intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function effectively under such settings.

(5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being concentrated on curative aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.

(6) Enough experiences must be provided for self learning. The methods and techniques that would ensure this must become a part of the teaching-learning process.

(7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban and rural environment. He/She shall endeavour to master the fundamental aspects of the subjects taught and all common problems of health and disease avoiding unnecessary details of specialization.

(8) The importance of social factors in relation to the problem of health and disease should receive proper emphasis throughout the course. To achieve this purpose the educational process should also be community based rather than only hospital based. The importance of population control and family welfare planning should be

emphasized throughout the period of training with the importance of health and development duly emphasized.

(9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgement, ability to collect and analyse information and to correlate the facts.

(10) The educational process should be placed in a historical background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and in the rest of the world should form a part of this process.

(11) Lectures alone are generally not adequate as a method of training and a means of transferring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and first hand experience. Students shall be encouraged to learn in small groups through peer interactions so as to gain maximal experience through contact with patients and the communities in which the patients live. While the curriculum Objectives often refer to areas of knowledge of science, they are best taught in a setting of clinical relevance with hands on experience for the students to assimilate and make this knowledge a part of their own working skills.

(12) The graduate medical education in clinical subjects should be based primarily on teaching in out-patient and emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.

(13) Clinics should be organized in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improving his skill and competence in handling of patients.

(14) Proper records of the work should be maintained which will form a basis for the students internal assessment. They should be available to the inspectors at the time of inspection of the college by the Medical Council of India.

(15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolving a problem. Every attempt must be made to avoid compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases.

(16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team member/leader when he begins his independent career. A discussion group should not have more than 20 students.

(17) Faculty members should avail of modern educational technology while teaching the students. To attain this objective Medical Education Units/Departments should be established in all medical colleges for faculty development and providing learning resource material to teachers.

(18) To derive maximum advantage out of this revised curriculum the vacation period of students in one calendar year should not exceed one month during the 4½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.

II. COURSE OF STUDY

(1) Every student shall undergo a period of certified study extending over 4½ academic years followed by one year of compulsory rotating internship, The Second MBBS course shall commence in July of an academic year.

(2) The period of 4½ years is divided into three phases as follows :

(a) Phase-I (I MBBS) (One year) consisting of Preclincal subjects (Human Anatomy, Physiology including Bio-Physics, Bio-Chemistry and introduction to Community Medicine including Humanities). Besides 60 hours for introduction to Community Medicine including Humanities, rest of the time shall be somewhat equally divided between Anatomy and Physiology Plus Bio-chemistry combined (Physiology $^{2}/_{3}$ and Bio-Chemistry $^{1}/_{3}$).

(b) Phase-II (II MBBS) (1½ years) consisting of para clinical/ clinical subjects.

During this phase teaching of para-clinical and clinical subjects shall be done concurrently.

The para-clinical subjects shall consist of Pathology, Pharmacology, Microbiology, Forensic Medicine including Toxicology and part of Community Medicine.

The clinical subjects shall consist of all those detailed below Phase III.

Out of the time for Para-clinical teaching approximately equal time shall be allotted to Pathology, Pharmacology, Microbiology and Forensic Medicine and Community Medicine combined. ($^{1}/_{3}$ Forensic Medicine $^{2}/_{3}$ Community Medicine.)

(c) Phase-III (III MBBS) (Two years) - Continuation of study of clinical subjects from Phase II.

The clinical subjects to be taught during Phase II and III are Medicine and its allied specialities, Surgery and its allied specialities, Obstetrics and Gynaecology and Community Medicine.

Besides clinical posting the rest of the teaching hours should be divided between didactic lectures, demonstrations, seminars, group discussions etc. in various subjects. The training in Medicine and its

allied specialities will include General Medicine, Paediatrics, Tuberculosis and Chest, Skin and Sexually Transmitted Diseases, Psychiatry, Radio-diagnosis, Infectious diseases etc. The training in Surgery and its allied specialities will include General Surgery, Orthopaedic Surgery including Physiotherapy and Rehabilitation, Ophthalmology, Oto-Rhino-Laryngology. Anaeathesia, Dentistry, Radio-therapy etc. The Obstetrics & Gynaecology training will include family medicine, family welfare planning etc.

(3) The first year (approximately 240 teaching days) shall be occupied in the Phase I (Pre-clinical) subjects.

No student shall be permitted to join the Phase II (Paraclinical/ clinical) group of subjects until he has passed in all the Phase I (Pre-clinical) subjects for which he will be permitted not more than four chances (actual examination), provided the four chances are completed within three years from the date of enrolment.

After passing pre-clinical subjects, 1-½ years shall be devoted to para-clinical subjects. Phase II will be devoted to Para-clinical and clinical subjects, along with clinical postings. During clinical phase (Phase III) preclinical and para-clinical teaching shall be integrated into the teaching of clinical subjects wherever relevant.

(4) WORKING DAYS IN AN ACADEMIC YEAR :

Each academic year shall consists of not less than 240 working days.

(5) CURRICULUM :

The curriculum and the syllabi for the course shall be as specified in the Annexure.

III. SUBMISSION OF LABORATORY RECORD NOTE BOOKS

At the time of practical/clinical examination each candidate shall submit to the Examiners his/her laboratory note books duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

The practical record shall be evaluated by the concerned Head of the Department (Internal Evaluation) and the practical record marks shall be submitted to the University 15 days prior to the commencement of the theory examinations.

The candidate may be permitted by the examiners to refer to the practical record book during the practical examination in the subject of Biochemistry only. No other materials, handwritten, cyclostyled or printed guides are allowed for reference during the practical examinations.

In respect of failed candidates the marks awarded for records at previous examinations will be carried over to the next examinations. If a candidate desires he/she may be permitted to improve his/her performance by submission of fresh records.

IV. INTERNAL ASSESSMENT

a) A minimum of Four written examinations shall be conducted in each subject during an academic year and the average marks of three best performances shall be taken into consideration for the award of internal assessment marks. Assignments completed by candidates may also be considered.

(b) A minimum of three practical examinations shall be conducted in each subject during an academic year and an average of two best performances shall be taken into consideration for award of internal assessment marks.

(c) A failed candidate in any subject should be provided an opportunity to improve his/her internal assessment marks by conducting a minimum of two examinations in theory and practical separately and average be considered for improvement.

(d) The internal assessment marks (both in written and practical taken together) should be submitted to the University endorsed by the Head of the institutions fifteen days prior to commencements of the theory examinations.

(e) A candidate should obtain a Minimum of 50% of marks in internal assessment in a subject to be permitted to appear for the University examination in that subject.

V. UNIVERSITY EXAMINATIONS

1. TIMING OF EXAMINATIONS

I professional examination : at the end of one academic year.

II professional examination : at the end of 1½ years from the commencement of Phase II.

III professional Part I examination : at the end of one year of Phase III.

III professional Part II (Final Professional) examination : at the end of 2 year of Phase III.

2. EXEMPTION IN PASSED SUBJECTS

Candidates who fail in an examination but obtain pass mark in any subject shall be exempted from re-examination in that subject.

3. CARRY OVER OF FAILED SUBJECTS

(a) Passing in First MBBS Professional examination is compulsory before proceeding to Phase II training.

(b) A student who fails in the II MBBS professional examination shall be permitted to carry the failed subjects to Phase III of the MBBS course but shall not be allowed to appear in III MBBS Professional Part I examination unless he/she passes all the subjects of the II MBBS Professional examination. Passing in II MBBS Professional examination is compulsory before entering Part II of Phase III (final year) of the course.

(c) Passing in III MBBS Professional (Part 1) examination is not compulsory before entering for Part II training; however

passing of III MBBS Professional (Part I) is compulsory for being eligible to appear for III ~MBBS Professional (Part II) examination.

(d) Revaluation of Examination papers is not permitted, however retotalling can be allowed.

VI. CLASSIFICATION OF SUCCESSFUL CANDIDATES

A. A successful candidate securing 75% or above of the marks in the aggregate in any subject in the first appearance will be declared to have passed the examination in that subject with distinction.

B. First Class may be awarded to such candidates who have passed all the subjects at the first appearance and obtained 60% of marks and above in the aggregate of all the subjects he/she had appeared in the particular phase of the ~MBBS course.

C. Candidates who have passed all the subjects at the first appearance and obtained 75% of marks and above in all the subjects he/she had appeared shall be awarded first class with distinction.

D. All other successful candidates shall be declared to have passed in second class.

VII. ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATION

a) No candidate shall be permitted to any one of the parts of MBBS Examinations unless he/she has attended the course in the subject for the prescribed period in an affiliated institution recognised by this University and produces the necessary certificate of study, attendance and progress from the Head of the Institution.

(b) A candidate is required to put in minimum 80% of attendance in both theory and practical/clinical separately in each subject before admission to the examination.

(c) A candidate lacking in the prescribed attendance a progress in any one subject in the first appearance shall be denied admission to the entire examinations.

(d) Failed candidates who are not promoted to the next phase of study are required to put in minimum 80% attendance during the extended period of study before appearing for the next examination.

(e) Attendance earned by the student should be displayed on the Notice Board of the College at the end of the course and a copy of the same should be sent to the University and parents of the student concerned.

VIII. REGULATIONS FOR CONDONATION OF LACK OF ATTENDANCE

Condonation of shortage of attendance upto a maximum 10% in the prescribed minimum attendance for admission to examination vests with the discretionary powers of the Vice-Chancellor. A candidate lacking in attendance should submit an application in the prescribed form and remit the stipulated fee 15 days prior to the commencement of the theory examination. The Head of the Department and Head the Institution should satisfy themselves on the reasonableness of the candidates request while forwarding the application with their endorsement to the Controllor of Examinations who would obtain the Vice-Chancellor's approval for admission to the examination. No application would be considered if it is not forwarded through proper channel.

Condonation for lack of attendance shall be taken up for consideration under the following circumstances :

a) Any illness afflicting the candidate. (The candidate should submit to the Head of the Institution a Medical Certificate from a registered Medical Practitioner soon after he returns to the Institution after treatment. Any candidate going on leave on medical grounds should report to the University as well as to the College immediately within 3 weeks for record.

(b) any unforeseen tragedy in the family, (The parent/guardian should give in writing the reason for the ward's absence to the Head of the Institution.)

(c) Participation in NCC/NSS and other co-curricular activities representing the institution or University. (The Head of the Institution should instruct the concerned officers in-charge of the student activities in their institution to endorse the leave application).

(d) Any other leave the Head of the Institution deems reasonable for condonation.

IX. RE-ADMISSION AFTER BREAK OF STUDY

a) Candidates having a break of study of 5 years and above from the date of admission and more than two spells of break will not be considered for re-admission.

(b) The calculation of the break of study of the candidate for re-admission be taken from the date of first discontinuance of the course instead of from the date of admission for all the courses including Under-Graduate and Post-Graduate courses.

(c) If any candidate discontinued the course due to various reasons and the break of study of the candidate is for more than ~6 months, the candidate should, get prior permission from the University for continuing the course, if the vacancy remains unfilled.

(d) Any candidate who does not appear for the examination due to lack of attendance shall be permitted to appear for the examination in the subsequent examination, if the candidate has satisfied the attendance requirements.

(e) If the candidate had completed one year and appeared for an examination during the course of study, he/she is exempted from the duration of the course and also be exempted from appearing for the examination, if he/she had passed the subject.

(f) The candidates having a break of study of 6 months and above shall apply for re-admission in the prescribed form by remitting the

stipulated fee for condonation of break of study to the Academic Officer of this University. If the period of break of study does not exceed one calender year the candidates may be re-admitted in the corresponding course of study at the commencement of the session and shall undergo a minimum period of study of 3 months and after fulfilment of the regulations of this University be admitted to the examination. The candidates shall be granted exemption in the subjects they have already passed.

(g) If the break of study exceeds one year, the candidates may be permitted to re-join the course at the beginning of the pre-clinical (Phase-I) or Clinical (Phase-II) course, as the case may be, with the condition that these candidates will have to undergo the full prescribed period of study in the pre-clinical or clinical course on re-admission and will not be granted any exemption in any subject they have already passed. They shall subscribe to the regulations of this University governing the batch, the candidate joins on readmission.

X. MIGRATION/TRANSFER OF CANDIDATES

(1) Migration from one medical college to another is not a right of a student. However migration of students from one medical college to another medical college within India may be considered by the Medical Council of India only in exceptional cases on extreme compassionate grounds, provided the following criteria are fulfilled. (Routine migrations on other grounds shall not be permitted).

(i) Both the Colleges are recognised by the Medical Council of India.

(ii) The applicant should have passed first professional ~MBBS examination.

(iii) The application for migration, complete in all respects is submitted to all authorities concerned within a period of one month of passing the first professional Bachelor of Medicine and Bachelor of Surgery (MBBS) examination, the period being counted from the date of declaration of results.

(iv) The applicant must submit an affidavit stating that he/she will pursue 18 months of prescribed study before appearing for the II professional Bachelor of Medicine and Bachelor of Surgery (MBBS) examination at the transferee Medical College. The affidavit should be duly certified by the Dean of the College concerned and the Registrar of the concerned University to which transfer if sought.

2) Further Provided that -

(i) Migration during clinical course of study will not be considered by the University.

(ii) All applications for migration will be referred to Medical Council of India by college authorities. The University will not consider request for migrations without the approval of the Medical Council of India.

(iii) The number of students migrating /transferring from one medical college to another medical College during one year will be kept to the minimum so that the training of the regular students of that college is not adversely affected. The number of students migrating/transferring from or to any one medical college shall not exceed the limit of 5% of its sanctioned intake in one year.

(iv) All Migrations/Transfers are subject.to the approval of the Vice-Chancellor of this University.

(v) The following compassionate grounds shall be considered for the purpose of Migration.

(i) Death of a supporting guardian.

(ii) Illness of the candidate causing disability.

(iii) Disturbed conditions as declared by Government in the Medical College area.

PATHOLOGY

GOAL OF THE STUDY OF PATHOLOGY

The broad goal of the teaching of undergraduate student in Pathology is to provide the students with a comprehensive knowledge of the mechanism and cause of the disease with corresponding tissue changes in order to achieve complete understanding of the natural history and clinical manifestation and to diagnose with appropriate lab investigations.

OBJECTIVES

(a) Knowledge : At the end of the course, the student shall be able to:

1) Describe the structure of a sick cell, mechanisms of cell degeneration, cell death and repair and be able to Correlate structural and functional Alterations.

2) Explain the pathophysiological process, which govern the maintenance of fluid and homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it.

3) Describe the mechanisms and patterns of tissue response to injury such that he/she can appreciate the Patho-Physiologv of diseases process and their clinical manifestations.

4) Correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases, to the extent needed for understanding of disease processes and their clinical significance.

(B) SKILLS

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

1. Describe the rational and principles of technical procedures of the diagnostic laboratory tests and interpretation of the, results:

2. Perform the simple bed side tests on blood, urine and biological fluids samples.

3. Draw a rational scheme of investigations aimed at diagnosing and managing the causes of common disorders.

Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with preclinical departments.

INTEGRATION

At the end of training he/she shall be able to integrate causes of diseases, their relationship with different etiological factors (Social, economic and environmental) that contribute to the natural history of diseases that are most prevalent in India.

II. M.B.B.S. PATHOLOGY - CLINICAL PATHOLOGY LAB-CLASS SCHEDULE - PHASE II

1. Introduction to clinical Pathology - Demonstration of sample collection.
2. Total RBC counting - demonstration and practical.
3. Total WBC counting - demonstration and practical.
4. Hemoglobin estimation - demonstration and practical.
5. Packed cell volume Demostration and discussion.
6. Differential count - demonstration and practical.
7. Peripheral smear study - discussion.
8. Erythrocyte sedimentation rate - demonstration and discussion.
9. Blood indices - discussion.
10. Blood grouping - practical and discussion.
11. Bleeding time and clotting time - practical and discussion.
12. Reticulocyte count - slide discussion.
13. Platelet count - Slide discussion.
14. Osmotic fragility test - Discussion - Demonstration.
15. Coomb's test - discussion.

16. Bonemarrow biopsy - procedure and slide discussion.
17. Sputum examination - discussion.
18. CSF examination - demonstration of procedure and cell count and discussion
19. Seminal analysis - slide discussion.
20. Exfoliative cytology - slide discussion.
21. Tissue processing - demonstration.
22. Special stains - discussion.
23. Bonemarrow charts - discussion.
24. Instruments - demonstration.
25. Examination of Urine - demonstration, discussion and practical.

II. M.B.B.S. PATHOLOGY. SYLLABUS
(PRACTICAL - BY STUDENT, DEMONSTRATION - BY FACULTY)

1. HEMATOLOGY

Introduction to Pathology;

Bonemarrow aspiration, Biopsy and cellular details

Practical

Clinical Pathology Introduction.

Demonstration :

Demonstration : Bonemarrow aspiration Instruments, Bonemarrow slides - normal

2. R.B.C DISORDERS - ANAEMIAS, CLASSIFICATION AND LABORATORY INVESTIGATIONS

Iron deficiency anaemias & Sideroblastic anaemias.

Megoloblastic anaemias

Hemolytic anaemias - Congenital and Acquired

Aplastic anaemias and symptomatic anaemias

Polycythemia

Practical :

Perform

Hb, R.B.C. Count

Iron deficiency anaemia view the slide & record

Macrocytic anaemia view the slide & record

Megaloblastic marrow view the slide & recod

Aplastic marrow, Peripheral smear study, view the slides & record.

Demonstations :

P.C.V.

Sickle cells

Thalassemia - Peripheral smear

Spherocytic anaemia

Hemoglobin Electrophoresis

Reticulocytes

Heinz bodies

3. W.B.C. DISORDERS

Leukopenia, agranulocytosis and Leukocytosis

Leukemias & Multiple myeloma

Practicals :

Total W.B.C. count

Differential count

Neutrophilia

Eosinphilia

AML, ALL, CML, CLL

Demonstations :

Guidance and questions

Cytochemical stains

4. COAGULATION DISORDERS

Vascular disorders

Platelets disorders

Coagulation factor deficiency

Practical :

Platelet counts

Demostration :

Bleeding time, Clotting time

5. BLOOD GROUP, BLOOD BANKING SYSTEM AND TRANSFUSION REACTIONS

Practical :

Blood group & RH Factor

Demonstration :

Blood Bank

Blood Bank working Pattern

6. LYMPHNODES

Specific and nonspecific lymphadenitis.

Lymphomas

Practical :

Lymphomas - specimen

Lymphomas - slides

secondary deposits (specimen) & slide.

Demonstration :

Guidance

7. SPLEEN

Splenomegaly

Practical :

CVC Spleen - Specimen & slide

CML Spleen, Gauchers spleen - specimen

Amyloidosis spleen (Amyloidosis)

Demonstration :

Guidance

General Pathology :

8 A). CELL INJURY AND CELLULAR ADAPTATIONS Etiologic factors and mechanisms, hypoxia, oxygen radical injury and hyperexis, chemical agents, radiation, Immunological mediators, infectious agents and genetic factors.

Practical : (Student)

Introduction to Histopathology and cytology Laboratory & Museum. Cloudy swelling kidney - specimen & slide

Demonstration : (Faculty activity)

Guidance slides

8 b). Reversible and irrevesible cell injury and intracellular accumulations, Pathological calcifications.

Adaptation to cell injury, Atrophy, hypertrophy, hyperplasia, hypoplasia, metaplasia and dysplasia.

Practicals :

Fatty change - Liver specimen & slide

Demonstration :

Guidance - Pathological calcification - specimen

9. INFLAMMATION :

Patterns of inflammation, acute responses and chronic responses. Humoral and cellular participants of infammation humoral elements, blood-borne cells, stromal elements

Demonstrations:

Abcess - Liver or Lung - Specimen

10. MOLECULAR BASIS OF INFLAMMATORY EVENTS :

Chemical mediators, vascular, cellular and molecular events of inflammation, regulation of inflammation.

Practicals :

Acute appendicitis Specimen and slides

Chronic inflammation, Tuberculous granuloma, Foreign body granuloma slides.

Demonstration :

Abscess - Liver or Lung - Specimen

Guidance with slides

11. Repair and regeneration Components of repair and regeneration reactions, cells of the repair process. mechanism of repair. Regeneration and healing in specific organs. E.g. Fracture Healing

Practicals :

Granulation tissue

Demonstrations :

Guidance

12. GENETICS : Introduction of Medical genetics

13. HEMOSTASIS AND THROMBOSIS.

Normal hemostasis, abnormal hemostasis - Vascular defects, platelet defects, defect of coagulation proteins, disseminated intravascular coagulation.

Thrombosis

Practicals :

Venous thrombus specimen, Organisation of thrombus slides.

Demonstration :

Thrombus in left atrium, Coronary arteries

14. CIRCULATORY DISTURBANCE

Edema, hyperemia and congestion, shock, embolism, infarction and gangrene

Practicals :

Filarial leg - specimen, CVC - Liver, Lung, Spleen - specimen and slides.

Embolus - Pulmonary - Specimen, Infarction - Heart, Lung, Specimen and Gangrene foot - Specimen.

Demonstrations :

Pulmonary edema - Specimen and slide, Shock - Kidney specimen. Gangrene intestine.

15. NEOPLASIA :

Definition & Tumour Nomenclatures. Characteristics of Neoplastic Cells.

Etiology of Neoplasia. Demographic and Familiar aspects of Cancers.

Laboratory Diagonsis.

Practicals : Benign - Lipoma, Leiomyoma, capillary and cavernous angioma schwannoma. Cystic Teratoma - Ovary, Squamous papilloma, Villous papilloma, Adenomatous polyp - Intestine, Chondroma.

Malignant - Squamous Cell carcinoma, Chondrosarcoma, Osteosarcoma, Malignanat Melanoma - All specimens and slides. Metastic Deposit - Lymphnode, Cytology - Malignant Cells.

Demonstrations :

Dysplasia F.N.A.C. - Positive slides - Guidance and slides

Cytology PAP Stain.

16. IMMUNO PATHOLOGY :

Immune responses, Atopic and Anaphylactic reactions, Cytotoxic reaction, immune complex reactions, delayed hypersensitivity granulomatous reactions.

Autoimmunity and Autoimmune diseases. Primary Immunodeficiencies, Acquired Immunodeficiency Syndrome & Amyloidosis.

Practicals :

Amyloid - Liver, Spleen, Kidney Specimens

Demonstration :

Guidance and Slides

17. NUTRITIONAL DEPRIVATION DISEASES & RADIATION INJURIES

Protein calorie Malnutrition and vitamin deficiencies.

18. INFECTIOUS DISEASES :

Bacterial Diseases - Gram +ve & gram negative infections, Typhoid, Tuberculosis, Leprosy, Syphillis, Fungal Diseases, Protozoal Diseases - Amoeba, Malaria.

Practical :

Actinomycosis. Maduramycosis Specimens and slides. Syphilis _ Gumma.

Tuberculous lymphadenitis Tuberculosis - Lung primarycomplex and adult Tuberculous. Leprosy - Lerpromatous & Tuberculoid.

Amoebic abscess (LIVER) and ulcer intestine, Malarial- Spleen. Specimens.

Demonstrations :

Guidance and slides

SYSTEMIC PATHOLOGY

19. VASCULAR SYSTEM :

Atherosclerosis, Arteriosclerosis and Aneurysms.

Practicals :

Atherosclerosis - Aorta - Specimen and slide. Aortic Aneurysms - Syphilitc and Atherosclerotic - Specimen.

Demonstration :

Slides and Guidance.

20. PATHOLOGY OF HEART :

Rheumatic Heart Disease, Bacterial Endocarditis, Myocardial Infarction, Hypertensive Heart Disease, Tumours of Heart & Blood Vessels.

Practicals :

Rheumatic mitral stenosis, Bacterial endocarditis, Myocardial Infarction, Hepertensive Cardiac Hypertrophy - Specimens.

Demonstrations :

Left Atrial myxoma specimen

21. PATHOLOGY OF LUNG :

Bronchial Asthma, Pneumonia - Bronchial & Lobar, Interstitial Pulmonary Tuberculosis, Bronchiectases and lung abcess, Pnemoconiosis, Tumours of Lungs and Pleura.

Practicals :

Lobar pneumonia - Red & Grey hepatization, Bronchiectasis - Lung abscess, pulmonay tuberculosis, Emphysema - specimen & slide, Bronchogenic carcinoma, Secondary deposit lung - specimen.

Demonstration :

Guidance with slides

22. PATHOLOGY OF GASTRO INTESTINAL TRACT.

Pleomorphic Adenoma of salivary gland, Carcinoma esophagus, peptic ulcer, gastric polyps, and gastric carcinoma. Idiopathic inflammatory bowel diseases, Tumours of small and large intestines.

Practicals :

Mixed Tumors - salivary gland specimen & slide, carcinoma - oesophagus - specimen. Gastric ulcer and carcinoma - specimen & slide Ulcers of the small intestice - typhoid Chron's large intestine, amoebic ulcer, carcinoma small & large intestines.

Demonstrations :

Guidance with slides

23. LIVER, BILIARY TRACTS AND PANCREAS

Hepatitis, Cirrhosis, Tumours of liver

Cholecystits, Gall stone, Tumour of gall bladder

Acute Pancreatitis

Practicals :

Cirrhosis - liver specimen with slides

Hepatoma - specimen with slides

Gall stone - specimen

Demonstrations

Guidance

24. KIDNEY :

Glomerulonephritis

Nephrotic Syndrome

Practicals :

Contracted kidney specimen

Chronic nephritis specimen

Demonstrations :

Guidance

Tubule - interstitial diseases

Nephrosclerosis, Renal calculi

Tumours of the kidney and the urinary bladder

Practicals :

Chronic pyelonephritis specimen & slides

Transitional cell carcinoma specimen and slides

Demonstrations :

Guidance

25. GENTIAL SYSTEM MALE :

Carcinoma penis and premalignant lesions, tumours of the testis. Prostate - benign hypertrophy and tumours.

Practicals :

Carcinoma penis - specimen and slides

Seminoma specimen and slides

B.H.P. specimen and slides

Demonstration :

Guidance E.S.T.

Malignant Teratoma

Carcinoma Prostate

26. GENITAL SYSTEM - FEMALE

Carcinoma - cervix & Premalignant lesion, tumours of the body of uterus

Endometriosis

Ovarian tumours

Trophoblastic tumours

Practicals :

Carcinoma - Cervix specimen, fibroid uterus slides

Carcinoma endometrium slide

Endometrium proliferative / slide

Endometrium secretory / slide

Serous cystadenoma - specimen & slide

Musinous cystadenoma specimen & slide

Papillary serous carcinoma specimen

Dysgerminoma

Dermoid cyst.

Demonstrations :

Guidance with slides

27. BREAST :

Tumours of the breast

Practical :

Fibroadenoma breast specimen & slide

Infiltrating ductal carcinoma specimen & slide

Demonstrations :

Guidance / other types of breast carcinoma

28. ENDOCRINE :

Thyroid / thyroiditis, goitre and tumours of thyroid

Phaeo chromocytoma and Neuroblastoma.

Pancreas - diabetes and tumours MEN

Practicals :

Colloid goitre specimen / slide

Toxic goitre specimen / slide

Follicular adenoma specimen / slide

Papillary carcinoma specimen / slide

29. SKIN :

Premalignant lesions and tumours.

Practicals:

Basal cell carcinoma specimens and slides

Squamous cell carcinoma specimens and slides

Malignant melanoma specimens and slides.

Demostrations :

Guidance.

30. SKELETAL SYSTEM :

Osteomyelitis, bone tumours.

Practicals :

Osteogenic sarcoma, giant cell tumour, Ewings sarcoma - Specimens and slides.

Demonstration :

Guidance

31. CENTRAL NERVOUS SYSTEM :

Meningitis, tumours.

Practical :

CSF in meningitis - chart.

The student's activity includes frequent symposia & group discussion, internal assessment test, model practical, viva. C.P.C. discussion modules with association of corresponding clinical faculty.

Post mortem demonstration - 10 can be intergrated with forensic department.

PATHOLOGY EVALUATION

Practical Examination :	Time...3 hrs.	Marks...40
2 Histopathology slides to identify	.....	5 marks
Morbid Anatomy... 2 specimen	.....	5 marks
Urine analysis... complete physical examination and any two abnormal constituents.	.....	10 marks

Practical II

Hematology... Major Exercise... Blood Count (R.B.C or total W.B.C and D.C with Peripheral smear report)	.....	10 marks
Hematology Minor (Hb. or Bd. GP)	.....	5 marks
Special Hematology slide / chart	.....	2½ marks
Cytology slide (Vaginal or Fluid)	.....	2½ marks
	Total	40 marks

Practical examination : A maximum of 20 candidates / day for practical exam is desiarable.

VIVA : 20 MARKS

1. General Pathology		5 marks
2. Hematology and Lymph reticular system		5 marks
3. C.V.S. RS G.I.T; & Liver		5 marks
4. G.U.T. Bone, Muscle, skin, Endocrine, Breast & C.N.S.		5 marks
	Total	20

INTERNAL ASSESSMENT - 40 MARKS

(Record - 10, Written test - 20 and Practical - 10)

PATHOLOGY THEORY EXAMINATION
2 PAPERS OF 3 HOURS DURATION, 50 MARKS EACH

Written - Paper I (General Phathology & Hematology) - 50 marks
- Paper II (Systemic Pathology) - 50 marks

Type of question	No	Time in Minutes	Marks
1. M.C.Q.	30	30	15
2. Essay question	1	40	10
3. Short Notes	10	110	25
Total		180	50

TOTAL MARKS

Theory	100 marks
Practical	40
Viva	20
Internal Assessment	40
TOTAL	200

Minimum for pass

50%in Theory

50%in Practical

50% in internal assessment

50% in Theory & Viva

II M.B.B.S. MICROBIOLOGY

GOAL :

The broad goal of the teaching of undergraduate students in Microbiology is to provide an understanding of the natural history of infectious diseases in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment, control and prevention of infections in the community.

OBJECTIVES :

Knowledge

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

i) State the infective microorganisms of the human body and describe the host parasite relationship.

ii) List the pathogenic microorganisms (bacteria, viruses, parasites, fungai and describe the pathogenesis of the diseases produced by them.

iii) State or indicate the modes of transmission of pathogenic and opportunistic Organisms and their sources including insect vectors responsible for transmission of infection.

iv) Describe the mechanisms of immunity to infections.

v) Acquire knowledge on suitable antimicrobial agents for treatment of infections and scope of immune - therapy and different vaccines available for prevention of communicable diseases.

vi) Apply methods of disinfection and sterilization to control and prevent hospital and community acquired infections.

vii) Recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.

SKILLS:

At the end of course the student will be able to

Operate and use the light compound microscope

To employ aseptic and sterile precautions while performing simple invasive procedures such as venepuncture etc.

Collect and transport appropriate clinical materials with necessary precautions for the laboratory diagosis of infectious diseases.

To perform common laboratory techniques (as given below) for the direct demonstration of microorganisms from clinical materials and interpret their findings. These should include :-

Wet preparation for Trichomonas vaginalis

KOH preparation for the identification of fungal elements

Saline and iodine preparations and concentration methods for demonstration of trophozoites, Ova or cysts in stool samples.

Prepare and stain peripheral blood for screening malarial parasites and microfilariae.

Prepare a smear and perform Gram stain on body fluids, urine and pus specimens.

Prepare a smear and perform Ziehl - Neelsen stain for demonstration of mycobacteria especially from sputum.

Perform and interpret cold staining techniques on skin smear for demonstration of M.leprae.

Interpret results of microbiological tests including antimicrobial testing for the diagnosis of common infectious diseases.

To perform and interpret a skin test.

Perform simple standard rapid tests for diagonosis of infectious diseases,

To organise the safe handling and disposal of infectious waste.

INTEGRATION:

The student will be integrated with the knowledge of Microorganisms and their pathogenicity, host response, laboratory diagnosis and epidemiology, control of diseases in the community by proper immunisation procedures.

SYLLABUS :

PART - I

I. GENERAL MICROBIOLOGY

History and mile stone in microbiology

Scope of Medical Microbiology

Microscopy

Staining of bacteria

bacterial morphology

Nutrition and growth of bacteria

Culture media and cultivation of bacteria.

Identification of bacteria and bacterial classification

Bacterial genetics

Sterilisation & Disinfection

Microbial control

Normal Microbial flora

Microbial pathogenicity and immunity

II. IMMUNOLOGY :

Host response (immunity)

Structures and functions of Immune system

Cells of immune system

Immune response/immunity

Antigen

Antibody

The complement system

Antigen antibody reactions

Hypersensitivity

Auto immunity

Histo compatibility complex

Transplantation immunity

Tumour immunity

Immuno deficiency diseases

Immuno hematology

Immunoprophylaxis against infectious diseases

III. SYSTEMATIC BACTERIOLOGY

Staphylococcus

Streptococcus

Neisseria

Corynebacteria

Bacillus

Clostridium

Nonsporing anaerobes

Mycobacteria

Actinomycetes and Nocardia

Coliform Bacteria - Escherichia coli & klebsiella

Proteus

Salmonella

Shigella

Yersinia

Pasteurella & Francisella

Hemophilus

Bordetella

Brucella

V.Cholerae

Pseudomonas

Spirochetes

Rickettsiae

Chlamydia

Mycoplasma

Miscellaneous bacteria

PART II

I. PARASITOLOGY

Introduction

Classification

General Principles of diagnosing parasites, infestations and treatment of parasitic infection.

Protozoology

Rhizopoda - Pathogenic and non- pathogenic amoebae

Mastigophora - Intestinal, blood and tissue Mastigophora

Sporozoa - Plasmodium, Toxoplasma, Isospora

Ciliate - Balantidium coli

Protozoan of uncertain classification.

5) Helminthology - Platyhelminths - Cestodes and Trematodes

Nemathelminths - Nematodes

VIROLOGY

A GENERAL VIROLOGY

Morphology of viruses

Replication of viruses

Cultivation of viruses

Classification of viruses

Assay of viruses

Identification of viruses and Lab diagnosis

Genetics of viruses

Pathogenesis and Host response to viral infections

Antiviral agents

Bacteriophage

B. SYSTEMIC VIROLOGY

DNA VIRUSES

1. Pox viruses
2. Adeno
3. Herpes
4. Papova
5. Parvo

RNA VIRUSES

6. Picorna
7. Orthomyxo
8. Paramyxo
9. Rota Viruses

10. Rhabdo Viruses
11. Hepatitis Viruses
12. Arbo viruses
13. Retro Viruses
14. Slow viruses
15. Oncogenic viruses
16. Miscellaneous viruses

GENERAL MYCOLOGY

Economic importance and harmful effects of fungi - Mycotoxins

Classifications of fungi

Pathogenesis and Lab diagnosis of mycotic infections.

SYSTEMATIC MYCOLOGY

Superficial mycosis

Cutaneous mycoses

Sub cutaneous mycoses

Systemic mycoses

Opportunistic mycosis and common lab contaminants

Antifungal agents

APPLIED CLINICAL MICROBIOLOGY

Collection, transport and disposal of specimens

Organ specific infections

Central nervous system infections

Respiratory infections - Upper / Lower

Urinary tract infections

Gastro intestinal infections - acute / chronic

Infections of bones and joints

Genital tract infections and congenital infections

Infections of the Eye, ear and skin

Infection of CVS

Systemic infections / Syndromes - PUO, Septicemias

Zoonotic infections

Environmental sanitation tests (food, water, milk and air)

Hospital infections (Prevention and control)

Basic molecular biology in relation to diagnosis of infectious diseases.

PRACTICALS

Staining - Smear preparation

Grams stain

Special Stains - Acid fast staining, Albert, Ponders, Spore, and Capsule staining.

Demonstration of culture media

Demonstration of sterilization techniques

Demonstration of bacterial motility - Hanging drop / other methods

Applied Exercises

Systematic - Indentification of the pathogen from the given clinical material based on Staining property, cultural characters, biochemical and serological tests.

Immunology - Interpretation of the given Immunological test. Agglutination - slide, tube and Passive agglutination

Precipitation - VDRL

Gel diffusion

ELISA

Mycology - Identification of the given fungus by cultural morphology and wet mount preparation / staining.

Virology - ELISA

Haemagglutination and Haemagglutination inhibition

Parasitology - Stool examination for ova and cyst Saline and odine preparation Direct and concentration techniques.

Blood smear for malarial parasite, Microfilaria and other parasite.

Identification and interpretation of the parasites (Adult and larval orms).

ICROBIOLOGY EVALUATION

Internal assessment : 40 marks

Theory - 20, Practical - 10, record - 10

Theory examination

Two papers carrying 50 marks each of 3 hours duration,

Paper I - General Microbiology, Immunology, Systematic Microbiology

Paper II - Virology, Mycology, Parasitology, applied Microbiology

UESTION PAPER PATTERN

ype of question	No	Time/minutes	Marks
1. M.C.Q.	30	30	15
2. Essay question	1	40	10
3. Short notes	10	110	25
Total		180	50

Practical examination - 40 marks

Staining, Grams & Special	10 marks
Stool examination/blood film	10
Identification of bacterial culture	10 marks
Identification of fungus	5 marks
Immunology / Virology	5 marks
Viva	20 marks

EXAMINATION EVALUATION - 200 MARKS

Theory - 50 x 2	:	100 marks
Practical	:	40
Viva	:	20
Internal assessment	:	40 (Theory : 20 + Practical : 10, Recod; 10)

Minimum for pass

50% in internal assessment

50% in Theory

50% in Theory + oral

50% in Practical

50% in aggregate

BOOKS RECOMMENDED

Practical Medical Microbiology - Mackie and Mecartney

Medical Microbiology by Jawetz

Text book of Microbiology - Ananthanarayanan and Jayaram Panicker

Text book of Microbiology - P. Charkraborty

Text book of Medical Parasitology - Jayaram Panicker

Parasitology - (Protozoology, Helminthology in relation to clinical Medicine)

K.D. Chatterjee

Essential Immunology - Ivon M.Roitt

REFERENCE BOOKS :

Diagnostic Microbiology - Bailey and Scott.

A text book of Medical Mycology - Dr. Jagdish Chander

A text book on Principles and practice of infectious diseases

Gerald L. Mandell, John E. Bennett, Raphael Dolin

PHARMACOLOGY

GOAL :

The broad goal of the teaching of undergraduate students in Pharmacology is to inculcate a rational and scientific basis of therapeutics.

II) OBJECTIVES :

KNOWLEDGE :

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

describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs:

list of indications, contraindications, interactions and adverse reactions of commonly used drugs:

indicate the use of appropriate drug in a particular disease with consideration to its cost effieasy and safety for

individual needs

mass therapy under national health programs

Describe the pharmacokinetic basis, clinical presentations,. diagnosis and management of common poisonings.

list the drugs of addiction and recommend the management.

classify environmental and occupational pollutants and state the management issues.

indicate causation in prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age.

integrate the concept of rational drug therapy in clinical pharmacology.

state the principles underlying the concept of "Essential Drugs".

Evaluate the ethics and modalities in the development and introduction of new drugs.

SKILLS :

At the end of the course, the student shall be able to.

prescribe drug for common ailments.

recognize adverse reactions and interactions of commonly used drugs.

observe experiments designed for study of effects of drugs, bio-assay and interpretation of the experimental data.

scan information on common pharmaceutical preparations and critically evaluate drug fomulations.

INTEGRATION:

Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments and pre-clinical departments.

PHARMACOLOGY SYLLABUS

I. GENERAL PRINCIPLES

a) Pharmacokinetics

b) Pharmacodynamics

c) Principles of therapeutics

d) Concepts of essential drugs and rational drug therapy

e) Special aspects of drugs in pregnancy, pertinatal pediatric and geriatric pharmacology.

f) Ethics and modalities of new drug development

g) Adverse reactions to drugs and common drug interactions.

2. DRUGS ACTING AT SYNAPTIC AND NEURO EFFECTOR JUNCTION

a) Cholinergic and anticholinergic drugs

b) Adrenergics and adrenergic blockers

c) Drugs acting at Neuromuscular Junction and autonomic ganglia.

3.OCULAR PHARMACOLOGY

4. DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

a) General anesthetics

b) Local anesthetics

c) Hypno sedatives

d) Drugs and treatment of psychiatric disorders - psychosis, depression and mania

e) Drugs in the therapy of epilepsies

f) Drugs in the therapy of migraine

g) Drugs in central nervous system degenerative disorders

h) Opioid analgesics and antagonists

i) Drug addiction and treatment

5. AUTOCOIDS

a) Histamine, Bradykinin, 5 HT and their antagonists

b) Lipid derived autocoids

c) Analgesic - antipyretic and anti inflammatory agents

6. DIURETICS AND OTHR AGENTS AFFECTING RENAL CONSERVATION OF WATER

7. DRUGS ACTING ON CARDIOVASCULAR SYSTEM INCLUDING BLOOD

a) Drugs used for treatment of Myocardial ischemia, heart failure

b) Anti arrhythmic drugs

c) Anti hypertensives

d) Lipid lowering drugs

e) Drug Therapy of shock

f) Hematopoietic agents (growth factors, minerals and vitamins)

g) Anticoagulants, Thrombolytic and antiplatelet drugs

8. DRUGS ACTING ON RESPIRATORY SYSTEM

a) Pharmacotherapy of cough

b) Pharmacotherapy of bronchial asthma

9. THERAPEUTIC GASES

10. DRUGS AFFECTING GASTROINTESTINAL FUNCTION

11. CHEMOTHERAPY

a) Chemotherapy of microbial diseases

b) Chemotherapy of parasitic infections

c) Chemotherapy of neoplastic diseases

d) Antiseptics and disinfectants

12. DERMATOLOGICAL PHARMACOLOGY

13. DRUGS USED FOR IMMUNOMODULATION

14. ENDOCRINE PHARMACOLOGY

a) Hypothalamic and pituitary hormones

b) Thyroid and antityroid drugs

c) Adreno corticosteroids and their antagaonists

d) Gonadal hormones and inhibitors

e) Panerealic hormones, and antidiabetic drugs

f) Agents that effect bone mineral homeostasis

15. ENZYMES IN THERAPY

16. VITAMINS

17. TOXICOLOGY

a) Principles of toxicology and treatment of poisoning

b) Heavy metals and antagonists

c) Non metallic environmental toxicants.

18. MISCELLANEOUS

1. Drugs used in Parkinsonism
2. Drugs used in gout and (Rheumatoid arthritis)

SYLLABUS IN PRACTICAL PHARMACOLOGY

1) Prescription writing for common ailments

2) Prescription audit

3) Patient oriented problems relating to adverse drug reactions and common drug interactions

4) Experiments designed for study of effects of drugs

5) Critical evaluation of drug formulations

6) Dosage calculations

7) Pharmaco economic problems

8) Interpretation of clinical pharmacology data

PHARMACOLOGY EXAMINATION

EXAMINATION REGULATIONS (ESSENTIALS FOR QUALIFYING TO APPEAR FOR THE EXAMINATION

The performance in essential components of training should be assessed, based on:

ATTENDANCE:

80% of attendance in a subject for appearing in the examination is compulsory, provided he/she has 80% attendance in non lecture / teaching, i.e., seminars, group discussions, tutorials, demonstrations, practical, Hospital (tertiary, secondary, Primary) postings and bed side arlinics, etc.

I. INTERNAL ASSESSMENT :

(i) It shall be based on day-to-day assessment (see note) evaluation of student assignment, preparation for seminar, clinical case presentation, etc.,

(ii) A minimum of Four written examinations shall be conducted in each subject during academic year and the average marks of three best performances shall be taken into consideration for the award of internal assessment marks. Assignments completed by candidates may also be considered.

(iii) A minimum of three practical examinations shall be conducted in each subject during an academic year and an average of two best performances shall be taken into consideration for award of internal assessment marks.

(iv) A failed candidate in any subject should be provided an opportunity to improve his/her internal assessment marks by conducting a minimum of two examinations in theory and practical separately and average be considered for improvement.

(v) The internal assessment marks (both in written and practical taken together) should be submitted to the University endorsed by the Head of the institutions fifteen days prior to the commencements of the theory examinations.

(vi) day to day records should be given importance during internal assessment.

(vii) Student must secure at least 50% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination of that subject.

NOTE:

Internal assessment shall relate to different ways in which students participation in learning process during semesters in evaluated. Some examples are as follows:-

i) Preparation of subject for student seminar

ii) Preparation of clinical case for discussion

iii) Clinical case study/problem solving exercice

iv)Proficiency in carrying out a practical or a skill in small research project Multiple choice questions (MCQ) test after completion of a system/teaching.

Each item tested shall be objectively assessed and recorded. Some of the items can be assigned as Home Work/Vacation Work.

PHARMACOLOGY PRACTICAL EXAMINATION DESIGN

PRACTICAL I - 90 MINUTES

	Marks
1. Prescription writing	5
2. Prescription audit/critical evaluation of drug formulation	5
3. Clinical problem solving exercises (Therapy oriented problems of drug adverse reaction and interaction of commonly used drugs)	5
4. Dosage calculation including Pharmaco-economic problems	5

PRACTICAL II - 90 MINUTES

1. Experiment designed for study of effects of drugs	10
2. Qualitative/Quantitative experimental pharmacology charts	5
3. Clinical pharmacology charts	5
Total Marks	40

ORAL (VIVA) EXAMINATION DESIGN

Examiner 1 :- 5 Marks

Topics

GENERAL PRINICIPLES

DRUGS ACTING AT SYNAPTIC AND NEURO EFFECTOR JUNTION

OCULAR PHARMACOLOGY

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

Examiner 2:- 5 Marks

Topics

AUTOCOIDS

DIURECTICS AND OTHER AGENTS AFFECTING RENAL CONSERVATION OF WATER

DRUGS ACTING ON CARDIOVASCULAR SYSTEM INCLUDING BLOOD

DRUGS ACTING ON RESPIRATORY SYSTEM

THERAPEUTIC GASES

DRUGS AFFECTING GASTROINTESTINAL FUNCTION

Examiner 3:- 5 Marks

Topics

1. CHEMOTHERAPY

2. DERMATOLOGICAL PHARMACOLOGY

3. DRUGS USED FOR IMMUNOMODULATION

Examiner 4:- 5 Marks

Topics

1. ENDOCRINE PHARMACOLOGY

2. ENZYMES IN THERAPY

3. VITAMINS

4. TOXICOLOGY

PHARMOCOLOGY THEORY EXAMINATION

Two papers of 180 minutes duration and 50 marks each paper

Types of Questions	No.	Time/Minutes	Marks
1. M C Q	30	30	15

Sec.A (Question will be of structured type and one will be on clinical therapeutics)

1.Essay	1	40	10
2.Short Answer	10	110	25
Total for one Paper			50

(No segregation of syllabus for each paper. Both papers to be set by the same examiner to avoid repetition of questions.)

INTERNAL ASSESMENT

(Theory-20, practical-10, record-10 40

Total Marks Allocation

Theory	50*2	100 Marks
Internal assessment		40
Practical		40
Viva		20
Total		200

Minimum for pass 50% in Theory, 50% in Theory + oral, 50% in Practical, 50% in internal assessment, 50% in Aggregate

FORENSIC MEDICINE
(INCLUDING MEDICAL JURISPRUDENCE AND TOXICOLOGGY)

GOAL

The goal of teaching Forensic Medicine to undergraduate student is to impart knowledge of legal procedures involved in practice of medical profession and to apply the knowledge of medical science for the purpose of executing justice in courts of law. Further the teaching will help the students to know of medical ethics and etiquette to be followed during the practice of medicine.

OBJECTIVES:

KNOWLEDGE:

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

Appear in a court of law as a Registered Medical Practitioner and give evidence in cases of Homicide. Assault, Sexual offences, Alcoholic intoxication, Drug dependence and other cases requiring medical opinion.

Pratice medicine in the society following medical ethics and etiquette as prescribed by the Indian Medical Council.

SKILL

1) To conduct autopsy on medico-legal cases and issue postmortem certificate. To examine cases of wound (Assault, Homicide etc.,) at the hospital and issue required medico-legal certificate (wound certificate)

To treat cases of poisoning and issue certificate to court and police.

INTEGRATION

The student will be able to integrate and apply high knowledge of anatomy, physiology, biochemistry, pathology, microbiology, medicine,

surgery and obstetrics and gynecology for the purpose of legal procedures and execution of justice.

SYLLABUS

FORENSIC MEDICINE-INCLUDING MEDICAL JURISPRUDENCE AND TOXICOLOGY

IDENTIFICATION

Definition and data to establish identity-Race, religion, sex, age, stature, complexion and features, external peculiarities, anthropometry, dactylography, and poroscopy-superimposition technique-Forensic odontology-Medico-legal importance of age and sex.

THANATOLOGY (DEATH)

Types of death-modes of death and their patho-physiology-causes of death, classification and medico-legal aspects of natural death

POST MORTEM CHANGES:

Signs of death and changes following death and their medico-legal importance-Adipocere, mummification, embalming-Estimation of post mortem interval (time of death)-Presumption of death and survivorship.

VIOLENT ASPHYXIAL DEATHS

Classification-Hanging, strangulation by ligature Throttling, Smothering, Gagging, Overlaying, Burking, Choking, Drowning and sexual asphyxia

4. DEATH DUE TO COLD, HEAT, ELECTRICITY AND RADIATION

5. ANAESTHETIC AND OPERATIVE DEATHS

6. MECHANICAL INJURIES (WOUNDS)

Classification and mechanism of wound production Abrasions, Contusions, Incised wounds, Chop wounds, stab wounds and

Lacerated wounds and their medico-legal Importance. Firearms classification and cartridges.

Firearm wounds by different firearms and their medico-legal importance- Bomb explosion wounds.

Regional injuries on the body and medico-legal importance.

Medico- legal aspects of wounds - Issue of medico - legal certificates for legal purposes.

Homicide & types of homicide.

Simple and Grievous injuries - causes of death from wounds

7. IMPOTENCE AND STERILITY

Definition, causes, and medico-legal importance

Sterilization and Artificial insemination and their medico-legal importance

8.VIRGINITY, PREGNANCY AND DELIVERY

Definition, diagnosis and medico-legal importance, Pseudocyesis, Superfecundation, Superfaelation Legitimacy and Paternity and their medico-legal importance

9.SEXUAL OFFENCES

Classification- Rape - definition, examination of victim and the accused - Incest, Unnatural sexual offences, types and their medico-legal importance. Sexual Perversion - types and their medico-legal importance - Indecent assault

Examination of seminal fluid

10. ABORTION

Definition, classification, methods of procuring abortion, diagnosis

and evidences of abortion, medico-legal questions arising in suspected cases of abortion. Medical Termination of Pregnancy Act.

11. INFANTICIDE

Definition, still birth, dead birth and live birth signs of live birth and autopsy in suspected case of infanticide

Causes of death and medico-legal importance. Abandoning of infants, concealment of birth, Battered baby syndrome, Cot death.

12. EXAMINATION OF BLOOD STAINS AND HAIR AND SUSPECTED BIOLOGICAL AND FIBRES STAINS.

13. ORGANISTION OF FORENSIC SCIENCE LABORATORY

Locard's principle; Lie detection, Narcoanalysis, Hypnosis

15. FORENSIC PSYCHIATRY

Delusion, Hallucination, Illusion, Impulse, Obsession, Delirium, Lucid interval Classification of unsoundness of mind and medico- legal aspects. Restraint of the insane.

16. MEDICO-LEGAL AUTOPSY

Protocol, Technique, Postmortem report

Examination of set of bones

Exhumation

17. TOXICOLOGY

General consideration-Law on poisons, classification of poisons. Diagnosis of poisoning in the live and dead. Duties of the medical practitioner in suspected case of poisoning. General principles of treatment of poisoning

Corrosive poisons, Non-metallic poisons, Insecticides and weed killers, Metallic poison, Organic irritant poison, somiferous poisons,

Inebriants, Deliriants, spinal poisons, food poisoning, cardiac poisons. Aspyxiants, war gases Curare, Conium. Drug dependence and Addiction.

18. MEDICAL JURISPRUDENCE

Legal Procedure - Inquests, subpoena, Conduct money, Procedure of Criminal trial, Record of evidence, types of evidence, Medical evidence, types ofwitnesses.

19. MEDICAL LAW AND ETHICS

Laws governing medical profession:-

Indian Medical Council and State Medical Council organisations, functions, and powers - Rights and privileges of Registered Medical Practitioner. Infamous Conduct. Professional negligence (malpractice)

DUTIES OF MEDICAL PRACTITIONERS.

Doctrine of Reipsa Loquitor, Contributory negligence, vicarious responsibility consent, Euthanasia.

FORENSIC MEDICINE EVALUATION

THEORY:

One paper-of 180 minutes duration and 100 marks

Type of Questions	No.	Time/Minutes	Marks
1. M.C.Q	30	30	30 (30X1)
2. Essay	2		30 (2X15)
3. Short Notes	8		40 (8X5)
			100

FORENSIC PRACTICAL EXAMINATION DESIGN
DURATION: 90 MINUTES

PRACTICAL I — Marks: 20

One of the following exercises

1. Age estimation by Physical Examination
2. Age estimation by radiological Examination
3. Examination of the case of drunkenness & issue of drunkenness certificate
4. Examination of given cluster of Bones & issue of Medico legal certificate
5. Examination of injuries and issue of Wound certificate

PRACTICAL II

	Marks
1. Fetal Examination & opinion	10
2. Viscera packing	5
3. Opinion on Sex Offence	5
4. Spotters	
a) Pathology specimen	
b) Forensic specimen	
c) Intruments	
d) Toxicology seed	
e) Toxicology plant	10
Total	30

Theory	100 marks
Practical	50
Viva	30
Internel Assessment	20
Total	200

Minimum for pass

50% in aggregate

50% in practical

50% in Internal assessment

50% in Theory

50% in Theory & Viva.

MBBS - COMMUNITY MEDICINE - SYLLABUS SEMESTER 3 TO 5

	Lectures	Practicals	Total

1. CONCEPTS IN COMMUNITY HEALTH

Health Dimensions. Positive Health. Determinants of Health, Ecology of Health. Right to Health. Indicators of Health. Health situation in India Health & Development. National Health Policy. National History of Disease. Concepts of Disease Control. Levels of prevention & intervention. Functions of a Community Physician. WHO, Disease Cooling System.

4 Hours

2. ENVIRONMENT AND HEALTH

Introduction to environment. Sources of Water Pollution. Water purification. Water quality. WHO - Standards. Surveillance of Drinking Water quality. Harrock's Test. Water sampling. Air Pollution. Indices of Thermal Comfort. Monitoring Air Pollutants. Control and prevention of pollution. Standards of ventilation. Good lighting and standards Noise pollution and control. Radiation sources and control. Air temperature measurement. Heat streets Indices, effects and control cold streets. Humidity precipitation. Housing standards. Solid wastes. Disposal Excreta disposed methods. Modern sewage treatment.

10 hours 12 hours 22 hours

3. MEDICAL ENTOMOLOGY & PARASITOLOGY

Anthropoid Borne Diseases and transmission. Bionomics of Mosquito. Mosquito Control measures. Housefly Tse tse fly. Lice. Fleas. Flea indices. Ticks and Mites. Cyclops. Control measure. Insecticides.

Rodents and Disease. Control measures. Entomology demonstrations.

2 hours 9 hours 11 hours

4. NUTRITION AND HEALTH

Definitions & concepts. Proximate Principles. Nutrients. Deficiency Diseases. Assessment. Prevention, Sources. Requirements. Nutrition Profile of Foods. Energy and requirements. Recommended Daily allowance. Protein assessment. Dietary Goals. Community Nutrition problems. LBW. PEM. IDD. Fluresis. Anemia. Nutritional Status Assessment. Nutritional Surveillance. Growth monitoring. Nutritional Status indicatory. Ecology of malnutrition. Prevention. Food Surveillance. Food toxicants. Food Borne diseases. Food adult iteration. National Nutrition Programmes Nutrition Assessment schedule. Nutrition problem exercises.

10 hours 9 hours 19 hours.

5. HEALTH EDUCATION & COMMUNICATION

Definition. Objectives. Approaches and Principles of Health Education.

Practices of Health Education. Planning & Evaluation. Administrations and Organizations in India. Health Education Demonstration in a community.

2 hours 3 hours 5 hours.

6. PRIMARY HEALTH CARE

Concepts. Health care systems. Levels of Health Care. PHC-Elements. Principles. Health for All Goals. Health problems of India. National Health Policy. Primary Health care in India. PHC-Community Health centre. Health Insurance. Voluntary Health Agencies. National Health Programmes

4 hours 6 hours 10 hours.

7. INTERNATIONAL HEALTH SYSTEMS

Historical development of Health Organisations. WHO-objective. Structure. Functions. U.N. Agencies. Bilateral Agencies. N.G. Agencies,

2 hours --- 2 hours

8. PRINCIPLES OF EPIDEMIOLOGY

Aims. Diseases frequency. Distribution, determinants. Clinical epidemiology. Basic measurements in Epidemiology. Rates and Ratios Standardisation. Epidemiological methods. Descriptive, Analytical, experimental Epidemiology. Association and causation. Epidemiology uses. Immunity. Infectious Diseases. Epidemiology. Investigation of epidemic.

Disinfection. Diseases prevention and control. Immunizing Agents. Epidemiology problems.

8 hours 15 hours 33 hours.

9. SCREENING FOR DISEASES

Concepts. Uses. Criteria. Sensitivity Specificity. Borderline problems. Epidemiological problems.

2 hours 9 hours 10 hours

10. MEDICAL STATISTICS

Health information systems. Components, uses, services. Population Health Data Surveys. Elementary Statistical Methods. Tabulation. Charts, Statistical Averages. Measures of dispersion, Normal distribution. Chi-Square Test. Correlation and progression. Statistical problems.

2 hours 18 hours 20 hours.

11. EPIDEMIOLOGY OF COMMUNICABLE DISEASES

Chicken Pox. Measles, Influenza, Diphtheria, Pertusis. Menigitis, Tuberculosis, Mumps, Rubella, Acute respiratory infections. Small Pox eradication. Poliomyelitis, Cholera. Viral Hepatitis. Amoebiasis, Ascariasis Ancylostamiosis. Dracunculosis. Food poisoning, Typhoid, Acute diarrhoea diseases. Malaria, Filaria, Dengue, Rabies, Yellow fever, Japanese Encephalitis, KFD, Brucellas, Plague, Human Salmonellosis, Trachoma Tetanus, Leprosy, STD, AIDS, Yaws,

Leishmaniasis. Hydatid Diseases, Typhus Ricke tsial, Zoonosis, Taeniasis. Emerging Infectious Diseases, Epidemiological exercises.

10 hours 21 hours 31 hours

Clinic-Social Case studies

-- 21 hours 21 hours

Family Health Survey, Survey * and community diagnosis

-- 21 hours 21 hours

56 hours 144 hours 200 hours

BLOCK POSTINGS - I (III SEMESTER) - TOTAL HOURS 72 HOURS

Sl.No.	Exercises
01. Environment Health Model and Demonstration	..6 hours
02. Entomalogy specimens demonstration	..6 hours
03. Parasitilogy, Bacteriology specimens	..6 hours
04. Insecticides, Disinfectants and Ralenticides.	..3 hours
05. Nutrition specimens	..6 hours
06. Meterological instruments	..3 hours
07. Environment Health statistical problems	..3 hours
08. Water and Nutrition problems	..3 hours
09. Epidemiological exercises	..6 hours
10. Introduction to Clinico-Social case studies	..6 hours

11. Family Health Survey, Methodology and community diagnosis. ..6 hours
12. Community Survey ..6 hours
13. Data Analysis and writeup ..6 hours
14. Pure statistics methodology ..6 hours
15. End posting evaluation - Theory ..3 hours
16. End post evaluation - Practicals ..3 hours

Total Block Posting I ..72 hours

(IV SEMESTER) BLOCK POSTING - II - 72 HOURS

01. Demography and statistical problems ..6 hours
02. Demonstration - Vaccines cold chain equipment ..6 hours
03. Statistical and Epidemiological problems ..6 hours
04. Visit to a P.H.C. ..3 hours
05. Visit to a sub-centre ..3 hours
06. Health education demonstration in a urban slum population. ..3 hours
07. Community Survey in a urban population ..6 hours
08. Data Analysis and wite up ..6 hours
09. Clinic Social Case studies - ANC., PNC., Medical termination of preganancy case, protein-energy malnutrition, Scabies, Fungal infection, Diarrhoeal disease, Upper respiratory infection, leprosy, Tuberculosis, STD, Filariasis, obesity, Hypertension, Diabetes, Cancer early stage, family planning case counselling...15 hours
10. Project report analysis and preparation ..12 hours
11. End posting evaluation - Practicals ..3 hours
12. End posting evaluation - Theory ..3 hours

Block posting-II ..72 hours