

Bachelor Of Physiotherapy (BPT) 3rd Year

SUBJECT: SURGERY & CLINICAL ORTHOPAEDICS (Total Hours- 130)
(Subject Code: BPT- 301)

A. Surgery

| | |
|---------------------------------|--------------------------|
| Subject Title & Code | SURGERY(BPT- 301) |
| Duration | 50 |
| Total Hours | |
| Theory | |
| Total Hrs/week | 2 hrs/ Week |
| Method of Assessment | Theory |

A) GENERAL SURGERY

[50 hrs Didactic – 40 hrs + Clinical 10 hrs]

Syllabus

General Surgery (11hrs)

- 1] Effect of Anesthesia & surgical trauma..... (1 hr)
- 2] Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management ; Nutrition in the surgical patient ; Wound healing – basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, Hemostasis – components, hemostatic disorders, factors affecting bleeding during surgery. Transfusion therapy in surgery – blood components, complications of transfusion ; Surgical Infections ; General Post – Operative Complications and its management[6 Hours]
- 2] Inflammation – acute & chronic-signs, symptoms, complications & management (1hr)
- 3] Wounds / ulcers – classification, healing process, management (2hrs)
- 4] Common abdominal surgeries for G.I. tract, Genito-urinary system Scar during surgical approach through abdominal wall. Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy Nephrectomy, Prostatectomy Scar management in brief..... (3 hrs)
- 5] Radical mastectomy – complications & management(1 hrs)
- 6] Amputation – types, sites, complications & management..... (1hr)
- 7] Burn: Definition, Classification, Causes, Prevention, Pathological changes, Complications, Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of Skin Graft ; Flaps – Types and uses of Flaps..... [4 Hours]
- 8] Diseases of the Arteries and Veins : Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger’s disease, Raynaud’s Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins..... [3Hours]

Neuro Surgery (6 hrs)

1. Head Injury – management (1hr)
2. Intra cranial & Spinal tumors (1hr)
3. Surgeries of Head & neck in neurosurgical conditions & post operative care (2hrs)

Cardio vascular – thoracic surgery (7 hrs)

- 1] Surgical approach
- 2] Post operative complications & management in Thoractomy, Thoracoplasty, Lobectomy, pneumonectomy, Decortication, CABG, Valvular Surgery, Congenital Heart Disease Surgeries, Surgery for Peripheral Vascular Disease.

E.N.T. Surgery(5 hrs)

1. Upper respiratory track surgery & post operative care
2. Tracheostomy – indications, surgical approach & management
3. Surgery for cancer – indications & post operative care
4. Surgical procedures in VII nerve palsy
5. Vertigo

Ophthalmic Surgery(1hr)

Surgeries for III, IV & VI cranial nerve palsy

Plastic Surgery(10 hrs)

1. Skin grafts & flaps – Types, indications with special emphasis to burns, wounds, ulcers
2. Tendon transfers, with special emphasis to hand, foot & facial paralysis,
3. Keloid & Hypertrophied scar management
4. Reconstructive surgery of peripheral nerves
5. Micro vascular surgery

Clinical (10 hrs)

- A] Evaluation / presentation and recording of one case each in burns, wound & ulcer, Head Injury case, peripheral vascular condition, post Radical mastectomy, post thoracic surgery, post abdominal surgery
- B] Auscultation & its interpretation with special emphasis to Reading & interpretation of the X-ray chest.

OBSERVATION – one abdominal & one thoracic surgery & one surgery of skin graft / flap.

TEXT BOOKS

- 1] Under graduate Surgery by Nan
- 2] Bailey & Love's short practice of Surgery – 21 st edn
- 3] Textbook of surgery by S. Das
- 4] Manipal manual of surgery.

B) ORTHOPAEDICS

| | |
|---------------------------------|---------------------|
| Subject Title & Code | ORTHOPAEDICS |
| Duration | New:80 hrs |
| Total Hours | |
| Theory | |
| Total Hrs/week | 3 hrs |
| Method of Assessment | Theory |

[80 hrs] – Didactic -55 hrs + Clinical – 25 hrs

Syllabus

1. Traumatology..... [3 Hours]

Fracture: definition, types, signs and symptoms. Fracture healing. Complications of fractures. Conservative and surgical approaches. Principles of management – reduction (open/closed, immobilization etc). Subluxation/ dislocations – definition, signs and symptoms, management (conservative and operative).

2. Fractures and Dislocations of Upper Limb[6 Hours]

Fractures of Upper Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures: Fractures of clavicle and scapula. Fractures of greater tuberosity and neck of humerus. Fracture shaft of humerus. Supracondylar fracture of humerus. Fractures of capitulum, radial head, olecranon, coronoid, and epicondyles. Side swipe injury of elbow. Both bone fractures of ulna and radius. Fracture of forearm – Monteggia, Galeazzi fracture – dislocation. Chauffeur’s fracture. Colle’s fracture. Smith’s fracture. Scaphoid fracture. Fracture of the metacarpals. Bennett’s fracture. Fracture of the phalanges. (Proximal and middle.) Dislocations of Upper Limb - Anterior dislocation of shoulder – mechanism of injury, clinical feature, complications, conservative management (Kocher’s and Hippocrates maneuver), surgical management (putti plat, bankart’s) etc. Recurrent dislocation of shoulder. Posterior dislocation of shoulder – mechanism of injury, clinical features and management. Posterior dislocation of elbow - mechanism of injury, clinical feature, complications & management.

3. Fracture of Spine [4 Hours]

Fracture of Cervical Spine - Mechanism of injury, clinical feature, complications (quadriplegia); Management- immobilization (collar, cast, brace, traction); Management for stabilization, management of complication (bladder and bowel, quadriplegia). Clay shoveller’s fracture. Hangman’s fracture. Fracture odontoid. Fracture of atlas. Fracture of Thoracic and Lumbar Regions - Mechanism of injury, clinical features, management —conservative and surgical of common fractures around thoracic and lumbar regions. Fracture of coccyx. Fracture of Rib Cage - Mechanism of injury, clinical features, management for Fracture Ribs, Fracture of sternum.

4. Fractures and Dislocations of Lower Limb [5 Hours]

Fracture of Pelvis and Lower Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures:
 Fracture of pelvis. Fracture neck of femur – classification, clinical features, complications, management - conservative and surgical. Fractures of trochanters. Fracture shaft femur—clinical features, mechanism of injury, complications, management-conservative and surgical.
 Supracondylar fracture of femur. Fractures of the condyles of femur. Fracture patella. Fractures of tibial condyles. Both bones fracture of tibia and fibula. Dupuytren’s fracture Maisonneuve’s fracture. Pott’s fracture – mechanism of injury, management. Bimalleolar fracture Trimalleolar fracture Fracture calcaneum – mechanism of injury, complications and management. Fracture of talus. Fracture of metatarsals—stress fractures jone’s fracture. Fracture of phalanges.
 Dislocations of Lower Limb - mechanism of injury, clinical features, complications, management of the following dislocations of lower limb. Anterior dislocation of hip. Posterior dislocation of hip. Central dislocation of hip. Dislocation of patella. Recurrent dislocation of patella.

4] Management of Metabolic disorders..... (2hr)
 Osteoporosis, Osteomalacia, Rickets, Perthes disease, Slipped Capital Femoral, Epiphysis and Avascular Necrosis.

5] Brachial Plexus / Lumbo Sacral Plexus & Peripheral nerve injuries – sites, management(3hrs)

6] Congenital And Acquired Deformities
 a. Deformities of the spine – Scoliosis / Kyphosis) b.Congenital Deformities - CTEV. CDH. Torticollis, Genu varum.Genu valgum. Genu recurvatum Coxa vara. Pes cavus. Hallux rigidus. Hallux valgus. Hammertoe. Metatarsalgia. c. Congenital Malformation Spina Bifida, Meningocele meningocele(4hrs)

10] Reconstructive surgery for bone lengthening..... (1hrs)
 11] Reconstructive surgery in Polio & Cerebral Palsy (2hrs)
 12] Inflammatory/Infectious diseases of the bone & joints e.g. T.B, Osteomyelitis.. (2hrs)

13] Bone Tumors: classification, clinical features, management - medical and surgical of the following tumors : Osteoma. Osteosarcoma, Osteochondroma. Enchondroma. Ewing’s sarcoma. Giant cell tumor. Multiple myeloma. Metastatic tumors.(1hrs)

14] Surgical intervention for Arthritis like O.A., RA, Ankylosing Spondylitis... (2hrs)
 15] Reconstructive surgery in soft tissue lesions of Shoulder, Knee & Ankle... (3 hrs)
 16] Aetiology of Back Pain & surgical management(3 hrs)
 17] Common Sports injuries / overuse injuries & management(2 hrs)
 18] Joint Replacement surgeries..... (2 hrs)
 19] Hand injury & management (1hrs)
 20] X-rays of extremities & spine (1hrs)

CLINICAL (25 HRS)

- 1] Independent clinical orthopedic evaluation presentation & recording of
 - a] one acute soft tissue lesion [including nerve injury]
 - b] 2 cases of degenerative arthritis of extremity joint
 - c] 2 degenerative arthritis of spine
 - d] one case of acute P.I.D.
 - e] 2 chronic backaches
 - f] 1 post operative case of fractures of extremities
 - g] one traumatic paraplegia / quadriplegia

OBSERVATION –

At least 2 surgeries of # internal fixation, one knee/hip replacement & Reconstructive surgery of the tendons.

TEXT BOOKS

- 1) Adam’s outline of fractures – 8th edn
- 2) Adams outline of Orthopaedics – 8th edn
- 3) Apley’s textbook of Orthopaedics

**SCHEME OF EXAMINATION IN THE SUBJECT – “SURGERY & ORTHOPAEDICS”
THEORY – 80 MARKS + I.A. 20 MARKS TOTAL – 100 MARKS**

Theory Exam

Section A: Surgery

- Q1. MCQ’s 10 Marks
- Q2. Short Answer Questions (Any 3 out of 5)... 5 marks each..... 15 Marks
- Q3. Short Notes (Any 5 out of 6) 5 marks each..... 15 Marks

Section B: Orthopaedics

- Q1. MCQ’s 10 Marks
- Q2. Short Answer Questions (Any 3 out of 5)... 5 marks each..... 15 Marks
- Q3. Short Notes (Any 5 out of 6) 5 marks each..... 15 Marks

Practical Viva – 80 MARKS + I.A. 20 MARKS TOTAL – 100 MARKS

Practical Exam -

- 1] Gen. Surgery – Theory – 50 marks +Viva based on Clinical – 25 marks 75 marks
- 2] Plastic surgery – Theory ----- 25 marks
- 3] Theory-in Orthopedics ----- 50 marks
- 4] Ward exam in Clinical Orthopedics ----- 50 marks
- Total ----- 200 marks

10% of the average of the total marks to be considered as Internal assessment.

SUBJECT: GENERAL MEDICINE (Subject Code: BPT- 302)

| | |
|--|----------------------------|
| Subject Title & Code | MEDICINE (BPT- 302) |
| Duration Total Hours Theory | New: 120 hrs |
| Total Hrs/week | 3 hrs |
| Method of Assessment | Theory |

Syllabus

A- CARDIO-VASULAR & RESPIRATORY MEDICINE (29 hrs)

B-

1] Cardio-vascular diseases – (12 hrs)

a) Hypertension – systemic, I.H.D. –Myocardial infarction, Arrhythmia – classification Valvular Heart Disease – i) Congenital ii) Acquired, Rheumatic Fever, Congenital Heart Disease, Infective Endocarditis, Geriatric Cardio Vascular Problems & management, ECG – Normal & Variations due to ischemia & infarction

2] Diseases of the respiratory system (17 hrs)

a) Common Infectious diseases like Tuberculosis Pneumonia, Lung Abscess, Bronchiectasis, Diseases of Pleura like Pleural Effusion, Pneumothorax, Hydropneumothorax, Empyema, Occupational lung diseases like Silicosis Asbestosis, Pneumoconiosis, Brucellosis, Farmer’s Lung, Obstructive Lung Diseases like Bronchitis, Emphysema, Bronchial Asthma, Cystic Fibrosis, Interstitial Lung Diseases, Geriatric respiratory problems & management, Intensive Medical Unit – Infrastructure & Treatment, Introduction of clinical examination – Breath sounds / X ray chest /Blood gas analysis / P.F.T.

B - NEUROLOGY (31 hrs)

1] Circulation of the brain & spinal cord, Cerebro – vascular accidents – Thrombosis, Embolism, Haemorrhage, Stroke – Level of Lesion & Management, Extra Pyramidal lesions – Basal Ganglia, Parkinsonism, Athetosis, Chorea, Dystonia & Spasmodic Torticollis, Polyneuropathy, G B Syndrome, Diabetic, Alcoholic & SACS, Disorders & Diseases of muscle, Myopathy – Types Muscular Dystrophy – Types Inflammatory Disorders – Polymyositis & Dermatomyositis, Myotonia, Disorders of Anterior Horn Cell, Motor Neurone Disease, SMA, Syringomyelia, Peroneal Muscular Atrophy, Polio, Multiple Sclerosis, Infections of the nervous system like Encephalitis, Neurosyphilis, HIV infection, Herpes, Meningitis, Transverse Myelitis, Tabes Dorsalis & T.B. Spine, Epilepsy, Tetanus, Alzheimer’s Disease, Disorders of cerebellar function, Disorders of cranial nerves & Special Senses, Disorders of Myoneural Junction – Myasthenia Gravis & Myasthenic Syndrome, Dysfunction of Autonomously Nervous System is Spinal Cord Lesions, Neurogenic Bladder, Cerebro Spinal Fluid (1hr)

I) Formation & Absorption

- II) Status in Various Disorders
19] Sexually transmitted diseases (1hr)

C - General Medicine (30 hrs)

1] Disorders of Endocrine system (4hrs)

- i) Diabetes (1hr)
- ii) Thyroid, Pituitary & Adrenal conditions (2hrs)
- iii) Calcium Metabolism (1hr)

2] Rheumatological Conditions (5 hrs)

- i) Rheumatoid Arthritis (2hrs)
- ii) S L E
- iii) S S A (3hrs)
- iv) Gout
- v) Polymyositis

3] Geriatric Conditions (5 hrs)

- i) Aging Process (1hr)
- ii) Osteoporosis (1hr)
- iii) General Health Care, Wellness Clinic (1hr)
- iv) Hypertension (1hr)

4] Nutrition Deficiency Disease (5hr)

5] Drug Abuse / Intoxication (1hr)

6]-Common conditions of the G.I. Tract -----(5 hrs)

7] Diseases of the blood : Examinations of blood disorders – Clinical manifestations of blood disease; Anemia – signs and symptoms – types and management ; Hemophilia - Cause – clinical features severity of disease – management – complications due to repeated haemorrhages – complications due to therapy..... [2 Hours]

D- DERMATOLOGY [20 HRS]

Syllabus

- 1] Types of skin eruption- classification-weeping & Dry skin lesions
- 2] Leprosy-Types- Identification-management of neuropathic Hand & foot
- 3]-Disorders of skin pigmentation-causes-Types[special emphasis to vitiligo]-
Management
- 4) In brief bacterial scabies, fungal infection
- 5] H.I.V. & Sexually transmitted skin lesions
- 6] Auto-immune disorders-Psoriasis, Dermatitis, Dermatomyositis, S.L.E.
- 7] Diseases of the scalp-Dandruff, Hair loss, Alopecia, -magement
- 8]-Acne-types-management

SCHEME OF EXAMINATION IN “ MEDICINE ”

THEORY – 80 MARKS + INTERNAL ASSESSMENT – 20 MARKS TOTAL – 100 MARKS

Section A-MCQ-Q-1] [20x1] single best answer
 [Based on all the topics included in Medicine syllabus] ----- 20 marks
 Section B-SAQ – Q2] to attempt any FIVE out of Six answers – [5 x 3]
 [based on Cardiovascular or Respiratory conditions] ----- 15 marks
 Q3] to attempt any THREE out of Four answers [5 x 3]
 [based on Neurology] ----- 15 marks
 # Section C-LAQ, Q4][compulsory] based on Neurology ----- 15 marks
 Q5] [based on Cardio-vascular conditions] ----- 15 marks
 OR
 Q6] [based on Respiratory conditions] ----- 15 marks
 #L.A.Q. should specify the break up of marks e.g. [3+5+7]

INTERNAL ASSESSMENT – One test each in

- 1] Theory – General Medicine, Rheumatology & Gerontology 25 marks
 - 2] Theory – Cardio-vascular & Respiratory Medicine 50 marks
 - 3] Theory – Neurology 50 marks
 - 4] Clinical – General Medicine, Rheumatology & Gerontology 25 marks
 - 5] Clinical – Cardio-vascular & Respiratory Medicine 25 marks
 - 6] Clinical – Neurology 25 marks
 - *7] Pediatrics 50 marks
 - *8] Dermatology 50 marks
- TOTAL ----- 300 marks

Internal Assessment marks to be calculated out of 20

Recommended books:

- 1. Davidson’s Principles and Practice of Medicine
- 2. Harrison’s Internal Medicine
- 3. API- Text book of Medicine – 5th edn
- 4. Golwalla – Medicine for students

**SUBJECT: OBSTETRICS/GYNAECOLOGY & PAEDIATRICS
 (TOTAL- 70 HOURS) (Subject Code: BPT- 303)**

A.OBSTETRICS/GYNAECOLOGY

| | |
|--|---|
| Subject Title & Code | OBSTETRICS & GYNAECOLOGY(BPT- 303) |
| Duration Total Hours Theory | 40 hrs |
| Total Hrs/week | 2 hrs |
| Method of Assessment | Theory |

Syllabus

1. Anatomy and physiology of female reproductive system. (2hrs)
2. Physiology of Puberty & Menstruation, Abnormalities & common problems of Menstruation e.g. Amenorrhoea, Abnormal uterine bleeding, dysmenorrhoea, endometriosis.... (3 hrs).
3. Uro-genital dysfunction (3hr)
 - i) Uterine prolapse – classification & management (Conservative / Surgical)
 - ii) Cystocoele, Rectocoele, Enterocoele
 - iii) Urinary Incontinence
4. Sterility – management(1hr)
5. Neoplasm of Female reproductive organs – surgical management(1hr)
6. Methods of family planning(1hr)
7. Pre, Peri & Post Menopause – Physiology, Complications & management ..(2hrs)
8. Labour(4hrs)
 - Normal – Events of Ist IInd & III rd Stages of labour, ii) Complications during labour & management, iii) Caesarian section iv) Physiotherapy related to labour
9. Post Natal – Puerperium, lactation, Methods of Contraception, complications of repeated child bearing with small gaps(2hrs).
10. Pelvic Inflammatory Diseases with special emphasis to backache due to Gynaec / Obstetrics conditions(2hr)
11. Surgical procedures like D&C, Hysterectomy etc..... (1 hr)
12. Neoplasm of Female reproductive organs – surgical management ..(1hr)
13. Methods of family planning..... (1hr)
14. Pregnancy – Fertilization, Development of the foetus, Normal gestations, Abnormal / Multiple gestations, Common Complications during pregnancy like P I H, Eclampsia, Diabetes, Hepatitis, German Measels, TORCH infection. ... (3 hrs)
15. Diagnosis of pregnancy, physiological changes, Antenatal and Postnatal care..... (1 hr)
16. Importance of physiotherapy in gyneacological disorders.

CLINICAL/ Practical

Evaluation & presentation of Two cases Each in

a) Uro-genital dysfunction, b) Antenatal care, c) Postnatal care

i) Following normal labour

ii) Following Caesarean section

d) Pelvic Inflammatory Diseases

OBSERVATION – One Normal & One Caesarian delivery, One case of Tubectomy & One Hysterectomy / Repair of the Uro-genital Prolapse.

Emphasis to be given to the Urogenital dysfunction / Obstetrical conditions / age related Gynecological problem

Text Book:

- 1) Text book of Gynecology – by Dutta – New Central Book Agency
- 2) Text book of Obstetrics by Dutta – New Central Book Agency

B. Pediatrics

| | |
|---------------------------------|-------------------|
| Subject Title & Code | Pediatrics |
| Duration | 30 hrs |
| Total Hours | |
| Theory | |
| Total Hrs/week | 1 hrs |
| Method of Assessment | Theory |
| | |

Syllabus

- 1] Normal intra-uterine development of foetus (1hr)
- 2] Normal development & growth (2hrs)
- 3] Immunization, Handling of the child, Significance of breast-feeding (1hr)
- 4] Common causes for Developmental disorders like Sepsis, Prematurity, Asphyxia & Hyperbilirubinemia (1hr)
- 5] Brain damage-Cerebral Palsy-types & Medical Management (2hrs)
- 6] Spinal Cord Disorders like Poliomyelitis, Spinal Dysraphism, Spina Bifida, Meningocele, Myelomeningocele (2hrs)
- 7] Common infections
 - a) C.N.S. & peripheral nervous system (1hrs)
 - b) Typhoid, rubella, mumps, measles, tetanus, diphtheria, chicken pox, hepatitis(1hr)
- 8] Epilepsy (1hr)
- 9] Mental Retardation (1hr)
- 10] Genetically transmitted neuro-muscular conditions (1hr)
- 11] Malnutrition related condition (1hr)
- 12] Juvenile R A & other immunological conditions of Musculoskeletal system (1hr)
- 13] Common diseases of the respiratory system like Asthma, Bronchitis, T.B. & Pneumonia & bronchiectasis (2hrs)
- 14] Rheumatic & Congenital heart disease (2hrs)
- 15] Evaluation of baby , Immunization program, Problems and management of low birth weight infants, Paediatric basic and advance life support(BLS), Paediatric Intensive care unit, Learning disability, Autistic spectrum disorder, Attention deficit hyperactivity disorder, Down's syndrome

CLINICAL (10 HRS)

- 1] Normal & abnormal reflexes in neonate & child
- 2] Examination of the nervous system

Text Book:

- 1) Essentials of Paediatrics – by O.P. Ghai-Inter Print publications
- 2) D.K. series in Paediatrics

SCHEME OF EXAMINATION

THEORY – 80 MARKS + I.A. 20 MARKS TOTAL – 100 MARKS

Section A: OBSTETRICS & GYNAECOLOGY (40 Marks)

Q1. MCQ's 10 Marks

Q2. Short Answer Questions (Any 3 out of 5)... 5 marks each..... 15 Marks
 Q3. Short Notes (Any 5 out of 6) 5 marks each..... 15 Marks

Section B: Paediatrics (40 Marks)

Q1. MCQ's 10 Marks
 Q2. Short Answer Questions (Any 3 out of 5)... 5 marks each..... 15 Marks
 Q3. Short Notes (Any 5 out of 6) 5 marks each..... 15 Marks

Practical Viva – 80 MARKS + I.A. 20 MARKS TOTAL – 100 MARKS

Practical Exam -

- 1] Obstetrics –
- 2] Gynecology
- 3] Paediatrics

10% of the average of the total marks to be considered as Internal assessment.

**SUBJECT: PHYSICAL DIAGNOSIS & MANIPULATIVE SKILLS
 (Subject Code: BPT- 304)**

| | |
|---------------------------------|---|
| Subject Title & Code | PHYSICAL DIAGNOSIS & MANIPULATIVE SKILLS(BPT- 304) |
| Duration | New: 360 Hours |
| Total Hours | |
| Theory | 90 |
| Practical | 270 |
| Total Hrs/week | 8 |
| Lectures | 3hrs/week |
| Practicals/ Clinicals | 5hrs/week |
| Method of Assessment | Theory and Practical |

Syllabus

1] General principles of Human development & maturation..... [5 Hours]

a]-aspects-physical, motor, sensory, cognitive, emotional,cultural, & social; b]-Factors influencing human development & growth- Biological ,environmental inherited; c]-Principles of maturation –i]-in general, ii]- in anatomical directional pattern-Cephalo-caudal –proximo-distal ,centro-lateral, Mass to specific pattern, gross to fine Motor Development of nervous system-development ;iii]- nuerodevelopment of Hand function

2] Electrodiagnosis [12 Hours]

Bioelectricity-Physiology Of generation & propagation of action potential,–Volume conduction - a]-Therapeutic current-as a tool for electrodiagnosis-physiological principles -use of alternating & direct currents in electro-diagnosis such as sensory & Pain threshold, Pain tolerance,-Short & long pulse test, S.D. curves ,Integrated EMG, use of Biofeedback unit for assessment of muscle function b]- Principles of Electro-myography- Motor unit –Normal Characteristics- activity at rest, recruitment/frequency pattern at minimal activity, Interference pattern-abnormal E.M.G.

pattern c]-Principles of nerve conduction- d]-Late responses-F-wave, H reflex, Blink reflex, e]- electro- physiological principles of assessment of Myoneural junction- f]-E.M.G. instrumentation, basic components, panel diagram, types of electrodes

3] Basics in Manual Therapy, & application in Clinical reasoning.....[12 Hours]

a]-examination of joint- stability- normal/abnormal, b]-Mobility-assessment of accessory movement, & End feel c]-assessment of articular & extra-articular soft tissue status- differentiation of spasm, acute & chronic muscle hold, tightness /pain--original & Referred ;d]-Basic principles of mobilization skills for joints & soft tissues-(Mainland, Kaltenborn, Mulligan Mec`kenzie Muscle energy technique, myofascial stretching, Cyriax, trigger points , Neural Tissue mobilisation i.e.-slump, butler, & ULTT)- Indications, -contra-indications, Practise of Manipulative therapy basic skills of mobilization [Kaltenborn, Mulligan, Maitland, & Cyriax friction massage only] of extremities on Models.

4]-Assessment of movement dysfunction [18 Hours]

Higher functions/cranial nerves/altered muscle strength,/power /balance /endurance/ tone, spasticity, incoordination, abnormal deep & superficial reflexes ,/limb-length discrepancy /Goniometry/Trick movements/Special Tests /Assesment Scales /altered Posture & Gait— Functional analysis as per I.C.I.D.H-II norms-Functional diagnosis-

5]-Interpretation of various investigations like - Radiological[X-rays] , routine Biochemical investigations , Electrodiagnostic findings [5 Hours]

6] Assessment of cardio -pulmonary dysfunction-Chest expansion, Abnormal breath sounds, Quality of life questionnaires /Borg scale /Principles of exercise tolerance test-assessment of vital parameters in simple functional test.-6 minutes walk test /symptom limited test/Breath holding test/ Spirometry / Peak-flowmetry -Theoretical bases of Bruce's protocol, Astrand Protocol, & step test [10 Hours]

7) Assessment of Musculoskeletal Dysfunction [20 Hours]

i) Tightness ii) Joint Mobility iii) Muscle strength iv) Limb Length v) Trick Movement vi) Posture vii) Gait viii) Special Test ix) Functional Diagnosis using ICF
x) Interpretation of X-ray of extremities & spine, routine, bio-chemical investigations

8] Assessment of Hand [2 Hours]

i) Sensations ii) Mobility of joints
iii) Strength iv) Special Tests like Froment's Sign, Bunnel – Litter's Test, Phalen's Test, Tinel's Sign, Wartenberg's Sign. v) Hand Function – Precision & Power Grips

9] Assessment of pain..... [3 Hours]

i) Intensity & quality ii) Objective assessment & documentation – VAS, Mc Gill's modified questionnaire, Numerical Rating Scale.

10] Assessment of Obesity [3 Hours]

- i) Pathophysiology
- ii) Assessment – BMI, Waist – Hip Ratio

Practical/ CLINICALS (270 hrs)

- 1] Practice of Manual Therapy in Kaltenborn, Maitland, Mulligan & Cyriax on extremities only & only on models
- 2] Electro-diagnostic assessment – S D Curve, Faradic Galvanic Test, Test for Sensory & Pain Threshold, Test for Pain Tolerance.
- 3] Identification of abnormal breath sounds, measurement of chest expansion, pattern of breathing, Vital parameters, Grades of Dyspnoea, Rate of Perceived exertion, Ankle Brachial Index.
- 4] Exercise tolerance testing – 6 minutes walk test & Bruce’s protocol on models only
- 5] Practice to Neuro Therapeutic Skills of NDT, PNF, Rood’s Technique & Brunnstrom on models only.
- 6] Interpretation of reports – EMG, NC Studies, ABG, PFT, X-ray of Chest, Extremities & Spine & ECG.

Term work in Clinical

- A] Documentation & Interpretation of following investigations
 - i] Electro diagnosis –
 - a) SDC
 - b) Faradic Galvanic Test
 - c) Test for Sensory / pain Threshold
 - d) Test for Pain tolerance – Any 3
 - ii] Cardio Vascular & Pulmonary – ABG, PFT, ECG, X-ray Chest, Exercise Tolerance Test-1 each.
 - iii] Neurological – Scales like Modified Ashworth, Berg’s Balance, DGI, Glasgow Coma, Barthel Index, STREAM Format – Any 3 & EMG & NC Studies – 2 each.
 - B] Case presentation with Functional diagnosis – Three cases Each in –
 - i] Musculoskeletal
 - ii] Neurological
 - iii] Cardiovascular & Pulmonary
- To maintain the Record/Journal of the term work & to get each assignment duly signed by Head.

SCHEME OF EXAMINATION

THEORY -80 MARKS ;IA-20 MARKS TOTAL 100 MARKS
 CLINICAL – 80 MARKS I.A. 20 MARKS TOTAL 100 MARKS
 THEORY – Pattern of paper setting
 Section A- M.C.Q. Q-1 [20 x 1] based on MUST KNOW area of entire syllabus – 20 marks
 Section B-S.A.Q. Q-2] To answer any Five out of Six [5 x 3] ----- 15 marks
 Q3] to answer any Three out of Four [3 x 5] ----- 15 marks
 #Section C-L-A QQ-4] ----- 15 marks
 Q-5] ----- 15 marks
 OR

Q6] based on ----- 15 marks
Each LAQ should give break up of 15 marks e.g. [3+5+7] etc

CLINICAL Pattern of Examination

A] Long Case – any medical or surgical condition 35 marks

[Time maximum 30 minutes for students for evaluation]

i] Psychomotor & affective – skill of History taking [5marks]

ii] Skill of clinical examination [10 marks]

iii] Skill of objective Diagnostic procedure [10 marks]

iv] Cognitive – Ability to justify bases for functional diagnosis [10 marks]

B] Short Case I] Mobilisation Technique (On Models) [10marks]

II] Neuro Therapeutic Skills – NDT / PNF / Rood's / Brunnstrom (On Models)

OR

II] Electro Diagnosis – SD Curve / Faradic Galvanic Test / Test for Sensory & Pain Threshold & Test for pain Tolerance (On Patient) [10 marks]

OR

II] Exercise Tolerance Test (On Model) [10 marks]

C] Spots – (Five) a] X ray

b] Pulmonary Function Test

c] Blood gas analysis [4 x 5 = 20 marks]

d] E.C.G.

e] E.M.G. / N.C. studies

4] Journal ----- 5 marks

INTERNAL ASSESSMENT

THEORY 1 Terminal & 1 Preliminary Examination of 100 marks each as per University pattern.

CLINICAL / PRACTICAL

1 Terminal & 1 Preliminary Examination of 100 marks each as per University pattern.

Internal Assessments marks should be calculated out of 20 marks in Theory & 20 marks in Clinical / Practical

SUBJECT: PHARMACOLOGY (Subject Code: BPT- 305)

| | |
|--|--------------------------------|
| Subject Title & Code | Pharmacology (BPT- 305) |
| Duration Total Hours Theory | New: 70 hrs |
| Total Hrs/week | 3 hrs |
| Method of Assessment | Theory |

Syllabus:

A] MUST KNOW –

- i] Drugs described in topics 2 to 9;
- ii] Pharmacological effects & mechanism, Formulation, Route of administration, salient Pharma-kinetic feature,
- iii] adverse Reactions;
- iv] Precautions & contra-indications.

B] DESIRABLE

- I] Major group of drugs described in topics 10 to 14
- II] bases of use in indicated conditions;
- III] Common & serious Adverse Reactions

1. General Pharmacology [5 Hours]

Introduction, Definitions, Classification of drugs, Sources of drugs, Routes of drug administration, Distribution of drugs, Metabolism and Excretion of drugs Pharmacokinetics, Pharmacodynamics, Factors modifying drug response, Adverse effects.

2] Drug activity of CNS ----- 9 hrs

-Introduction [1hr] alcohols + Sedatives & hyphotics [2hrs], Anti-convulsions [1hrs]
Analgesics & antipyretics – specially Gout & R.A. [3 hrs] Psycho Therapeutics
[1] ;General anaesthetic + local anaesthetic [1hr]

2. Autonomic Nervous system..... [5 hours]

General considerations – The Sympathetic and Parasympathetic Systems, Receptors, Somatic Nervous System, Cholinergic and Anti-Cholinergic drugs, Adrenergic and Adrenergic blocking drugs, Peripheral muscle relaxants.

3. Cardiovascular Pharmacology[10 Hours]

Drugs Used in the Treatment of Heart Failure: Digitalis, Diuretics, Vasodilators, ACE inhibitors
Antihypertensive Drugs: Diuretics, Beta Blockers, Calcium Channel Blockers, ACE Inhibitors,
Central Acting Alpha Agonists, Peripheral Alpha Antagonists, Direct acting Vasodilators,
Antiarrhythmic Drugs, Drugs Used in the Treatment of Vascular Disease and Tissue Ischemia :
Vascular Disease, Hemostasis Lipid-Lowering agents, Antithrombotics, Anticoagulants and

Thrombolytics Ischemic Heart Disease – Nitrates, Beta-Blockers, Calcium Channel Blockers
Cerebral Ischemia, Peripheral Vascular Disease.

4] Drugs acting on Respiratory system ----- 4 hrs
for upper respiratory tract infections – sinusitis- cough, laryngitis, pharyngitis
[2 hr], For Bronchial asthma – [1hr] for COPD – effects of prolonged drug administration [1hr]

5. Inflammatory/Immune Diseases [14 Hours]
Non-narcotic Analgesics and Nonsteroidal Anti-Inflammatory Drugs: Acetaminophen, NSAIDs,
Aspirin, Nonaspirin NSAIDs, drug Interactions with NSAIDs
Glucocorticoids: Pharmacological Uses of Glucocorticoids, adverse effects, Physiologic Use of
Glucocorticoids Drugs Used in Treatment of Arthritic Diseases: Rheumatoid Arthritis,
Osteoarthritis, Gout Drugs Used in the Treatment of Neuromuscular Immune/Inflammatory
Diseases: Myasthenia gravis, Idiopathic Inflammatory Myopathies, systemic lupus
Erythematosus, Scleroderma, Demyelinating Disease

6] Insulin [1hr] & oral anti-diabetic drugs [1hr] ----- 2 hrs

7] Chemo – therapy ----- 3 hrs
i) general principles [1hr], ii) anti Tuberculosis [1hr] , & iii) anti –leprosy [1hr]

8] Other Chemo Therapeutic drugs ----- 2 hrs
i] Sulfa drugs in urinary tract infection, ii] tetra / chlora, iii] penicillin
iv] cephalosporin, v] aminoglycosides, vi] Microlytic

9] Endocrine ----- 4 hrs
i] introduction, Thyroid & Antithyroid [1hr]; ii] Estrogen + Progesterone [1] iii] steroids anabolic
steroids [2hrs]

10] Drugs in G.I. tract ----- 4 hrs
i] Peptic ulcer + antiemetic [3hrs], ii] Diarrhoea & constipation [1hr]

11] Hematinics, Vitamin B; Iron ----- 1 hrs

12] Dermatological --- Scabies – Psoriasis – Local antifungal ----- 1 hrs

13] Vaccines & Sera ----- 1 hrs

14] Vitamin – D, Calcium, Phosphorus, Magnesium ----- 1 hrs.

SCHEME OF EXAMINATION –

[Theory – 40 marks + Internal assessment – 10 marks]

[There shall be No L. A. Qs in this paper]

Section A Q-1, M.C.Q.- based on single best answer in MUST KNOW area -- 10 marks

* Section – B-Q-2-S.A. Q – To answer any FIVE out of six [5 X 3] ----- 15 marks

- * Section –C-Q-3-S.A.Q. – To answer any THREE out of four [3 x 5] ----- 15 marks
- * Emphasis should be given to the drugs related to Musculo-skeletal/Psycho-Neurological / Cardio-Vascular / Respiratory conditions / analgesics & antiinflammatory conditions

INTERNAL ASSESSMENT –

Two papers – terminal and prelim examination of 40 marks each. TOTAL 80 Marks

Recommended Textbooks

1. *Lippicott's Pharmacology.*
2. *Essential of Medical Phramacology by Tripathi*
3. *Text book of Medical Pharmacology by Padmaja udaykumar*
4. *Pharmacology by N.Muruges*
5. *Pharmacolgy & Pharmacotherapeutics by Satoskar.*