B.D.S COURSE
GENERAL PATHOLOGY /
SYLLABUS
(With effect from 2010-11 onwards)
GENERAL PATHOLOGY

a) AIM:
At the end of the course the student should be competent to: Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry.

b) OBJECTIVES:
Enabling the student
i. To demonstrate and analyze pathological changes macroscopically explain their observations in terms of disease processes.
ii. To integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.
iii. To demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research.
iv. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

c) COURSE CONTENT:

i. Theory: 55 Hours

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>TOPIC</th>
<th>HOURS ALLOTTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Terminologies, The cell in health, The normal cell structure, The cellular functions</td>
<td>1</td>
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<tr>
<td>2</td>
<td>Etiology and Pathogenesis of disease, Cell Injury Types - congenital, Acquired Mainly Acquired causes (Hypoxic injury, chemical injury, physical injury, immunological injury) Cell death &amp; Necrosis Apoptosis, definition, causes, features and types of necrosis Gangrene - Dry, wet, gas Pathological Calcifications (Dystrophic and metastatic)</td>
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<td>3</td>
<td>Degenerations, Amyloidosis, Fatty change, Cloudy swelling, Hyaline change, mucoid degeneration</td>
<td>2</td>
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<td>4</td>
<td>Inflammation, Definition, causes types, and features, Acute inflammation, The vascular response, The cellular response, Chemical mediators, The inflammatory cells Fate, Chronic inflammation, Granulomatous inflammation</td>
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<tr>
<td>5</td>
<td>Healing Regeneration, Repair Mechanisms, Healing by primary intention, Healing by secondary intention, Fracture healing, Factors influencing healing process, Complications</td>
<td>3</td>
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<td>6</td>
<td>Immunological mechanisms in disease Humoral &amp; cellular immunity Hypersensitivity &amp; autoimmunity</td>
<td>2</td>
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<td>7</td>
<td>Infections &amp; infestations (1) Syphilis: Epidemiology, Types and stages of syphilis, Pathological, features, Diagnostic criteria, Oral lesions (2) Typhoid, Epidemiology, Pathogenesis, Pathological features, Diagnostic criteria, Thrombosis (3) Tuberculosis, Epidemiology, Pathogenesis, (Formation of tubercle), Pathological, features of Primary and secondary TB, Complications and Fate (4) AIDS &amp; Hepatitis (5) Actinomycosis (6) Candidiasis (7) Mucomycosis (8) Pyogenic infections</td>
<td>6</td>
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<td>8</td>
<td>(1) Disorders of circulation, Hyperemia, Shock (2) Definition, Pathophysiology, Formation, complications &amp; Fate of a thrombus (3) Embolism, Definition, Types, Effects (4) Ischemia and Infarction, Definition, etiology, types, Infraction of various organs (5) Derangements of body fluids, Oedema - Pathogenesis, Different types</td>
<td>4</td>
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<td>9</td>
<td>Nutritional Disorders, starvation, obesity, malnutrition, pathogenesis of deficieny diseases with special reference to disorders of vitamins &amp; minerals</td>
<td>3</td>
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<tr>
<td>10</td>
<td>Diabetes Mellitus, Definition, Classification, Pathogenesis, Pathology in different organs</td>
<td>2</td>
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</tbody>
</table>
Hypertension, Definition, classification, Pathophysiology, Effects in various organs

Brief introduction to growth & differentiation Adaptive disorders of growth, Atrophy & Hypertrophy, Hyperplasia, Metaplasia and Dysplasia

General Aspects of neoplasia, Definition, terminology, classification, Differences between benign and malignant neoplasms, The neoplastic cell, Metastasis, Etiology and pathogenesis of neoplasia, Carcinogenesis, Tumour biology, Oncogene and anti- Oncogenes, Diagnosis, Precancerous lesions, Common specific tumours, Sq papilloma & Ca, Basal cell Ca, Adenoma & Adenocarcinoma, Fibroma & Fibrosarcoma, Lipoma and liposarcoma

Common diseases of Bones, Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma, Osteoclastoma, Giant cell Tumour, Ewing’s sarcoma, Fibrous dysplasia, Aneursymal bone cyst

Diseases of oral cavity, Lichen planus, Stomatitis, Leukoplakia, Squamous cell Ca, Dental caries, Dentigerous cyst, Ameloblastoma Diseases of salivary glands, Normal structure, Sialadenitis & Tumours

Diseases of Cardiovacular system Cardiac failuare, Congenital heart disease ASD, VSD, PDA, Fallot’s Tetrology, Infective Endocarditis, Atherosclerosis, Ischaemic heart Disease

Introduction to haematology, haemopoiesis, bone marrow aspiration & biopsy, Anaemias, classification, Iron Deficiency anaemia, Megaloblastic anaemia, hemolytic anaemeas and their lab investigations, Polycythemia.

Haemorrhagic Disorders, Coagulation cascade Coagulation disorders Platelet function, Platelet disorders

Diseases of WBC’s pathologic variations in white blood cell counts and leukemoid reactions, Leukaemias, Acute and chronic leukaemias, Diagnosis and clinical features Diseases of Lymph nodes, Hodgkin’s disease, Non Hodgkins lymphoma, Metastatic carcinoma

**ii. Practical and lecture demonstrations: 55 hours**

**(1) Lecture demonstrations: 10 Hours**

a) Anti coagulants, Blood indices  
b) PCV & ESR  
c) Instruments & their uses:  
   (i) Neubauer’s Counting chamber  
   (ii) Haemoglobinometer  
   (iii) W.B.C Pippette  
   (iv) Wintrobe Tube  
   (v) Urinometer  

   d) Cytologic Techniques- FNAC and buccal smear  

   e) Study of anaemias-Microcytic, Macrocytic and Dimorphic blood picture  

   f) Study of Acute leukemias- Any one type  

   g) Study of Chronic Leukemias- Any one type

**(2) Histopathology Slides & Specimens: 20 Hours**

a) Tissue Processing, Staining  
b) Histopathology slides  
   (i) Acute appendicitis,  
   (ii) Granulation tissue,  
   (iii) fatty liver  
   (iv) CVC lung, CVC liver, CVC spleen  
   (v) Kidney amyloidosis  
   (vi) Tuberculosis,  
   (vii) Actinomycosis,  
   (viii) Rhinosporidiosis
(ix) Squamous cell papilloma,
(x) Transitional cell papilloma,
(xi) Pleomorphic adenoma
(xii) Basal cell carcinoms
(xiii) Squamous cell carcinoma
(xiv) Osteosarcoma,
(xv) osteoclastoma,
(xvi) fibrosarcoma
(xvii) Malignant melanoma,
(xviii) Ameloblastoma,
(xix) Adenocarcinoma
(xx) Pleamorphic adenoma
(xxi) Metatsatic carcinoma in lymph node
(xxii) Capillary and cavernous haemangioma
(xxiii) Fibroma
(xxiv) Neurofibroma
(xxv) Lipoma
(xxvi) Osteoma, chondroma

c) Specimens
(i) Acute Appendicitis.
(ii) Tuberculosis Lymphnode.
(iii) Fatty liver.
(iv) Infarction spleen.
(v) Chronic Venous Congestion (C.V.C.) Liver
(vi) Squamous papilloma
(vii) Basal cell carcinoma
(viii) Lipoma
(ix) Squamous cell carcinoama
(x) Malignant Melanoma
(xi) Adenocarcinoma
(xii) Osteosarcoma
(xiii) Osteoclastoma.
(xiv) Gangrene.

(3) **Practicals that must be done by the students: 25hrs.**
(i) Determination of Haemoglobin percentage
(ii) Blood grouping.
(iii) Total Leukocyte count
(iv) Bleeding time , Clotting time
(v) Peripheral blood smear staining and study
(vi) Differential leukocyte count.
(vii) Urine examination- for sugar, ketone bodies, protein, blood, bile pigments and bile salts- any one standard test
d) Scheme of examination

i. Theory:

*Distribution of Topics and Type of Questions for written examination*

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<tr>
<th>Contents</th>
<th>Types of Questions and Marks</th>
<th>Marks</th>
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<tbody>
<tr>
<td>Question from General Pathology</td>
<td>Structured Essays</td>
<td>14</td>
</tr>
<tr>
<td>Inflammation, Healing and Repair, Tuberculosis, Leprosy, Syphilis, Thrombosis, Diabetes Mellitus, Neoplasia, Diseases of bone, Cell injury, metabolic disturbances, Circulatory disturbances, Hypertension, diseases of oral cavity</td>
<td>1x 14marks</td>
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<tr>
<td>Two questions from General Pathology</td>
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<tr>
<td>Intracellular accumulations, Necrosis, Gangrene, Apoptosis, Amyloidosis, Pathologic calcification, hypersensitivity reactions, Infections, Shock, Oedema, Infarction, Congestion, Hypertension, Diabetes Mellitus, Premalignant Conditions, Neoplasia, Osteomyelitis, Anaemias, Neoplastic Proliferation of WBCs–Leukaemias and Lymphomas, Haemorrhagic disorders, Erythrocyte Sedimentations Rate(ESR),Urine sediment.</td>
<td>Brief structured Essays 2 x 8marks</td>
<td>16</td>
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<tr>
<td>Two from Haematology</td>
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<td>One from Clinical Pathology</td>
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(1) University written Examination: 50Marks  
(2) University Viva: 10Marks  
(3) Internal Assessment: 15 Marks  

iii. Practicals:  
(1) Internal Assessment: 10 Marks  
(2) University Practicals: 40Marks  

Mark distribution for University practical examination  

**Spotters**  
- Haematology slide: 2x 2marks  
- Histopathology slides: 5x2marks  
- Specimens: 2x2marks  
- Instruments: 1x2marks  

To examine given sample of urine for abnormal constituents: 5marks  
To do differential count on the given peripheral blood smear: 5marks  
To estimate haemoglobin percentage in the given sample of blood: 5marks  
Or  
To determine blood groups(ABO and Rh) in the given sample of blood: 5marks  
Practical work record: 5marks  

**TOTAL 40 Marks**  
Grand Total 125Marks