

BIHAR UNIVERSITY OF HEALTH SCIENCES, PATNA

SYLLABUS OF MICROBIOLOGY MBBS

PAPER-I

(General Microbiology, Systemic Bacteriology & Immunology)

Section A (General Microbiology, & Immunology)

I. General Microbiology

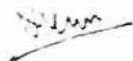
- a. Introduction to Microbiology
- b. General concept, scope of Microbiology
- c. Significant milestones in the history of Microbiology
- d. Microscopy- Types and Principles
- e. Normal human flora
- f. Concept of microorganism causing infection
- g. Collection and transportation of specimens
- h. Sterilization and Disinfection

II. General Bacteriology

- a. Introduction to Bacteriology
- b. Eukaryotes and Prokaryotes- Structure and function
- c. Bacterial morphology and physiology
- d. Bacterial Nomenclature and Taxonomy
- e. Bacterial Staining and Cultivation
- f. Common Tests for Bacterial Identification
- g. Bacterial Genetics, antimicrobial agents and resistance mechanism
- h. Host parasite relationship- epidemiological basis of common infectious diseases

III. Immunology

- a. Basic principles of immunity
- b. Structure and function of immune system
- c. Antigens- presentation and association in immunity
- d. Immunoglobulins and their role in immunity
- e. Complement system
- f. Antigen-Antibody reaction and their applications.
- g. Immune response
- h. Hypersensitivity
- i. Immunodeficiency state
- j. Autoimmunity



- k. Immunology of Transplantation & Malignancy
- l. Immunology basis of Vaccine, Universal immunization schedule.

Section B (Systemic Bacteriology)

1. Introduction to systemic infections
2. CVS and Blood
 - a. Rheumatic fever-*Streptococcus pyogenes*
 - b. Infective endocarditis-The Viridans group, HACEK group
 - c. Enteric fever-Salmonella Typhi, *S. paratyphi* A, B
 - d. PUO-Brucella, *Leptospira interrogans*, Relapsing fever, Rickettsia, Scrub Typhus
3. Gastrointestinal and hepatobiliary system
 - a. Introduction to Enterobacteriaceae
 - b. Diarrhea/Dysentery *E. coli*, *Shigella*, *V. cholerae*
 - c. Food Borne pathogens(*S. aureus*, NTS, *V. parahaemolyticus*, *B. cereus*, *Cl. botulinum*, *Cl. perfringens*, *C. jejuni*, *Y. enterocolitica*)
 - d. Acid peptic disease – *H. pylori*
 - e. Antibiotic associated diarrhea- *Clostridioides difficile*
4. Musculoskeletal system skin and soft tissue infections
 - a. Pyogenic- *Staphylococcus*, *Streptococcus*, *Pseudomonas*, *V. vulnificus*, *V. alginolyticus*
 - b. Gas gangrene-*Cl. perfringens*
 - c. Non sporing anaerobes
 - d. Melioidosis- *Burkholderia pseudomallei*
 - e. Leprosy- *M. leprae*
 - f. Non venereal Treponemes (Yaws, Pinta, Endemic Syphilis)
 - g. Other: *Actinomyces* and *Nocardia*, *M. ulcerans*, *M. marinum*
5. Central Nervous System infections
 - a. Pyogenic meningitis- *Streptococcus pneumoniae*, *H. influenza*, *N. meningitidis*, *Streptococcus agalactiae*, *L. monocytogenes*, Enterobacteriaceae
 - b. TBM-*Mycobacterium tuberculosis*
 - c. Tetanus-*Cl. Tetani*
 - d. Aseptic meningitis-*Leptospira*
 - e.
6. Respiratory tract infections
 - a. URTI- *Streptococcus pyogenes*, *C. diphtheriae*
 - b. LRTI-*Streptococcus pneumoniae*, *H. influenzae*, *K. pneumoniae*
 - c. Tuberculosis-*Mycobacterium tuberculosis*

- d. NTM
- e. Whooping cough-*B. pertussis*
- f. Atypical pneumonia-*L. pneumophila*, *Mycoplasma pneumoniae*, *C. pneumoniae*

7. Genitourinary & Sexually transmitted infections

- a. Uropathogens (*E.coli*, *Klebsiella*, *Pseudomonas*, *Proteus*, *Enterococcus*, *S. saprophyticus*)
- b. Gonorrhoea -*N. gonorrhoeae*
- c. NGU
- d. Genital ulcer-*T.pallidum*, *Klebsiella granulomatis* (*Calymmatobacterium granulomatis*), *H. ducreyi*, *Chlamydia trachomatis*
- e. Bacterial vaginosis

8. Zoonotic diseases and miscellaneous

- a. Brucellosis
- b. Anthrax-*B. anthracis*
- c. Plague-*Y. pestis*
- d. Lyme's disease-*Borrelia burgdorferi*
- e. Leptospirosis-*Leptospira interrogans*
- f. Relapsing fever
- g. Rickettsial diseases
- h. Glanders- *Burkholderia mallei*
- i. Melioidosis- *Burkholderia pseudomallei*

9. Health care associated infections and Biomedical waste management

- a. *ESKAPE pathogens*
- b. *Burkholderia cepacia complex*, *Stenotrophomonas*
- c. BMWM
- d. Infection control practices-Hand washing, Decontamination, Use of PPEs, Air borne precautions, Contact Precautions
Infection Control Committee

10. Bacteriology of water, food, and air




BIHAR UNIVERSITY OF HEALTH SCIENCES, PATNA

SYLLABUS OF MICROBIOLOGY MBBS

PAPER-II

[Virology, Parasitology & Mycology]

Section A [Virology]

- I. General Virology**
 - a. General properties of Virus
 - b. Taxonomy and Classification
 - c. Host viral interactions
 - d. Overview of viral infection, specimen collection and diagnosis
 - e. Bacteriophages
- II. CVS and Blood**
 - a. AIDS-HIV
 - b. Dengue, Chikungunya, KFD
- III. Gastrointestinal and hepatobiliary system**
 - a. Viral Hepatitis
Viral Gastroenteritis – Rotavirus, Norovirus, Astrovirus, Calicivirus, Adenovirus 40,41
- IV. Musculoskeletal system skin and soft tissue infections**

Exanthematous Disease – Measles, Rubella, HSV 1, 2, VZV, HHV6, Poxvirus, Parvovirus
- V. Central Nervous System infections**
 - a. AES- Herpes virus, Rabies, mumps, JE, Dengue, Chikungunya, WestNile, Enterovirus 68-71, Poliovirus, ECHOvirus, coxsackievirus,
 - b. Diseases by slow viruses and Prions
- VI. Respiratory tract infections**
 - a. URTI-Adenovirus, Rhinovirus
 - b. LRTI-Influenza, Para influenza, RSV, Coronavirus
- VII. Genitourinary & Sexually transmitted infections**

Genital Herpes, genital warts
- VIII. Zoonotic diseases and miscellaneous**
 - a. Oncogenic viruses- EBV, HHV8, HHV6, Hep B,C, HPV, CMV, HTLV
 - b. Zoonotic diseases and Emerging viruses - Rabies, KFD, Ebola, Swine flu, Avian flu, CCHF, Zika, Nipah, SARS, MERS



Section B (Parasitology & Mycology)

1. General Parasitology and Mycology

- a. Taxonomy and classification of protozoans and helminths
- b. Concept of life cycles
- c. Overview of parasitic infections, and laboratory diagnosis
- d. Taxonomy and classification of fungus and fungal diseases
- e. Morphology of fungi and reproduction
- f. Overview of diagnosis of fungal infections, specimen collection and diagnosis

1. CVS and Blood

- a. Malaria, lymphatic filariasis, Visceral Leishmaniasis
- b. Anemia causing parasite- hookworms, *D. latum*

2. Gastrointestinal and hepatobiliary system

- a. Protozoa: Entamoeba, Giardia, Balantidium, Coccidian parasites, Microsporidia
- b. Intestinal Nematodes- Ascaris, Enterobius, Trichuris, Strongyloides
- c. Intestinal Cestodes- Echinococcus, Taenia, Hymenolepis
- d. Intestinal Trematodes- *F. hepatica*, *F. buski*, *S. japonicum*, *S. mansoni*

3. Musculoskeletal system skin and soft tissue infections

- a. Trichinellosis
- b. Cutaneous leishmaniasis
- c. PKDL
- d. Tissue nematodes and larva migrans
- e. Superficial mycosis
- f. Subcutaneous mycosis

4. Central Nervous System infections

- a. Toxoplasmosis
- b. Neurocysticercosis
- c. Amoebic meningoencephalitis
- d. Cryptococcosis

5. Respiratory tract infections

- a. Paragonimiasis
- b. Systemic mycosis
- c. Aspergillosis
- d. Pneumocystis pneumonia

6. Genitourinary & Sexually transmitted infections

- a. Trichomoniasis
- b. Genitourinary candidiasis
- c. Urinary schistosomiasis

7. Zoonotic diseases and miscellaneous

- a. Opportunistic fungal infection- candidiasis, penicilliosis, zygomycosis
- b. Parasitic zoonotic infection- taeniasis, echinococcosis, toxoplasmosis, leishmaniasis

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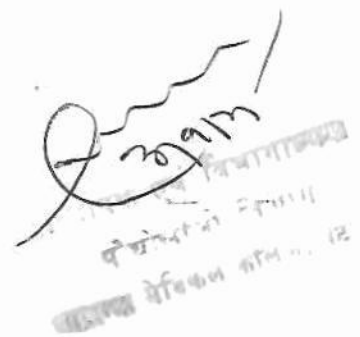
BIHAR UNIVERSITY OF HEALTH SCIENCES, PATNA

Syllabus of Pathology MBBS

Paper-1

General Pathology

1. Introduction to pathology
2. Cell injury and Adaptation-
 - a) Cell injury: Causes and Mechanism: Ischemic, Toxic.
 - b) Reversible cell injury : Types, morphology: Swelling, vacuolation, hyaline, fatty change.
3. Amyloidosis-
 - a) Calcification : Dystrophic and Metastatic
 - b) Amyloidosis : classification, Pathogenesis, Morphology
4. Inflammation and repair -
 - a) Acute inflammation : Features, causes, vascular and cellular events.
 - b) Morphologic variants of acute inflammation
 - c) Inflammatory cells and Mediators
 - d) Chronic inflammation : Causes, types, nonspecific and Granulomatous with examples
 - e) Wound healing by primary and secondary union, factors promoting and delaying the process
 - f) Healing at specific sites including bone healing
5. Hemodynamic and disorders-
 - a) Edema : Pathogenesis and types
 - b) Chronic venous congestion : Pathogenesis and changes in Lung, Liver, Spleen
 - c) Thrombosis and Embolism : Formation, Fate and Effects
 - d) Infarction : Types, common sites, Gangrene
 - e) Shock : Pathogenesis, Types, Morphologic changes
 - f) Derangements of Fluid and electrolyte imbalance
6. Growth Disturbances and Neoplasia-
 - a) Atrophy, Hypertrophy, Hyperplasia, Hypoplasia, Metaplasia, Malformation, Agenesis, Dysplasia
 - b) Neoplasia : Classification, Histogenesis, Biologic Behaviour : Benign and Malignant; Carcinoma and Sarcoma
 - c) Malignant Neoplasia : Grades and Stages, Local and distant spread
 - d) Carcinogenesis : Environmental carcinogens, chemical, viral, occupational, Heredity and cellular oncogenes
 - e) Tumour and Host Interactions : Systemic effects including paraneoplastic syndromes, Tumor immunology
 - f) Laboratory diagnosis : Cytology, Biopsy, Tumor markers
7. Basic diagnostic cytology



बिहार विश्वविद्यालय
स्नातकोत्तर विभाग
पथology
परीक्षा केंद्र, पटना-800 001

8. Immunopathology and AIDS-
 - a) AIDS : Aetiology, modes of transmission, diagnostic procedures and handling of infected material and health education.
9. Infections and Infestations-
 - a) Tuberculosis, Leprosy and Syphilis
10. Genetic and paediatric diseases-
 - a) Genetic diseases
11. Environmental and nutritional disease-
 - a) Disorders of Pigment and Mineral metabolism such as bilirubin, melanin, hemosiderin

Haematology and Clinical Pathology

12. Introduction to haematology-
 - a) Constituents of blood and bone marrow, Regulation of hematopoiesis
 - b) Anaemia : classification and clinical features; clinical and lab. approach to diagnosis f)
 - c) Nutritional anaemias : Iron deficiency anaemia, Folic Acid/Vit B 12 deficiency anaemia including pernicious anaemia
 - d) Hemolytic Anaemias : Classification and investigation
 - e) Hereditary hemolytic anaemias : Thalassemia, sickle cell anaemia
 - f) Hereditary hemolytic anaemias : hereditary spherocytosis, G-6-PD deficiency
 - g) Hemostatic disorders : Platelet deficiency; ITP, Drug induced, secondary
 - h) Coagulopathies : Coagulation factor deficiency; hemophilia, DIC and anticoagulant control
 - i) Leukocytic disorders : Leukocytosis, leukopenia, leukemoid reaction
 - j) Acute and chronic Leukemia : Classification, Diagnosis
 - k) Multiple myeloma and dysproteinemias
 - l) Blood transfusion : grouping and cross matching, untoward reactions, transmissible infections including HIV and hepatitis
 - m) Blood groups
 - n) Indications of blood transfusion
 - o) Blood component therapy
 - p) Transfusion reactions





राजस्थान चिकित्सा एवं स्वास्थ्य विभाग
 जयपुर
 राजस्थान चिकित्सा एवं स्वास्थ्य विभाग, जयपुर

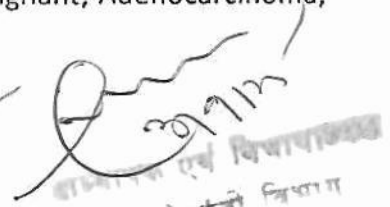
BIHAR UNIVERSITY OF HEALTH SCIENCES, PATNA

Syllabus of Pathology MBBS

Paper-2

General Pathology

1. Cardiovascular Pathology
 - a) Rheumatic fever and Rheumatic Heart Disease : Pathogenesis, Morphology and effects
 - b) Infective Endocarditis : Causes, Pathogenesis and Morphology
 - c) Atherosclerosis and Ischemic Heart Disease; Myocardial Infarction
 - d) Hypertension and Hypertensive Heart Disease
 - e) Pericarditis and other pericardial diseases
 - f) Cardiomyopathy
2. Respiratory Pathology
 - a) Inflammatory diseases of bronchi : chronic bronchitis, bronchiectasis & chronic obstructive lung disease
 - b) Pneumonias : Lobar, Broncho, Interstitial
 - c) Pulmonary suppuration including lung abscess : Etiopathogenesis and Morphology
 - d) Pulmonary Tuberculosis : Primary and Secondary, Morphologic types including pleuritis
 - e) Emphysema : Types, pathogenesis
 - f) Tumors : Benign; Carcinoid, Malignant; Squamous cell, Oat cell, Adeno, etiopathogenesis.
 - g) Occupational lung disorders : anthracosis, silicosis, asbestosis, mesothelioma
3. Urinary Tract Pathology
 - a) Renal structure, basis of impaired function, urine analysis
 - b) Glomerulonephritis : Classification, Primary Proliferative and Non Proliferative
 - c) Secondary Glomerulonephritis : SLE, Purpura, Polyarteritis, Amyloidosis, Diabetes
 - d) Nephrotic Syndrome
 - e) Acute Renal Failure : Acute tubular and cortical necrosis
 - f) Progressive renal failure and end stage renal disease
 - g) Pyelonephritis, Reflux Nephropathy, Interstitial Nephritis
 - h) Renal tumors : Renal cell carcinoma, Nephroblastoma
 - i) Renal vascular disorders, kidney changes in Hypertension
 - j) Urinary bladder : cystitis, carcinoma
4. Pathology of the Gastro-Intestinal Tract
 - a) Oral Pathology : Leukoplakia; Carcinoma oral Cavity and Esophagus
 - b) Salivary gland tumors : Mixed, Adenoid cystic, Warthin's
 - c) Peptic ulcer : Etiopathogenesis and complications; gastritis: types
 - d) Tumors of stomach : Benign; Polyp, Leiomyoma, Malignant; Adenocarcinoma, Lymphoma



राजधानी एवं विभागाध्यक्ष
पथोलॉजी विभाग
राजकीय चिकित्सक, बिहार, पटना

- e) Inflammatory bowel disorders.
 - f) Tumours and Tumor like condition of the large and small intestine : Polyps, Carcinoid, Carcinoma, Lymphoma
 - g) Pancreatic tumors : Endocrine, Exocrine and periampullary
5. Liver and Biliary Tract Pathology
- a) Jaundice : Types, Pathogenesis and Differentiation
 - b) Hepatitis : Acute and Chronic, Etiology, Pathogenesis and Pathology
 - c) Cirrhosis: Etiology, Postnecrotic, Alcoholic, Metabolic, Pathology, Morphology (Macronodular, Micronodular, Mixed), complications
 - d) Tumors of Liver : hepatocellular and metastatic carcinoma, tumor markers
 - e) Diseases of the gall bladder : Cholecystitis, Cholelithiasis, Carcinoma
6. Lymphoreticular System
- a) Hodgkin's and Non-Hodgkin's Lymphomas : Classification, Morphology
 - b) Diseases of the spleen : Splenomegaly causes and effects
7. Reproductive System
- a) Diseases of cervix : cervicitis, cervical carcinoma, etiology, types and cytologic diagnosis
 - b) Diseases of uterus : endometritis, endometrial hyperplasia and carcinoma, adenomyosis, smooth muscle tumors
 - c) Ovarian & Trophoblastic tumors.
 - d) Diseases of the breast : Mastitis, abscess, Fibrocystic disease, Neoplastic lesions : Fibroadenoma, Carcinoma, Phyllodes tumor
 - e) Prostate : Nodular Hyperplasia and Carcinoma g) Ovarian and testicular tumors
8. Osteopathology
- a) Osteomyelitis : Acute, Chronic, Tuberculous, Mycetoma
 - b) Metabolic bone disease: Rickets/Osteomalacia, Osteoporosis, Hyperparathyroidism
 - c) Tumors : Primary, Osteosarcoma, Osteoclastoma, Ewing's Sarcoma, Chondrosarcoma; Metastatic
9. Endocrine Pathology
- a) Diabetes Mellitus : Types, Pathogenesis, pathology
 - b) Nonneoplastic lesions of thyroid : Iodine deficiency goiter, autoimmune thyroiditis, thyrotoxicosis, myxedema
 - c) Tumors of thyroid – adenoma, carcinoma : Papillary, Follicular, Medullary, Anaplastic
10. Neuropathology
- a) Structural Organization, specific cell types, and reaction patterns
 - b) Inflammatory disorders : Pyogenic and tuberculous meningitis, brain abscess, tuberculoma
 - c) CNS tumors – primary : glioma and meningioma (excluding histopathology) and metastatic
 - d) CSF and its disturbances : cerebral edema, raised intracranial pressure

BIHAR UNIVERSITY OF HEALTH SCIENCES ,PATNA

PHARMACOLOGY SYLLABUS FOR MBBS STUDENTS

BASED ON NMC GUIDELINES

PHARMACOLOGY THEORY

PAPER 1

1. General pharmacology

- ❖ General concepts and definitions in pharmacology
- ❖ Routes of drug administration
- ❖ Pharmacokinetics:absorption,distribution,metabolism and excretion and clinical pharmacokinetics
- ❖ Pharmacodynamics:mode and site of drug action ,receptors and their basic principles, Types and clinical significance, factors modifying drug action
- ❖ Drug combinations :rational and irrational synergism ,antagonism
- ❖ Pharmacology of drugs in geriatric,pediatric and special situations such as Pregnancy, lactation,hepatic and renal disorders etc.
- ❖ Adverse drug reactions and pharmacovigilance
- ❖ Management of drug interactions
- ❖ Essential medicines and rational use of medicines ,evidence based medicine, new drug development process.

2. Autonomic nervous system(ANS) and peripheral nervous system

- ❖ Adrenergic and antiadrenergic system
- ❖ Cholinergic ,anticholinergic and management of OPC poisoning, glaucoma and myasthenia gravis
- ❖ Rationale and emergency use of various sympathetic/parasympathetic drug agonists/antagonists in case based scenarios.
- ❖ Skeletal muscle relaxants ,ganglion stimulants and blockers



- ❖ Local anaesthetics

3. cardiovascular system(CVS)

- ❖ Drugs for hypertension
- ❖ Pharmacologic management of hypertension with diabetes, pregnancy induced hypertension ,hypertensive emergency and urgency
- ❖ Pharmacotherapy of ischemic heart disease (angina ,Myocardial infarction), peripheral vascular disease
- ❖ Pharmacotherapy of heart failure, its management and prevention of complications
- ❖ Pharmacotherapy of cardiac arrhythmias ,management Of supraventricular ,ventricular arrhythmias ,cardiac arrest and fibrillation
- ❖ Drugs modulating renin angiotensin aldosterone system
- ❖ Drugs for dyslipidemia

4. Kidney

- ❖ Diuretics ,antidiuretics, vasopressin and analogues

5. antimicrobials,chemotherapy of neoplastic diseases

- ❖ General principles of chemotherapy and drug resistance
- ❖ Rational use of antimicrobials ,antibiotics stewardship program
- ❖ Pharmacology of chemotherapeutic agents :beta lactams ,sulphonamides ,quinolones, macrolides, aminoglycosides, tetracyclines, chloramphenicol
- ❖ Newer antimicrobial agents, broad spectrum antibiotics
- ❖ Chemotherapy of urinary tract infections and sexually transmitted diseases
- ❖ Chemotherapy of tuberculosis in various categories
- ❖ Chemotherapy of leprosy and management of lepra reactions
- ❖ Chemotherapy of protozoal/vector borne diseases like amoebiasis ,malaria ,kala azar, filariasis and other diseases.
- ❖ Anthelmintic drugs
- ❖ Antiviral drugs including HIV




- ❖ Antifungal drugs
- ❖ Cancer chemotherapeutic agents

6. Immunomodulatory drugs

- ❖ Immunostimulants
- ❖ Immunosuppressants

7. vitamins and minerals

8. Vaccines and sera ,immunoglobulins and monoclonal antibodies.

Paper II

1. central nervous system (CNS)

- ❖ General anaesthetics and pre-anaesthetic medications
- ❖ Sedatives and hypnotic drugs
- ❖ Antiepileptic drugs and management of status epilepticus
- ❖ Antianxiety drugs ,drugs for mania, bipolar disorder
- ❖ Antidepressants and antipsychotic drugs
- ❖ Opioids :agonists and antagonists
- ❖ Antiparkinsonian drugs
- ❖ Management of methanol poisoning and chronic ethanol intoxication
- ❖ CNS stimulants ,depressants ,psychedelics ,drugs used for criminal offence, Drug abuse,dependence and management of drug addiction
- ❖ Drugs for dementia ,alzheimer disease , multiple sclerosis

2. Respiratory system

- ❖ Pharmacotherapy of cough dry and productive
- ❖ Pharmacotherapy of bronchial asthma ,COPD,rhinitis

3. Gastrointestinal system(GIT)

- ❖ Drugs and acid peptic disease like peptic ulcer and GERD
- ❖ Prokinetics ,emetics and antiemetic drugs
- ❖ Drugs for diarrhoea both acute and chronic in adults and children




- ❖ Drugs for constipation
- ❖ Drugs for inflammatory bowel disease and irritable bowel disease

4. Autocoids and related drugs

- ❖ Antihistaminics ,common cold,allergic rhinitis medicines
- ❖ Pharmacology of NSAIDS
- ❖ Management plan of gout ,arthritis (RA,Osteoarthritis)and migraine

5. Endocrine system

- ❖ Drugs used in diabetes mellitus ,management in obese ,non-obese and prevention of complications
- ❖ Management plan for male and female with osteoporosis
- ❖ Thyroid hormone and antithyroid drugs
- ❖ Anterior pituitary hormones and drugs
- ❖ Corticosteroids
- ❖ Androgens ,anabolic steroids and drugs in erectile dysfunction
- ❖ Estrogens ,progesterones and contraceptives ,treatment of infertility
- ❖ Uterine stimulants and relaxants

6. Blood and blood fromation

- ❖ drugs for different anaemias and thrombocytopenia
- ❖ Coagulants and anticoagulants
- ❖ Fibrinolytics and antifibrinolytics
- ❖ Antiplatelet drugs
- ❖ Erythropoietin and related drugs

7. Drugs acting on skin and mucous membranes eg. Acne vulgaris ,scabies ,pediculosis ,psoriasis and sunscreens

8. Chelating agents and management of heavy metal poisoning

9. Antiseptics ,disinfectants, ectoparasiticides

10. Ocular pharmacology



EXAMINATION PATTERN: as per NMC ,New Delhi Guidelines.

(1). Internal assessment (to be sent by colleges)

Therory -total marks (100)

Practical -total marks (100)

(2). University Professional examination (conducted by the university)

Theory- paper I-total marks (100)

paper II-total marks (100)

Grand total -200

Practical -total marks (100)

(3). pattern of examination

Theory paper :Question paper comprises of various types of MCQs ,true -false ,matching ,assertion reason and multiple completion response,

Short answer Questions(SAQ),short notes and long answer questions(LAQ).

Practical: Practical examination include spotting,clinical pharmacy and dosage forms,

Interpretation of graphs ,experimental pharmacology,prescription writing and criticism of prescription ,evaluation of fixed dose combinations ,ADR reporting, P-drug, sources of drug information ,evaluation of drug promotional literature and patient communication including AETCOM evaluation

Exam pattern will include spotting ,objective structured practical examination stations (OSPE),communication station ,viva voce etc.