

**MEDICAL SCIENCE**  
 Total Marks-200  
**Part-I**  
**(Physiology and Anatomy)**  
 Marks-100

<u>Part-I : Physiology</u>	50
(a) Physiology of basic tissues.	
(b) Blood and circulatory system.	
(i) Haemostasis	
(ii) Coagulation of blood	
(iii) Cardiac cycle	
(iv) E.C.G.	
(v) Blood pressure	
(vi) Cardiac out put	
(vii) Physiology of shock	
(viii) Regional circulation	
(c) Respiratory system :	
(i) Lung function tests	
(ii) Mechanism of rhythmic breathing	
(iii) O <sub>2</sub> and CO <sub>2</sub> carriage	
(iv) Regulation of respiration	
(v) Cyanosis and hypoxia	
(d) Digestion, Metabolism and Nutrition	
(e) Kidney and body fluid:	
(i) Mechanism of urine formation and concentration.	
(ii) Renal circulation.	
(iii) Renal function tests.	
(iv) Regulation of body fluids.	
(f) Endocrinology and reproduction :	
(i) Hypophysis.	
(ii) Thyroid.	
(iii) Parathyroid.	
(iv) Pancreas.	
(v) Adrenal gland.	
(vi) Ovary and testis.	
(vii) Reproduction and control of fertility in the male and female.	
(g) <u>Nervous system:</u>	
(i) General organization of nervous system.	
(ii) Reflexes.	
(iii) Cerebellum.	
(iv) Hypothalamus.	
(v) Emotion.	
(h) <u>Special senses:</u>	
(i) Visual pathway.	
(ii) Light reflex.	
(iii) Accommodation reaction.	

- (iv) Vestibular apparatus.
- (v) Pathway for test and audition.

<u>Part-II : Anatomy</u>	50
(a) Anatomy of cells.	
(b) Cell divisions.	
(c) Elementary genetics.	
(d) Tissues of the body:	
(i) Epithelial tissue.	
(ii) Connective tissue proper.	
(iii) The skeletal system functions of the bones, Ligaments cartilages, structures of the bones and joints.	
(d) The muscular tissues	
(e) The nervous system—structures of the nervous tissue—neurone and neuroglia; Central nervous system; peripheral nervous system and autonomic nervous system.	
(f) The sense organs.	
(g) Dermatomes.	
(h) The skin.	
(i) The circulatory system—Heart, arteries, veins.	
(j) The Respiratory System—Nose, Throat, Larynx, Trachea, Bronchi and Lungs.	
(k) Digestive system—Mouth, Pharynx, Oesophagus, Stomach, Intestines, Salivary glands, Liver, Gall bladder, Pancreas and Spleen.	
(l) Urinary system—Kidneys Ureters, Urinary bladder, Urethra.	
(m) The reproductive system Male and Female reproductive system.	
(n) The endocrine glands.	
(o) General embryology.	
(p) Special embryology of the human body.	

**MEDICAL SCIENCE**  
**Part-II**  
**(Medicine and Pathology)**  
**Marks : 100**

<u>Part-I Medicine :</u>	50
1. <u>Objective : A graduate doctor will be able to :</u>	
<ul style="list-style-type: none"> <li>• Diagnose and manage various common medical conditions prevalent in the community (particularly in Bangladesh) and give proper counseling to patients and relatives.</li> <li>• Recognize, provide competent initial care and refer complicated cases to secondary and tertiary centers at appropriate time.</li> <li>• Diagnose and manage medical emergencies commonly encountered in hospital practice.</li> <li>• Demonstrate the awareness of the need to keep abreast of new knowledge and techniques in medicine.</li> </ul>	

Introduction to General Medicine :

- Overview to medicine as a discipline and subject
- Approach to common symptoms of diseases : e.g. pain, edema, cough, vomiting, dysuria, paralysis, joint pain, weakness, enlarged lymph node, anaemia etc.

Blood Transfusion :Clinical Medicine :

## Nutritional Factors in diseases :

- Energy yielding nutrients.
- Protein energy malnutrition in adult.
- The vitamins-deficiency and excess.

Diseases due to infections :

- Approach to infectious diseases-diagnostic and therapeutic principles.
- General principles and rational use of antibiotics.
- Dengue.
- Enteric fever.
- Amoebiasis, giardiasis.
- Kala-azar.
- Malaria.
- Filariasis.
- Rabies.
- Tuberculosis.
- HIV/ AIDS.
- Leprosy.
- Cholera, Diarrhoeal Disease.

2. Approach to common symptoms of disease : Fever, Pain, Palpitation, Jaundice, Anaemia, Bleeding, Haemoptysis, Dyspnoea, Paralysis, Syncope, Ascitis, Oedema, Cough, Vomiting, Dysuria.

3. Nutritional, Metabolic and Environmental diseases : Protein energy malnutrition, Obesity, Diseases due to Vitamin deficiency and excess.

4. Respiratory disease : Bronchial asthma, Chronic obstructive pulmonary disease, Pneumonia, Pleural effusion, Pneumothorax, Bronchogenic carcinoma.

Cardiovascular disease : Hypertension, Ischaemic heart disease. Acute rheumatic fever, Valvular heart disease, Heart failure.

Blood disorders : Leukemia, Lymphoma, Hazards of blood transfusion etc.

5. Helminthic diseases :

- Nematodes
- Trematodes

HIV and infections in the immuno compromised conditions.

Syphilis, gonorrhoea.

6. Diseases of the cardiovascular system :

- Ischaemic heart disease.
- Rheumatic fever and Rheumatic heart disease.
- Valvular diseases of heart.
- Infective endocarditis.
- Hypertension and hypertensive heart diseases.
- Cardiac arrhythmias(common).
- Heart failure - Acute-chronic
- Acute and chronic pericarditis, pericardial effusion & cardiac tamponade

Diseases of the gastrointestinal tract :

- Peptic Ulcer disease and non-ulcer dyspepsia.
- Malabsorption syndrome.

- Irritable bowel syndrome and inflammatory bowel disease.
- Acute viral hepatitis and chronic hepatitis.
- Abdominal tuberculosis.

Nephrology & Urinary System :

- Nephritic & Nephrotic Illness.
- UTI/Pyelonephritis.
- ARF
- CRF

Neurological System :

- Cerebrovascular diseases.
- Meningitis : viral, bacterial and tuberculosis.
- Encephalitis, viral.
- Peripheral neuropathy.

Water and electrolytes and acid-base homeostasis :

- Diagnosis and treatment of specific fluid and electrolytic disorders.

Endocrine and Metabolic diseases :

- Diabetes mellitus.
- Thyrotoxicosis.
- Hypothyroidism and Iodine deficiency state.
- Cushing's syndrome and Addisons disease.

Connective tissue Disorder :

- Rheumatoid arthritis and reactive arthritis
- Degenerative joint diseases including cervical spondylosis.
- Gout.

Geriatric medicine :

Common Genetic Disorders :

Common Immunologic disorders :

7. Diseases of the blood :

- Anaemia : iron deficiency.
- Common Haemolytic anaemia(Thalassaemia and acquired haemolytic anaemia).
- Common bleeding disorders(Thrombocytopenia and haemophilia).
- Agranulocytosis and aplastic anaemia.
- Leukaemas : Acute and chronic.
- Lymphomas.
- Multiple myelomas.
- Blood transfusion.

Diseases of the respiratory system :

- Upper respiratory tract infections.
- Pneumonias.
- Tuberculosis.
- Lung abscess and bronchiectasis.
- Diseases of the pleura : Pleurisy, Pleural effusion & empyema. pneumothorax.
- Chronic Obstructive lung diseases and cor pulmonale.
- Bronchial asthma & pulmonary eosinophilia.
- Acute and chronic respiratory failure.

- Neoplasm of the lung.
8. Pancreatic disease : Acute pancreatitis, Chronic pancreatitis.
9. Liver and Biliary tract disease : Viral hepatitis, Chronic liver disease, cirrhosis of liver carcinoma liver, liver abscess.
10. Neurological disease : Cerebro vascular disease, Meningitis, Encephalities, Epilepsy, Peripheral neuropathy, Management of unconscious patient.
11. Musculoskeletal disorders : Rheumatoid arthritis, Seronegative spondarthritis, Low back pain, Osteoarthritis, Gout, Reactive arthritis etc.
12. Geriatric medicine : General principles of treating elderly, Health problem of the elderly.
13. Poisoning and drug overdose :
  - Initial evaluation of the patient with poisoning of drug overdose.
  - General principles of management.
  - Treatment of common specific poisoning : OPC, sedatives, kerosene, alcohol, methanol, Dutra poisons.
  - Venomous stings, insect bites, poisonous snakes and insects.

Emergency Medicine :

- Cardiopulmonary resuscitation.
- Acute pulmonary oedema and severe acute asthma.
- Hypertensive emergencies.
- Diabetic ketoacidosis and hypoglycaemia.
- Status epileptics.
- Acute myocardial infarction, shock and anaphylaxis.
- Upper G.I bleeding and hepatic coma.
- Diagnosis and management of comatose patient.
- Drowning, electrocution.

Common skin diseases : Scabies, eczema, fungal infection

common psychiatric conditions: Somatoform disorders, depressive illness, schizophrenia, substance abuse.

Clinical Methods in the Practice of Medicine :

- History Taking.
- Physical Examination.
- Investigations.
- Diagnosis.
- Principles of treatment.
- Interpersonal skills.
- Communication skills.
- Doctor-patient relationship.
- Ethical Behavior.
- Referral services.
- Medical Certificate.

- Common Clinical Procedures :
    - Injections.
    - Nebulisation.
    - IV infusion.
    - FIRST AID.
    - Intubations.
    - CPR.
    - Hyper pyrexia.
    - ECG
    - Skin Sensitivity Test.
14. Clinical genetics : Introduction to medical genetics, Modern techniques of medical genetics, Down's syndrome, Klinefelter's syndrome, Turner's syndrome etc.
  15. Immunologic disorders : Basic facts of Immunology, Immunologic deficiency diseases.
  16. Sexually transmitted disease : Gonorrhoea, Syphilis, Non Gonococcal urethritis.
  17. Skin disease : Scabies, Superficial fungal infection, Dermatitis, Psoriasis, Drug reaction etc.
  18. Medical Psychiatry : Anxiety neurosis, Depression, Dissociative disorder, Somatoform, disorder etc.
  19. Communication skill
  20. Terminal Care

**Part-II : Pathology :**

50

- (a) Cell biology general concept.
- (b) Inflammation, Degeneration, Necrosis and gangrene.
- (c) Sterilization and disinfection.
- (d) Disorder of growth :Tumors including cancers.
- (e) Radiation, Hazards and prevention.
- (f) Immunity, Immunization against common bacterial and viral infection. Immuno deficiency syndrome with special reference to AIDS.
- (g) Common cause of diarrhoea and pathogenesis and complication. General reaction to trauma, hemorrhage and shock.
- (h) Bacterial infections with special references to Enteric fever, Tuberculosis, Leprosy, Diphtheria, Whooping cough, Tetanus, Gas gangrene, Food poisoning, Strepto and Staphylococcal infections, Bacillary dysentery, Cholera.
- (i) Common viral disease like poliomyelitis, Chickens pox, Measles, Viral hepatitis, Rabies, Herpeszoster, HIV. AIDS. Dengue.
- (j) Common parasitic disease Ascariasis, Ankylostomiasis(Hook worm infection).
- (k) Common protozoal disease Malaria, Kala-Azar, Giardiasis.
- (l) Sexually transmitted disease like, Gonorrhoea, Syphilis, elaneaid, Nongonococcal urethritis.

- (m) Routine laboratory procedure for peripheral blood film Urine, Stool malarial parasite examine sputum for Gram stains and AFB examine Blood examine for Hb% and ESR.
- (n) Special pathology for some diseases like Tuberculosis, Pneumonia, Bronchial Carcinoma, Chronic Bronchitis, Empygenia, Bronchietasis, Respiratory failure, pleurisy, pleural effusions, Pneumoconiosis.  
Liver disease like viral hepatitis, Hepatic amebiasis, liver abscess, primary and secondary carcinoma of liver  
Collage disease like systemic lupus erythematosus, Systemic sclerosis, Dermatomyositis- Rheumatoid arthritis.  
Joint disease - Gout, spondylitis psoriatic arthritis. Osteoarthritis Seronegative arthritis  
Endocrine disease : Pituitary tumors, Acromegaly, Thyroid tumors, Hyperthyroidism, Hypothyroidism.  
GI tract : Peptic ulcer disease, Carcinoma , Stomach Carcinoma, colon, renal disease: Acute and chronic glomerular nephritis, Acute and Chronic pyelonephritis. polycystic disease of Kidney, Renal artery stenosis, Renal failure.
- Neurological disease : Cerebrovascular disease, multiple Meningitis, Epilepsy, multiple sclerosis, Neurosyphilis, myopathy mysthesis grovius.
- Cardiovascular disease : Congenital and acquired valvular heart disease. Ischemic heart disease, Hypertensive heart disease. cardiomyopathies Heart failure.

#### DENTAL SCIENCE

Total Marks-200

Part-I

Marks-100

1. Oral Surgery and Anesthesia:

- (i) Acute infections of the Oral cavity-Acute infections of the jaws, periapical abscess, pericoronal infections, dissecting subperiosteal abscess, periodontal abscess, facial planes and spread of infections, acute cellulitis, ludwig's angina, cavernous sinus thrombosis, differential diagnosis of neck swelling and lymph node enlargement in and around the jaws and the neck.
- (ii) Hemorrhage diseases, disorders and lesions and complications associated with oral surgery.
- (iii) Extraction of teeth-Indications and contra-indications for extractions or other surgical operations.
- (iv) Cysts of bone and soft tissue of the oral cavity-Classification, development of cyst, general consideration of cystic lesions, treatment, post operative complication.
- (v) Wounds and injuries of the soft tissues of the facial areas-General consideration and classification of wounds: concussion, abrasion, laceration, penetrating wounds, gunshot wounds, burns, treatment of wounds & burns.
- (vi) Fractures of the jaws-Etiology, classification, examination, diagnosis, management and complications of fractures of mandible, maxilla zygoma and other facial bones.
- (vii) Surgical aspects of the oral tumours-Tumours of the hard tissues of the cavity, odontogenic tumours, osteogenic tumours, pregnancy tumours, tumours of the

- soft tissues of the oral cavity, carcinoma of the oral cavity, diagnosis and treatment.
- (viii) The temporomandibular joints-Anatomy, painful temporomandibular joint, aetiology symptoms, clinical findings, roentgenographic findings and treatment of T.M.J. dislocation, Ankylosis with complications.
  - (ix) pre-prosthetic Surgery-Edentulous ridge criteria, types of oral and extra oral surgical procedures, abnormalities of soft & osseous tissues, Frenectomy, ankyloglossia, ridge extension procedures.
  - (x) Plastic Surgery-Embryology, etiology, classification objectives, surgical correction of lip, alveolus and palate.
  - (xi) Local anaesthesia-Infiltration nerve block technique, the art of local indications and contra-indications of local anaesthesia.
  - (xii) General Anaesthesia-Role of general anaesthesia in dentistry, indications for general anaesthesia, preoperative preparation for in-patient or our patient general anaesthesia.
2. Conservative Dentistry and Dental Radiology:
- (i) Dental caries and classification of caries.
  - (ii) Class I and II cavity preparation in extracted molar teeth for silver amalgam restorations, Matrix band application, Insertion of lining materials, Amalgam plugging and finishing.
  - (iii) Class III and IV cavity preparation in extracted teeth and insertion and finishing of different anterior filling materials.
  - (iv) Class V cavity preparation in the extracted teeth and insertion and finishing of different filling materials.
  - (v) M.O.D. cavity preparation.
  - (vi) Retentive pin technique for different restoration.
  - (vii) Inlay preparation in the extracted teeth.
  - (viii) Jacket crown preparation in the extracted teeth.
  - (ix) Preparation of teeth for root canal treatment-Anaesthesia-isolation, surface sterilization.
  - (x) Root canal therapy.
  - (xi) Endodontics in children.
  - (xii) Periodontal diseases and the dental pulp.
  - (xiii) Problems in endodontics treatment.
  - (xiv) Technique of dental and oral radiography.
  - (xv) Radiation Hazard.

#### DENTAL SCIENCE

Part-II

Marks-100

1. **Prosthodontics.**

**Complete Denture Prosthesis-**

- (i) Impression procedure, preliminary and final.
- (ii) Construction of cast from impression, base or permanent base & wax rim.
- (iii) Selection of teeth (Shade & Mould).

- (iv) Alignment of teeth.
- (v) Trial of complete denture.
- (vi) Finishing of complete denture, fitting the finished denture (insertion).
- (vii) Complaints of patients.

**Partial Denture Prosthesis-**

- (i) Impression.
- (ii) Treatment planning and mouth preparation.
- (iii) Model Surveying.
- (iv) Component parts of partial denture.
- (v) Materials used in partial denture construction.
- (vi) Design of partial dentures.
- (vii) Wax pattern for cast denture and acrylic dentures.
- (viii) Recording of occlusion.
- (ix) Trial of partial denture.

**Crown and Bridge Prosthesis-**

- (i) General indication of crown.
- (ii) Tooth reduction steps & preparation of principle crown.
- (iii) Full veneer crown.
- (iv) Partial veneer crown.
- (v) Inlay retainer.
- (vi) Impression technique.
- (vii) Construction of porcelain jacket crown.
- (viii) Construction of veneered gold crown.
- (ix) Construction of veneered jacked crown using resin.
- (x) Abutment general principles retention and support.
- (xi) Pontics.
- (xii) Design of the pontic.
- (xiii) Construction of bridge.

**Cleft Plate and Oro-Facial Prosthesis-**

- (i) Obturation for intra oral loss at tissue by surgery.
- (ii) Implant denture.

**Orthodontics-**

- (i) Definition, Aims objectives and scope of Orthodontics.
- (ii) Growth and development of jaws, face and skull.
- (iii) Normal occlusion and its characteristics, factors responsible for establishment and maintenance of normal occlusion.
- (iv) Soft tissue morphology and behaviour.
- (v) Malocclusion, Types: Arch and skeletal classification.
- (vi) Aetiology of Malocclusion.
- (vii) Types, design of appliances and anchorage.
- (viii) Appliances for different tooth movement.
- (ix) Preventive, Interceptive and corrective treatment of Malocclusion.
- (x) Extractions in orthodontics.

**3. Children Dentistry, Preventive and Community Dentistry-**  
**Children Dentistry-**

- (i) Scope and importance of pedodontics.
- (ii) Diagnosis and treatment planning for child patient.
- (iii) Diseases of the oral mucous membrane and related problem in children.
- (iv) Nutritional factors in diseases.
- (v) Child psychology and management of child patient in dental office.
- (vi) Oral habits in children.

**3. Preventive & Community Dentistry-**

- (i) Prevention of dental caries with fluorides.
- (ii) Food and dental caries.
- (iii) Prophylactic and operative technique in dental caries prevention.
- (iv) Prevention of periodontal disease and dental caries in individual and mass level.
- (v) Dental ancillaries.
- (vi) Dental epidemiology, survey, and Introduction to Biostatistics.
- (vii) Parent counseling and child behavior.
- (viii) Planning for Manpower requirements in dental public health.
- (ix) An approach to dental Health Education for school children.
- (x) Field programme-for oral health surveys, motivation and oral Health Education.
- (xi) In rural areas to conduct survey of dental disease, Provide dental health education and emergency treatment.
- (xii) School-Health Programme-Dental care for school children and preventive Programme-Topical fluoride application and oral hygiene demonstration.

**4. Dental Jurisprudence-**

- (i) Legal rights and protection.
- (ii) Dental record keeping and person identification.
- (iii) Ethics, Particularly as they apply to the dental surgeon in his relation with parents, the public and his colleagues.
- (iv) The ethics of epidemiological studies and other projects.
- (v) An outline of forensic odontology.

**AGRICULTURE**

Total Marks-200

Part-I

Marks-100

- a) Production technology and costing of field crops- rice, wheat, maize, jute, sugarcane, tea, tobacco, lentil, groundnut, soyabean and mustard. External morphology and desirable qualities of these crops.
- b) Production technology of horticultural crops-Banana, papaya, pineapple, potato, tomato, cabbage, cauliflower, brinjal, onion, garlic and chili. Post-harvest management (e.g. processing and storage) of these crops.