

Short answer questions (10 X2) = 20 marks

Total = 40 marks

Microbiology Paper II – Virology, Parasitology, Mycology, Clinical Microbiology

Structured Essay = 10 marks

Short Essays (2 X5) = 10 marks

Short answer questions (10 X2) = 20 marks

Total = 40 marks

Total marks (40 + 40) = 80 marks

Internal assessment = 15 marks

Viva voce = 15 marks

Total for theory = 110 marks

(Duplication of the questions should be avoided)

Practicals

Internal assessment -15 marks. University –25 marks

University Practical -Exercises

1. Gram staining (Clinical material) – 5marks
 2. AFB staining (Clinical Material) – 5 marks
 3. Applied microbiology – 5 marks
 4. Spotters-10 numbers – 10 marks (preferably OSPE)
- 2 minutes for each spotter, 2-4 sub questions with each spotter.
(2 Mycology, 3 Parasitology, 2 General Bacteriology, 2 Virology/Immunology & 1 Clinical Bacteriology)

PATHOLOGY

GOALS

The broad goal of teaching undergraduates Pathology is to impart the knowledge skills and attitudes in the learner to understand the etiopathogenesis, morphology and pathological concepts related to various common diseases.

Learning Objectives

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

1. Know the principles of collection, handling, storage and dispatch of clinical samples from patient, in a proper manner.
2. Perform and interpret in a proper manner the basic clinico-pathological procedures.
3. Have an understanding of the common hematological disorders and the investigations necessary to diagnose them and determine their prognosis.
4. Understand the concept of cell injury, the change produced thereby, in different tissues and organs and the body capacity for healing.

5. Understand normal haemostatic mechanism, the derangements of these mechanisms and the effect on human system.
6. Understand the etiopathogenesis, the pathological effects, and the clinico pathological correlation of common infectious and non-infectious diseases.
7. Understand the concept of neoplasia with respect to etiology, gross and microscopic features, diagnosis and prognosis of neoplasia in different tissues and organs of the body.
8. Correlate normal and altered morphology (gross and microscopy) of different organ systems in different diseases to the extent needed for understanding of the disease processes and their clinical significance.
9. Have knowledge of common immunological disorders and their effects on human body.

Course content

1. Cell injury-

7Hrs

- Cause and mechanism: Ischemic, Toxic injury and Apoptosis
- Reversible cell injury: Types morphology, hyaline, fatty change
- Irreversible cell injury: Types of necrosis, gangrene
- Calcification: Dystrophic and Metastatic calcification

2. Inflammation and repair

7Hrs

- Acute inflammation: features, causes, vascular and cellular events.
- Morphological variants of acute inflammation
- Inflammatory cells and mediators
- Chronic inflammation: causes, types, non – specific and granulomatous with common examples
- Wound healing by primary and secondary union, factors promoting and delaying the process and complications.

3. Immunopathology

5Hrs lecture +2hrs symposia

- Immunopathology: organization, cells, antibodies and regulations of immune responses
- Hypersensitivity: types and examples, antibody and cell mediated
- Tissue injury with examples.
- Autoimmune disorders like Systemic Lupus Erythematosus
- Organ transplantation: immunological basis of rejection and graft versus host reaction.
- Amyloidosis, classification, Pathogenesis, morphology.
- HIV-AIDS, etiology, modes of transmission, pathogenesis, pathology, complications, diagnostic procedures and handling of infected materials and health education

4. Infectious diseases

5Hrs lecture +4hrs symposia

- Mycobacterial diseases: tuberculosis and leprosy
- Bacterial diseases: Pyogenic infections, typhoid, diphtheria, gram –ve infections, bacillary dysentery, syphilis
- Viral: polio, herpes, rabies, measles: Rickettsial and Chlamydial infections

- Fungal diseases and opportunistic infections
- Parasitic diseases: malaria, filariasis, amoebiasis, Kala azar, cysticercosis, hydatid disease

5. Circulatory disturbances**5Hrs lecture +2hrs symposia**

- Oedema: pathogenesis and types
- Chronic venous congestion: lung, liver, spleen
- Thrombosis and embolism: formation, fate and effects
- Infarction: types, common sites, gangrene
- Shock: pathogenesis, types, morphological changes

6. Growth disturbances**7Hrs lecture**

- Atrophy, hypertrophy, hyperplasia, Metaplasia, malformation, agenesis, dysplasia
- Neoplasia: causes, classification, histogenesis, biological behavior, benign and malignant, carcinoma and sarcoma
- Malignant neoplasia: grades and stages, local and distant spread
- Carcinogenesis: Environmental carcinogen, chemical, viral, occupational, hereditary and basics of molecular basis of cancer.
- Tumor and host interaction: systemic effects including para neoplastic syndrome, tumor immunology.
- Premalignant lesions
- Laboratory diagnosis: cytology, biopsy, tumor markers
- Tumors and tumor like conditions of soft tissues.

7. Miscellaneous disorders**4Hrs lecture +2hrs symposia**

Autosomal and sex-linked disorders with examples. Genetics-cytogenetics, molecular genetics, non-Mendelian disorders (details of diseases not needed –only inheritance pattern) – lysosomal storage diseases

- Protein energy malnutrition and vitamin deficiency disorders
- Disorders of pigments and mineral metabolism such as bilirubin, melanin, haemosiderin.
- Environmental pathology – pathology of radiation injury and pollution injury (air and food)

8. Haematopathology 15Hrs lecture +2hrs symposia (Symposia for WBC disorders)

- Anaemia: classification and clinical features
- Nutritional anemia: Iron deficiency, folic acid/vit B12 deficiency anaemia including pernicious anemia
- Hemolytic anaemia: classification and investigation
- Hereditary hemolytic anaemia; thalassemia, sickle cell anemia, hereditary spherocytosis and G 6 P D deficiency.
- Acquired Hemolytic anemia: malaria, Kala Azar, autoimmune, alloimmune, drug induced, microangiopathic
- Haemostatic disorders: platelet deficiency, ITP, drug induced, secondary
- Coagulopathies: coagulation factor deficiency, hemophilia, DIC and anticoagulant control
- Leucocytic disorders: Leucocytosis, leucopenia, leukemoid reaction.

- Acute and chronic leukemia : classification and diagnosis
- Multiple myeloma and dysproteinemias
- Blood transfusion: grouping and cross matching untoward reactions, transmissible infections including HIV and hepatitis. Blood components
- Myelodysplastic syndrome
- Myeloproliferative disorders: polycythemia, myelofibrosis

9. Cardiovascular Pathology**5Hrs lecture +4hrs symposia**

- Acute rheumatic fever: etiopathogenesis and morphological changes and complications including rheumatic heart disease.
- Infective endocarditis: etiopathogenesis and morphological changes and complications.
- Atherosclerosis and ischemic heart disease: myocardial infarction
- Hypertension (pathology in various organs including kidney) and hypertensive heart disease
- Myocarditis
- Pericarditis
- Cardiomyopathy
- Vasculitis, aneurysm

10. Respiratory pathology**5Hrs lecture +2 hrs symposia**

- Structure of bronchial tree and alveolar walls, normal and altered Inflammatory disease of bronchi: chronic bronchitis, bronchiectasis
- Pneumonias: lobar, broncho, interstitial
- Lung abscess: etiopathogenesis and morphology and complications
- Pulmonary tuberculosis: primary and secondary, morphologic types including pleuritis
- Concepts of obstructive and restrictive lung disorders – chronic bronchitis emphysema, Asthma.
- Emphysema: type and pathogenesis.
- Occupational lung disorders: anthracosis, silicosis, asbestosis, mesothelioma.
- Atelectasis and hyaline membrane disease.
- Tumors: Epithelial Malignant Neoplasia of Lung, Etiopathogenesis
- Nasopharyngeal and laryngeal tumors

11. Renal & Urinary tract Pathology**3Hrs lecture +2hrs symposia**

- Basics of impaired function and urinalysis
- Glomerulonephritis: classification, primary Proliferative and non-proliferative, secondary (SLE, polyarteritis, Amyloidosis, diabetes)
- Clinical presentation of renal disorders including nephritic, nephrotic syndrome, nephritic-nephrotic syndrome, acute renal failure, recurrent hematuria, CRF
- Morphology of MCD, FSGS, membranous and membranoproliferative GN
- Acute renal failure: acute tubular and cortical necrosis
- Pyelonephritis, reflux nephropathy, interstitial nephritis
- Nephrolithiasis and obstructive nephropathy
- Renal malformations (including dysplastic kidney) and polycystic kidney

- Renal cell tumors: renal cell carcinoma, nephroblastoma.
- Progressive renal failure and end stage renal disease
- Renal vascular disorders
- Urinary bladder: cystitis, carcinoma
- Urinary tract tuberculosis

12. Pathology of Gastrointestinal tract 6Hrs lecture +4hrs symposia

- Oral pathology: leukoplakia, carcinoma oral cavity and carcinoma esophagus
- Peptic ulcer: etiopathogenesis and complications, gastritis types
- Tumors of stomach: benign, polyp, leiomyoma, adenocarcinoma, other gastric tumors.
- Inflammatory disease of small intestine: typhoid, tuberculosis, Crohn's disease, appendicitis.
- Inflammatory disease of large intestine: amoebic colitis, bacillary dysentery, ulcerative colitis
- Large and small intestine tumors: polyps, carcinoid, carcinoma, lymphoma
- Pancreatitis
- Salivary gland tumors
- Ischemic and pseudomembranous enterocolitis, diverticulitis
- Malabsorption – celiac disease, tropical sprue and other causes
- Pancreatic tumors: endocrine, exocrine and periampullary

13. Liver and Biliary tract pathology 5Hrs lecture +2hrs symposia

- Jaundice: types, etiopathogenesis and differentiation
- Hepatitis: acute and chronic, etiology, pathogenesis and pathology
- Cirrhosis: etiology, classification, pathology, complications
- Portal hypertension: types and manifestation
- Diseases of gall bladder: cholecystitis, cholelithiasis, carcinoma
- Tumors of liver: hepatocellular carcinoma, Metastatic tumours, tumor markers

14. Lymphoreticular System 3Hrs lecture

- Lymphadenitis: non – specific, granulomatous
- Non-Hodgkin's lymphoma: classification, morphology
- Hodgkin's lymphoma: classification, morphology
- Thymus-hyperplasia (myasthenia gravis), thymomas
- Diseases of spleen: congestive splenomegaly and infarction spleen.
Hypersplenism. Conditions producing rupture spleen, involvement in storage diseases.

15. Reproductive system 6Hrs lecture +2hrs symposia

- Disease of cervix: cervicitis, cervical carcinoma, etiology, cytological diagnosis
- Hormonal influences of different phases of menstrual cycle and the abnormality associated with it.
- Diseases of uterus: endometrial hyperplasia and carcinoma, adenomyosis, smooth muscle tumors

- Trophoblastic disease: hydatidiform mole and choriocarcinoma
- Diseases of breast: mastitis, abscess, fibrocystic disease Neoplastic lesions: fibroadenoma, carcinoma, phylloides
- Prostate: nodular hyperplasia, carcinoma
- Ovarian and testicular tumors
- Carcinoma of penis
- Pelvic inflammatory disease including salpingitis
- Genital tuberculosis.

16. Osteopathology**2Hrs lecture**

- Osteomyelitis: acute, chronic, tuberculosis
- Metabolic diseases: rickets/osteomalacia, osteoporosis, hyper parathyroidism
- Neoplasms: osteosarcoma, osteoclastoma, Ewing's sarcoma, chondro sarcoma and metastatic tumours
- Arthritis: rheumatoid arthritis, osteoarthritis and tuberculous arthritis.

17. Endocrine Pathology**8Hours**

- Diabetes mellitus: types, pathogenesis, pathological changes in adrenals, kidney and other organs.
- Non neoplastic lesion of thyroid: Iodine deficiency goiter, autoimmune thyroiditis, thyrotoxicosis, myxedema
- Tumors of thyroid: follicular adenoma. Carcinomas: papillary, follicular, medullary, anaplastic
- Lymphoma of thyroid
- Adrenal diseases: cortical hyperplasia, atrophy, tuberculosis, tumors of cortex and medulla
- Parathyroid hyperplasia and tumors

18. Neuropathology**1 Hours**

- Inflammatory disorders: pyogenic and tuberculous meningitis, brain abscess, tuberculoma
- WHO classification of brain tumors
- CNS tumors – primary-glioma and meningioma and Metastatic tumours, schwannoma and neurofibroma
- CSF and its disturbances: cerebral edema, raised intracranial pressure
- Cerebrovascular disease: atherosclerosis, thrombosis, embolism, aneurysm, hypoxia, infarction and hemorrhage.
- Degenerative diseases: Alzheimer's disease and parkinsonism
- Retinoblastoma and malignant melanoma choroid

19. Dermato-pathology**2 Hours**

- Skin tumors: squamous cell carcinoma, basal cell carcinoma and malignant melanoma.
- Inflammatory dermatoses of skin –psoriasis, lichen planus, bullous diseases

Examinations Skills

The students should be trained to perform independently the following

1. Be able to collect, store and transport Materials for various pathological tests Including histopathology, Cytopathology, Clinical pathology, hematology and Biochemistry
2. Interpret abnormal laboratory values of Common diseases
3. Do complete urine examination including Microcopy

Do/ perform and interpret haemoglobin estimation, TLC, DLC, ESR, PCV, blood smear preparation (thick and thin) and staining. Reporting peripheral smears

4. Do blood grouping
5. Adapt universal precautions for self-Protection against HIV and hepatitis

Practical:

One – third of allotted practical hours to be devoted to

- a. Performing a complete urine examination and detecting abnormalities and correlating with pathological changes.
- b. To performs with accuracy and reliability basic hematological estimations: TLC, ES R, PCV, DLC, peripheral smear, staining, reporting along with history.

One third of allotted practical hours to be devoted to

- a. Identify and interpret gross and microscopic features of acute inflammations in organs such as appendix, lungs, meninges,
- b. Cellular components of chronic and granulomatous inflammation, c. Granulation tissue, callous
- d. Typhoid, tuberculosis, amoebic ulcers in intestine
- e. Rhinosporidiosis, actinomycosis, malaria, kala-azar, filaria
- f. Amoebic liver abscess, malaria liver and spleen, filarial lymphadenitis, cysticercosis
- g. Fatty liver, Amyloidosis of spleen, kidney and liver
- h. Types of necrosis : caseous, coagulative, liquifactive
- i. Identify and interpret gross and microscopic features of organs in commonly occurring neoplastic and non-neoplastic diseases
- j. Study cytology slides-fibroadenoma,squamous cell carcinoma,granuloma, Adenocarcinoma in fluid, papillary carcinoma thyroid

One third of allotted practical hours to be devoted to

- a. Discussion of case studies -clinical, gross and microscopic features and other

parameters wherever applicable -to learn clinicopathological correlations inclusive of autopsy studies and cytology slides / cases.

Clinicopathology posting Clinical pathology for two weeks may be taken from the dept.willing to provide slots/can be arranged by reallocating the timings of theory classes and it may be done at the level of individual Institutions in accordance with the availability of slots in various departments.

SUGGESTED TOPICS FOR INTEGRATED TEACHING/AUTOPSY/CPC Integrated

seminars

- a. Rheumatic heart disease
- b. Ischemic heart disease
- c. Hypertension and Hypertensive disease
- d. Tuberculosis lung
- e. Nephrotic syndrome
- f. Inflammatory disease of small and large bowel
- g. Cirrhosis
- h. Metabolic bone disease
- i. Diabetes mellitus
- j. HIV/ AIDS
- k. Iron deficiency anemia
- l. Jaundice
- m. Malaria, Dengue, Chikungunya, Avian Flu, swine flu
- n. CML, Hemolytic anemia ,deficiency anemia, Leukemia.
- o. immunology
- p. infectious diseases
- q. clinical pathology(selected topics)
- r. multi-dimentional pathophysiology of chronic diseases

A minimum of seven topics in the integrated teaching should be organized with the help of medical education department and other clinical/nonclinical departments.

TEACHING LEARNING METHODS.

- Structured interactive sessions
- Small group discussion
- Practical including demonstrations using micro image projection system.
- Problem based exercises
- Autopsy case studies
- Self learning tools
- Seminar and symposia

- E-modules (can be done by renovating part of museum as a digital lab)

LEARNING RESOURCE MATERIALS

- Text books
- Reference books
- Practical note books
- Internet resources

EVALUATION:

There should be regular formative assessment. In Formative assessment, day to day performance should be given greater importance and forms the basis of internal assessment.

Internal assessment

The internal assessment marks for Pathology are 15 for Practical and 15 for Theory Since the minimum percentage required for appearing for University exam is 35%, the total minimum marks required for internal assessment would be 5.5 out of 15, There need to be a separate minimum for Practical and Theory internal assessment. The total marks for University exam in Pathology is 150 (Theory 80 (2 papers) + Viva 15 + Practical 25 + internal assessment 30).

The pass has to be decided as follows:

1. Total aggregate marks should be 75 out of 150marks or more for pass.
2. Theory and Practical Internal assessment marks should be added to the marks obtained in
3. Theory and Practical University exams respectively for deciding the pass
4. For Theory (80 + 15 viva+ 15 marks internal assessment = 110) the minimum for pass should be 55marks.
5. For Practical (25 + 15 marks internal assessment = 40) the minimum for pass should be 20marks.

If moderation is given (in the event of no double valuation) it should be added to Theory marks only since the logic for moderation is ambiguity in question paper No moderation need to be given for practical exam.

Before printing, question Paper scrutiny should be strictly enforced in University exams since question papers shows many mistakes, which necessitates moderation

Marks for internal assessment

Theory - 15 marks (including viva)

Practical - 15 marks

One exam for theory at the end of each semester (viva to be conducted preferably with each exam)

The last exam will be as per University exam pattern-theory, practical and viva

Internal assessment may be calculated as follows

Theory =15 marks (minimum 3 exams)

Final theory exam - 5marks

Best of other two exams - 5 marks

Seminar presentation/class tests - 2 marks

Viva - 3 marks

Practical = 15 marks

Records = 1 mark (Histopathology, clinical pathology and Autopsy/CPC records)

Records to be maintained and evaluated – Histopathology record, clinical pathology record, a common record of Post mortem findings in 10 cases and 5 clinicopathological conferences Practical = 14 marks

The details of marking scheme for Pathology Practical would be

	Internal Assessment exam marks	University exam marks
Peripheral smear Reporting	20	10
Clinical Pathology Exercise	20	10
(1 out of 6)		
Blood grouping	20	10

Urine analysis	20	10
Spotters (20x3)	60	(20x3) 60
Records (4+3+3)	10	
(HP + CLIP + Ax/ CPC) TOTAL	150	100
To be converted to	15	25

Marks for Record has to be added to Internal assessment in Practical only and not in the University Practical since it will result in duplication.

University examinations

Marks break up are

Theory 80 marks

Theory internal assessment 15 marks

Viva 15 marks

Total for theory 110 marks

Practical 25 marks

Practical internal assessment 15 marks

Total for practical 40 marks

Grand total for Pathology 150 marks

Pattern of theory paper (University)

There will be 2 theory papers of 2 hours duration

The theory papers for University are Paper I 40 marks and Paper II 40 marks.

The content area would be Paper I = Clinical pathology (disease aspects of hematology will be included in paper II only) + General Pathology Paper II = Systemic Pathology + Hematology

Detailed pattern of theory questions

Out of 40 marks for each paper the marking scheme would be :

Answer in single sentence- $(4 \times 1/2) = 2$ marks

STRUCTURED(Case Study) ESSAY = 6 marks

Short answers questions(SAQ) $4 \times 2 = 8$ marks

STRUCTURED ESSAY = 8 marks

Write short notes on: $(4 \times 4) = 16$ marks

Section A and B are needed in each paper only if there is no double valuation so

that each examiner can value one paper

If there is section A and Section B then the marking scheme for each paper will be as follows:

Paper I

	20
Section A	= marks
Single word type	= 2 marks
Problem based structured essay	= 6 marks
SAQ-4 questions	= 8 marks
Short notes- 1 question	= 4 marks
	20mark
Section B	= s
Standard/modified	= 8 marks

Paper II

	20
Section A	= marks
Short notes	= 4 marks
Single word type	= 4 marks
Problem based structured essay	= 6 marks
SAQ-2 questions	= 6 marks
	20
Section B	= marks
Standard/modified	= 8 marks
	12
essay SAQ-4questions	= marks

Practical-OSPE-(objective structured practical examination)

Total marks = 25 marks

No marks for records in the university practical

Practical marks to be split up as follows

Procedural stations =four =15 marks

Response stations/spotters=20 stations = 10

Procedure stations (15 minutes per station) **(questions can be asked during the procedure)** Blood grouping

Urine analysis (including sediments demonstrated as charts)

Peripheral smear preparation (thick and thin) /staining / Hb estimation/TLC/ESR/PCV

Peripheral smear reporting (one out of 5)

HMA AML

CML

Neutrophilia

Eosinophilia

Response station (spotters) (2minutes each=20 stations) (with questions)

Specimens-mounted and wet =7

Histopathology slides =6

Hematology slide =2(one bone marrow)

Cytology slide =1 (20% should be with Clinico pathologic correlation (CPC) i.e. 4 spotters in CPC)

Histogram interpretation =1

Interpretative clinical pathology charts with photos =1

Clinicopathological correlative exercise (specimens/slide combinations with clinical history) =1 Instruments =1

Viva =15 marks

Total 4 stations for viva

Stations will be for Clinical pathology and hematology

General pathology

Systemic pathology I

Systemic pathology II

Pathophysiology of Pain

Practicals guidelines

The slides for histopathology will be divided into 30 for spotting and drawing in records and 20 for demonstration in class.

There would be

HISTOPATHOLOGICAL SLIDES

For diagnosis/spotting		For demonstration	
1	Acute Appendicitis	1	CVC Lung
2	Granulation tissue	2	CVC Liver
3	Calcinosis cutis	3	Filarial Lymph node
4	T.B. lymph adenitis	4	Infarction (Spleen/placenta)
5	Lepromatous Lepresy	5	Actinomycosis/Aspergillosis
6	Rhinospondrosis	6	Fatty liver
7	Capillary Haemangioma	7	Warthin's tumor
8	Cirrhosis Liver	8	Neurofibroma
9	Lipoma	9	Intradermal anevus

10	Leiomyoma	10	NHL
11	Fibroadenoma	11	HCC
12	Pleomorphic Adenoma	12	Cavernous Haemangioma
13	Schwanoma	13	Secretory endometrium
14	Osteochondroma	14	Adenoma thyroid
15	Malignant Melanoma skin	15	Molluscum contagiosom
16	Squamous cell carcinoma skin	16	Vesicular mole
17	BCC	17	Adenomyosis/endometriosis
18	Hodgkin's lymphoma	18	Mets lymphnode from SCC
19	MNG	19	Bronchopneumoma
20	Papillary carcinoma thyroid	20	Nephro blastoma
21	Hashimoto's thyroiditis		
22	Giant cell Tumor bone		
23	Osteosarcoma		
24	Adenocarcinoma colon		
25	Teratoma ovary		
26	Infiltrating duct carcinoma		
27	Renal cell carcinoma		
28	Tuberculoid Leprosy		
29	Atheroma aorta		
30	Meningioma		

History for Histopathology slides can be given by examiner for spotting.

The specimens for histopathology will be divided into 50 for spotting /diagnosis and 23 for demonstration categories.

There would be

Specimens

For spotting /

for demonstration

GIT

- | | |
|---|--|
| 1. Chronic Gastric Ulcer | 1. Gangrene intestine with round worms |
| 2. Carcinoma Stomach with omental – metastasis, cancer pain , Nociceptive. Neuropathic pain , visceral pain | |
| 3 Lipomatous polyp intestine | |
| 4. Polyp small intestine | |
| 5 Typhoid ulcer intestine | |
| 6 Multiple Polyposis large intestine | |
| 7. Intussuception intestine | |
| 8 Gangrene intestine | |
| 9 Tuberculous ulcer intestine with stricture | |
| 10. Amoebic ulcer large intestine | |
| 11 Acute appendicitis | |
| 12. Carcinoma colon | |

HEPATOBIILIARY SYSTEM & PANCREAS

- | | |
|---------------------------------------|----------------------|
| 1. Cirrhosis liver (Macronodular) | 1. Fatty liver |
| 2. Calculous cholecystitis | 2. Amyloidosis liver |
| | Amoebic liver |
| 3. Calcifying Pancreatitis | 3. abscess |
| 4. CVC liver | |
| 5. Angioma liver | |
| 6. Hemochromatosis liver- Perls stain | |

SPLEEN

1. CVC Spleen
2. Infarction Spleen

FGS

1. Carcinoma Cervix
2. Leiomyoma uterus
3. Benign cystic Teratoma ovary
4. Adenomyosis uterus
5. Adenocarcinoma uterus
6. Vesicular mole
7. Choriocarcinoma uterus

MGS

1. Carcinoma Penis

BREAST

1. Fibro adenoma breast
2. Carcinoma breast

EYE

1. Retinoblastoma
2. Melanoma – Eye

RESPIRATORY SYSTEM

1. Fibrocaseous tuberculosis lung
2. Pulmonary artery embolism
3. Lung abscess
4. Bronchogenic Carcinom
5. Lobar pneumonia
6. Hydatid cyst lung

CVS

- | | |
|---------------------------------|---------------------------|
| 1. Atheroma aorta with thrombus | 1. Aneurysm aorta |
| | 2. Fibrinous pericarditis |
| | 3. Mural Thrombus Heart |

LYMPHNODES

1. Caseating TB adenitis
2. Lymphoma

THYROID

1. Multinodular goitre
2. Carcinoma thyroid

SALIVARY GLAND

1. Pleomorphic adenoma
2. Diffuse colloid goiter
3. Hashimoto's thyroiditis
4. Adenoma thyroid

BONE

- | | |
|---------------------------|----------------------|
| 1. Sequestrum | 1. Melanoma deposits |
| 2. Osteochondroma | 2. Malunion |
| 3. Giant cell tumour bone | |
| 4. Osteogenic sarcoma | |

CNS

1. Suppurative Meningitis

SKIN AND SUBCUTANEOUS TISSUE

- | | |
|---------------------------------|--------------------|
| 1. Calcinosis Cutis | 1. Filariasis skin |
| 2. Lipoma | |
| 3. Squamous cell Carcinoma Foot | |
| 4. Basal Cell Carcinoma | |
| 5. Melanoma Foot | |

URINARY SYSTEM

1. Renal Cell Carcinoma
2. Nephroblastoma
3. Carcinoma bladder
4. Hydronephrosis
5. Nephrolithiasis

The slides for hematology will be divided into 10 for spotting and 10 for demonstration.
They would be

Hematology

For spotting		Demonstration	
1	HMA	1	Filaria
2	AML	2	Lymphocytosis with atypical lymphocyte
3	CML	3	Spherocyte-Spotter
4	Neutrophilia	4	Reticulocyte
5	Eosinophilia	5	Thalassemia with target cells
6	Megakaryocyte	6	Toxic granules
7	LE cell	7	Myeloperoxidase stain
8	Multiple myeloma	8	Megaloblast
9	Normoblast	9	Sickle cells-Spotter
10	Malaria – PV/PF	10	CLL
11	A plastic anaemia		

Cytology slides (for spotting)

1. Fibroadenoma
2. Granulomatous reaction lymph node
3. Squamous cell carcinoma sputum
4. Cervical smear Invasive squamous cell carcinoma
5. Adenocarcinoma in body fluids
6. Papillary carcinoma thyroid

Recommended Textbooks

Pathologic Basis of Disease-Robbins and Cotran 7th edition
Text Book of Pathology-Harsh Mohan 6th edition
General and Systematic Pathology-5th edition-JCE Underwood
Haematology-G E De Gruchy
Text and Practical Haematology MBBS-Tejinder singh
Manual of Basic Techniques for Health laboratory-WHO

PHARMACOLOGY**I. Goal:**

The broad goal of teaching Pharmacology to undergraduates is

- To impart knowledge, skills and attitudes to the students so that they can prescribe drugs safely, effectively and maintain competency in professional life.
- To inculcate in them a rational and scientific basis of therapeutics.

II. Educational Objectives. a)**Knowledge**

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

- describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs
- list the indications, contraindications, interactions and adverse reactions of commonly used drugs
- indicate the use of appropriate drug in a particular disease with consideration of its cost, efficacy and safety for individual needs, and mass therapy under national health programmes
- integrate the list the drugs of addiction and recommend the management
- classify environmental and occupational pollutants and state the management issues
- explain pharmacological basis of prescribing drugs in special medical situations such as pregnancy, lactation, infancy, old age, renal and hepatic failure
- explain the concept of rational drug therapy in clinical pharmacology with special focus to usage of antimicrobial drugs.
- prescribe drugs for the control of fertility and be aware of the effects of drugs on the foetus.
- describe the clinical presentation and management of common poisoning including the bites and stings.