Mahatma Gandhi University

Of

Medical Sciences & Technology, Jaipur

Syllabus

Bachelor of Physiotherapy (BPT)

(4½ Years Degree Course including 6 months Rotatory Internship)

Edition 2020-21

Notice

1. The University reserves the right to make changes in the Rules/Regulations/ Syllabus/Books/Guidelines/Fees-Structure or any other information at any time without prior notice. The decision of the University shall be binding on all.

2. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

RULES & REGULATIONS

BACHELOR OF PHYSIOTHERAPY (BPT)
(4 ½ years Degree Course including 6 months Rotatory Internship)

MEDIUM OF INSTRUCTION
English shall be the medium of instruction.

OBJECTIVE
Objective of the Bachelor of Physiotherapy course which is complementary to medicine shall be to allow the students:

1. To acquire adequate knowledge of basic medical subjects and to develop skill and techniques of therapeutic exercises, electrotherapy and soft tissue manipulation so as to work as a rehabilitation team member & can coordinate with other team members to provide physiotherapeutic management of various medical and surgical conditions of patients.
2. To acquire skills in management, research and teaching in physiotherapy as well as guidance and counselling of patients regarding physiotherapy.
3. To acquire proper attitude for compassion and concerns for patients and welfare of physically handicapped in the community.
4. To practice moral and ethical values and evidence base practice with regard to physiotherapy.

ELIGIBILITY FOR ADMISSION
1. Candidate should have passed 10+2 (12th standard) or equivalent examination with science stream i.e. Physics, Chemistry, Biology and English with 45% marks in the aggregate of all the subjects prescribed for the examination for general and 40% for SC/ST/OBC candidate.
2. Candidate should have completed the minimum age of 17 years as on 31st December of the year of admission to B.P.T. first year course.
3. Every candidate before admission shall furnish a certificate of medical fitness from an authorized Government Medical Officer that the candidate is physically fit to undertake the Physiotherapy course.
4. Selection of the candidate shall be on the basis of merit of 10+2 examination or Joint Entrance Examination conducted by the University.
5. In case of 2 years Diploma Holder of Physiotherapy, candidate will get admission in BPT II year and will complete the BPT course as per MGUMST, Jaipur norms, subject to availability of vacant seat(s).
6. In case of 3 years Diploma Holder of Physiotherapy, candidate will get admission in BPT III year and will complete the BPT course as per the MGUMST, Jaipur norms, subject to availability of vacant seat(s).

ENROLMENT
Candidates admitted to the Bachelor of Physiotherapy course shall be enrolled with the university by remitting the prescribed fee along with the application form for enrolment duly filled in and forwarded to the university through Principal of the College within stipulated date.

SYLLABUS
1. The curriculum and the scheme of examination for the course shall be as prescribed by the University from time to time.

2. The aim and objectives of the BPT curriculum is to educate and train a student as a qualified physiotherapist who will be able to impart health services safely and effectively to community in terms of health promotion, functional, prevention and treatment of dysfunction in different fields of medical science.

COMMENCEMENT OF THE COURSE

The Course shall commence from the 1st August of every Academic year.

CONDUCTION OF THE UNIVERSITY EXAMINATION

University examination shall be conducted twice in a year; that is Main and Supplementary Examination.

WORKING DAYS

Each academic year shall consist of not less than **270** working days including examination.

ATTENDANCE

1. No candidate shall be permitted to appear in B.P.T First/Second/Third/Fourth university examination unless he/she has attended the course for the prescribed period and produces the necessary certificate of attendance and satisfactory conduct from the Principal of the College.
2. A candidate is required to compulsorily attend 75% of the theory classes and also 75% of the practical classes held annually in each of the prescribed subject(s) separately, those not fulfilling the above criteria will not be eligible to appear for the university examination in the concerned subject(s).

SCHEME OF EXAMINATION

1. There shall be Internal Assessment Examinations in Theory as well as Practical at the College level. These shall carry 30% of total marks assigned to Theory as well as Practical Examination.
2. At the end of every academic year, after completion of the course of study there shall be University Theory & Practical Examination. These shall carry 70% of total marks assigned to Theory as well as Practical Examination.

Internal Assessment Examination

1. Theory and practical paper(s): 30% of total marks shall be allotted to the Internal Assessment for each subject. Three internal assessment examinations will be held in each subject (Theory and Practical separately) before the commencement of the theory university examination (Main) in each academic year. Every candidate shall be required to obtain at least 40% marks in the aggregate of any best of two out of the three internal assessment tests in each subject. Candidates failing to secure 40% marks in the aggregate of best two internal assessment tests in any subject shall not be allowed to appear in concerned subject(s) in the ensuing university main examination. In case the examination forms have already been filled and submitted in the university, the Principal will detain such students from appearing in the University examination of concerned subject(s). Mode and number of internal assessment tests will be determined at the level of the Principal of the college. The candidates shall be required to obtain at least 40% marks in each subject in an improvement internal assessment test to qualify and appear in the university forthcoming supplementary examination.

2. A candidate may improve his/her internal assessment marks whenever he/she reappears. In case the candidate does not opt for improvement or doesn't improve, his/her earlier internal assessment marks would be conveyed by the Principal to the university.

University Examination

1. There shall be two examinations of BPT-I year, II year, III year & IV year Course in one academic year, the Main examination and subsequent Supplementary examination.
2. A candidate who has completed a regular course of study prescribed for BPT-I year for one academic year shall be eligible to appear at BPT-I year examination.
3. A candidate failing in any number of subjects at the main examination shall be allowed to appear in the failing subjects at the ensuing supplementary examination.
4. A candidate who has not passed even a single subject (theory & practical) of BPT-I year, II year or III year in supplementary examination shall not be promoted to respective next higher class.
5. A candidate who has passed one or more subject(s) of BPT-I year main/supplementary examination will be promoted to Second year (BPT-II year) course and after completion of regular course of study for one academic year shall be eligible for BPT-II year examination. He/she shall also be permitted to appear in the due papers of BPT-I year examination along with BPT-II year examination. The result of BPT-I year & II year examination will be declared.
6. A candidate who has passed one or more subject(s) of BPT-II year Main/Supplementary examination will be promoted to Third year (BPT-III year) course and after completion of regular course of study for one academic year shall be eligible for BPT-III year examination. He/she shall also be permitted to appear in the due papers of BPT-I year and/or II year examinations along with BPT-III year examination. The result of BPT-I year, II year &III year examinations will be declared.
7. A candidate who has passed one or more subject(s) of BPT-III year main/supplementary examination will be promoted to the Final year (BPT-IV year) course and will pursue study for one academic year of Final year (BPT-IV year) Course.
8. A candidate shall be eligible to appear for Final year BPT (IV year) examination only when all the prescribed papers of BPT-I year, II year & III year examinations have been passed by the candidate, even though he/she has attended all the theory and practical classes of Final year (BPT-IV year) course.
9. A candidate will be permitted to avail any number of attempts to pass all the papers of BPT-I year, II year, III year & IV year Course but he/she will be required to complete the entire BPT course within eight years of his/her admission to BPT-I year course.

Paper Setter/Examiner

1. All the examiners, paper setters, Theory examination answer books evaluators, Internal and External Examiners for Practical examinations shall be appointed by the President of the University.
2. Qualification of the Paper setter / Examiner: Masters degree (MPT) with 3 years of full time teaching experience from recognized university for physiotherapy papers and for medical papers the examiner should have 3 years of teaching experience after doing post-graduate qualification in the relevant/ broad specialty, or Master degree MPT in specialty concerned may be allowed. Distance Education Degree holder can not work as the faculty or Examiner.
3. Examiner / Paper setter: Paper setter can be an examiner

Duration, Distribution of marks and Pattern of Question papers

1. The question paper shall cover the entire syllabus of the subject.
2. Each subject (Theory & Practical) shall carry 30% marks for internal assessment and 70% marks for the University examination.
3. Duration of Examination: Each written paper of University examination of 70 marks shall be of 03 hours duration.
4. Pattern of question papers :

All questions shall be required to be attempted. There may be internal choice(s) in the questions :

(A) Paper carrying 70 Marks :

Long answer questions (4 out of 6)	4x10= 40
Short answer questions (6 out of 8)	6x5= 30

(B) Paper carrying two sections of 35 Marks each:

Section A

Long answer questions (2 out of 3)	2x10= 20
Short answer questions (3 out of 5)	3x5= 15

Section B

Long answer questions (2 out of 3)	2x10= 20
Short answer questions (3 out of 5)	3x5= 15

Criteria for Pass

1. In order to pass an examination a candidate must secure 50% marks in theory (inclusive of internal assessment) and practical (inclusive of internal assessment) separately in each subject. In case of Section A & Section B of a Paper, students will have to secure 50% marks combined to pass the paper.
2. A successful candidate appearing in whole examination in the first attempt and obtaining 75% or more marks in the aggregate of a subject shall be declared to have passed the subject with distinction.

Award of Grace Marks

1. A student who appears in the whole examination in first attempt and obtains the required minimum pass marks in the total aggregate of an examination but fails to obtain the minimum pass marks in one subject (in theory and / or practical as the case may be) will be awarded the grace marks up to a maximum of 05 marks according to the following scale, provided the candidate passes the examination by award of such grace marks:

Marks obtained by the candidate above the required minimum aggregate pass marks		**Grace marks can be given up to**
Up to 6 marks	-	02
Up to 12 marks	-	03
Up to 18 marks	-	04
19 marks and above	-	05

2. No grace marks would be awarded to a candidate who appears in part/ supplementary/remand examination. Non appearance of a candidate in any part of the examination on account of any reason will make him ineligible for grace marks.
3. A candidate who passes the examination after the award of grace marks in a paper/practical or the aggregate will be shown in the marks sheet to have passed the

examination by grace. Grace marks will not be added to the marks obtained by a candidate from the examiners.

4. A candidate who is awarded grace marks in any subject to pass the examination will not be entitled for distinction in any subject.

Revaluation/Scrutiny

Re-evaluation of Theory paper answer books and scrutiny of marks shall be permissible as per University Rules.

Permission for revaluation / scrutiny

1. In 1st Attempt – Revaluation shall be permitted in 25% of the appeared papers. Scrutiny shall be permitted for all the papers.
2. In 2nd Attempt – Only scrutiny shall be permitted in all the papers. Revaluation shall not be permitted.
3. Revaluation shall also be permitted in 25% of such papers in which a candidate appears for the 1st time irrespective of his attempt in the whole examination.
4. For determining the attempt, following criteria shall be followed –

S. No.	Situation	Attempt in next examination	
1.	Candidate is detained in all subjects	His attempt in all the subjects in the next examination will be treated as	1st Attempt
2.	Candidate permitted in all subjects But did not appear in all permitted subjects	His attempt in the next examination will be treated as	1st Attempt
3.	Candidate is detained in one / few subjects Permitted for the rest of the subjects Appeared in permitted subjects	His attempt in the detained subject(s) in the next examination will be treated as	2nd Attempt
4.	Candidate is detained in one / few subjects Permitted in the rest of the subjects Did not appear in the permitted subjects	His attempt in the next examination In detained subject(s) will be treated as In permitted subject(s) will be treated as	1st Attempt
5.	Candidate permitted in all subjects But did not appear in few subjects	His attempt in the permitted subjects in the next examination will be treated as	2nd Attempt

COMPULSORY ROTATORY INTERNSHIP

Every candidate after successful completion of the final year examination shall have to undergo six months compulsory rotatory internship in any multispecialty hospital / institutions recognized by the Government after receipt of the fees prescribed by this University. Candidates coming from other institutions with the permission of the Head of the concerned institution will be allowed for the internship program in this University after receipt of the fees prescribed by this University. Internship should be rotating and shall cover clinical branches such as Orthopedics, Neurology, General Medicine, Pediatrics, General Surgery, Cardio–thoracic Surgery, critical care (including cardiac recovery, ICU, CCU,

Neuro ICU), cancer department, Obstetrics & Gynecology, Burns, Psychiatric IPD etc. concerned with Physiotherapy and Physiotherapy OPD, it will be run under guidance of Head of Department Physiotherapy and in co-ordination with Head of Department of concerned clinical branches.

Internship Rules

1. The intern will be eligible for 1 day casual leave in each month and can carry over the leave to next months, but he/she cannot avail the next month leave in advance.
2. The intern should conduct themselves in a manner befitting the profession.
3. The intern should dress appropriately in the clinical areas.
4. It is mandatory for the intern to wear the white apron with nametag when in the clinical area/ wards.
5. The intern can avail medical leave on producing a medical certificate, but will have to compensate for the number of days of absence from internship

Authority for issue of Internship Completion Certificate

The Head of Institution shall issue a certificate of successful completion of 6 month rotating internship to each candidate after satisfying that the candidate has completed the training program and has acquired the skills to function independently.

AWARD OF DEGREE

The degree shall be awarded by the University only after submission of Internship completion certificate and application forwarded to the university by the Principal of the College.

MIGRATION/TRANSFER OF CANDIDATES

Migration/transfer of a candidate from another recognized University to this University shall be considered only in BPT-II year (subject to availability of vacant seat) provided a similar Curriculum is followed by the two Universities. The migration/transfer will not be entertained in the middle of academic year. Migration of a candidate from this University to another University shall not be considered.

VACATION

The Principal of the College may declare vacation in an academic year to the students as per the academic calendar.

Bachelor of Physiotherapy (BPT)
(4 ½ Years Degree Course including 6 Months rotatory Internship)
Subjects, Teaching Hours and Examination Marks

B.P.T.- I year

Sr. No.	Subject	Teaching Hours			Examination Marks
		Theory	Practical	Total	
1	Human Anatomy	150	50	200	200
2	Human Physiology	150	50	200	200
3	Biochemistry	100	-	100	100
4	Exercise Therapy-I	100	100	200	200
5	Electro Therapy-I	100	100	200	200
6	Orientation to Physiotherapy	--	20	20	NUE
	TOTAL			**920**	**900**

B.P.T.-II year

Sr. No.	Subject	Teaching Hours			Examination Marks
		Theory	Practical	Total	
1	Pathology & Microbiology Pathology-A / Microbiology-B	100 (50 Hrs. each)	-	100	100
2	Pharmacology	100	-	100	100
3	Exercise Therapy-II	100	100	200	200
4	Electro Therapy-II	100	100	200	200
6	Community Medicine	100	-	100	100
5	Biomechanics & Kinesiology	100	50	150	100
7	Physiotherapy Clinical Training	-	400	400	NUE
	TOTAL			**1250**	**800**

B.P.T.-III year

Sr. No.	Subject	Teaching Hours			Examination Marks
		Theory	Practical	Total	
1	Clinical Orthopaedics	100	50	150	150
2	Physiotherapy in Orthopaedic Conditions	100	100	200	200
3	Gen. Medicine including Paediatrics	100	-	100	100
4	Disability Prevention and Rehabilitation	100	50	150	100
5	Sociology & Psychology including Psychiatry Sociology-A / Psychology-B & Psychiatry	100 (50 Hrs. each)	-	100	100
6	Disaster management	50		50	NUE
7	Supervised Physiotherapy Practice for outdoor & indoor patients	-	400	400	NUE
	TOTAL			**1150**	**650**

B.P.T. –IV year

Sr. No.	Subject	Teaching Hours			Examination Marks
		Theory	Practical	Total	
1	Neurology & Neurosurgery	100	-	100	100
2	Physiotherapy in Neurology and Neurosurgical Conditions	100	100	200	200
3	Gen. Surgery including CTVS	100	-	100	100
4	Physiotherapy in Medical and Surgical conditions	100	100	200	200
5	Exercise Physiology and Sports Physiotherapy	100	-	100	100
6	Biostatistics and Research Methodology	50	-	50	NUE
7	Supervised Physiotherapy practice for indoor & outdoor patients	-	400	400	NUE
	TOTAL			**1150**	**700**

Total Teaching Hours :- 920+1250+1150+1150= 4470

Marks Distribution

B.P.T.-I Examination

Code No.	Subject	Theory-100			Practical-100			
		Theory	I.A. theory	Total theory	Practical + Oral	I.A. Practical	Total Practical	Grand Total
4010	Human Anatomy (Paper-I)	70	30	100	70	30	100	200
4020	Human Physiology (Paper-II)	70	30	100	70	30	100	200
4030	Biochemistry (Paper-III)	70	30	100	-	-	-	100
4040	Exercise Therapy-I (Paper-IV)	70	30	100	70	30	100	200
4050	Electro Therapy-I (Paper-V)	70	30	100	70	30	100	200
	TOTAL							**900**

B.P.T.-II Examination

Code No.	Subject	Theory-100			Practical-100			
		Theory	I.A. theory	Total theory	Practical + Oral	I.A. Practical	Total Practical	Grand Total
4210	Pathology & Microbiology (Paper I)	70	30	100	-	-	-	100
4220	Pharmacology (Paper II)	70	30	100	-	-	-	100
4230	Exercise Therapy-II (Paper III)	70	30	100	70	30	100	200
4240	Electro Therapy-II (Paper IV)	70	30	100	70	30	100	200
4250	Biomechanics & Kinesiology (Paper V)	70	30	100	-	-	-	100
4260	Community Medicine (Paper VI)	70	30	100	-	-	-	100
	TOTAL							**800**

B.P.T.-III Examination

Code No.	Subject	Theory			Practical			
		Theory	I.A. theory	Total theory	Practical + Oral	I.A. Practical	Total Practical	Grand Total
4410	Clinical Orthopedics Paper-I	70	30	100	35	15	50	150
4420	Physiotherapy in Orthopedic conditions Paper-II	70	30	100	70	30	100	200
4430	Gen. Medicine including Paediatrics, Paper-III	70	30	100	-	-	-	100
4440	Disability Prevention and Rehabilitation Paper-IV	70	30	100	-	-	-	100
4450	Sociology & Psychology including Psychiatry	70	30	100	--	-	-	100
	TOTAL							**650**

B.P.T.-IV Examination

Code No.	Subject	Theory-100			Practical-100			
		Theory	I.A. theory	Total theory	Practical + Oral	I.A. Practical	Total Practical	Grand Total
4610	Neurology & Neurosurgery Paper-I	70	30	100	-	-	-	100
4620	Physiotherapy in Neurology and Neurosurgical Conditions Paper-II	70	30	100	70	30	100	200
4630	Gen. Surgery including CTVS Paper-III	70	30	100	-	-	-	100
4640	Physiotherapy in Medical and Surgical conditions Paper-IV	70	30	100	70	30	100	200
4650	Exercise Physiology and Sports Physiotherapy Paper-V	70	30	100	-	-	-	100
	TOTAL							700

Total University Examination Marks:- 900+800+650+700=3050

BPT-I year
(1 Year Duration)

Paper-I
HUMAN ANATOMY (4010)

Theory Hours: 150
Practical Hours: 50
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY

1. General Anatomy:

1. Cell: Parts, Name of Cytoplasmic organelles and inclusion with their Functions.
2. Epithelium: Types with examples and light microscopic structure.
3. Connective Tissue: Classification with emphasis to tendon and ligament.
4. Cartilage: Types with example.
5. Bone: Types with example, types of Ossification (Stage of Ossification not required).
6. Joints: Classification with example, emphasis to synovial joints.
7. Muscles: Types (details of EM picture not required).
8. Nervous tissue: Structure of a Neuron, Synapse Reflex arc, Degeneration and Regeneration of the Nerve, typical spinal nerve.
9. Embryology
   (a) Ovum, Spermatozoa, fertilization and formation of germ layers and their derivations.
   (b) Development of skin, fascia, blood vessels, lymphatic.
   (c) Development of bones, axial and appendicular skeleton and muscles.
   (d) Neural tube, development of spinal cord, Brain stem and brain (cerebrum, cerebellum)

2. Regional Anatomy

Superior Extremity

(1) Pectoral region, Axilla, Brachial plexus, muscles of arm (front & back), muscles of forearm (front & back) palm (muscle, nerve, vessels) Synovial Bursae of hand and palmar spaces, nerves (axillary, median, ulnar, radial), Cutaneous distribution according to dermatomes, Related Clinical anatomy.
(2) Joints: Shoulder girdle, shoulder, elbow, radial-ulnar, wrist, first carpo-metacarpal joints.

Inferior Extremity

(1) Front of thigh, femoral triangle, lumber plexus, lnguinal group of lymph Nodes, glutal region, back of thigh, leg (anterior, lateral, posterior compartments) foot (dorsum, plantar), Venous drainage of inferior Extremity, Nerve and their distribution (femoral, sciatic, tibial, common peroneal, obturator), Arches of foot, Cutaneous distribution according to dermatomes, Related clinical Anatomy.
(2) Joint, hip, knee, ankle, sub-talar & mid-tarsal joints.

3. Thorax

Thoracic wall, typical intercostals space, Mediastinum (boundaries, contents), Heart with its internal and external features, Blood vessels, Typical spinal Nerve, movement of ribs during Respiration, pleura, lungs.

4. Abdomen & Pelvis

(1) Abdominal wall, inguinal canal, Stomach, Liver, spleen, pancreas, kidney with ureter, small Intestine, Large Intestine, Abdominal Aorta, Portal vein, Diaphragm, Sacral plexus, posterior abdominal wall.
(2) Sacro-Iliac joint.

5. Vertebral Column

(1) Identification of vertebrae of different regions.
(2) Intervertebral joints
(3) Intervertebral disc
(4) Muscles of vertebral column
(5) Weight transmission
(6) Applied anatomy
(7) Radiological anatomy

6. Head & Neck

(1) Muscle of face, Cutaneous distribution of Trigeminal nerve, Triangles of neck (anterior & posterior) Sternocleidomastoid and Trapezius muscles, Muscle of mastication, Nasal cavity, Pharynx and Larynx (Parts, Sensory distribution).
(2) Joints: Temporo-mandibular Joint, Atlanto-occipital and Atlanto-Axial joints.

7. Neuroanatomy

(1) General Introduction and classification, Autonomic Nervous system
(2) Sympathetic and Para Sympathetic with their difference in distribution and function). Spinal cord, spinal Reflex, Pyramidal and extra-pyramidal tracts (Detail Nucleus not required), Blood supply; brainstem: gross features and blood supply; Cerebellum: gross features and functions; Cerebrum: gross features, functional areas, blood supply; Related clinical anatomy.

8. Cranial Nerves

(1) Names in order, Individual Cranial Nerve distribution, Idea about Upper Motor Neuron and Lower Motor Neuron, applied Anatomy.

PRACTICAL/VIVA

(1) Demonstrations on dissected specimens of upper limb, lower limb.
(2) Osteology of upper limb, lower limb bones, lumbar & cervical vertebrae, sacrum, Ribs (only general features), Thoracic Vertebrae (Identification, general features).
(3) Surface anatomy of Superior Extremity & Inferior Extremity, Surface anatomy.
(4) Abdominal viscera, Viscera of pelvis and blood vessels.
(5) Demonstration on cadaver of thoracic wall, mediastinal structure, Heart, Lungs.
(6) Demonstration on cadaver of oral cavity, nasal cavity, pharynx, larynx, sagittal sections of head & neck, muscles of face and triangles of neck.
(7) Cranial bones (Identification of individual bone with general features), Base of skull : different foramina in relation to cranial nerves, Cranial fossa and their relation to brain and Hypophysis cerebri, Cervical vertebrae.

(8) Neuroanatomy:- Demonstration of gross specimens of spinal cord, brainstem, cerebellum, cerebrum and meninges, Identification of cranial nerves emerging from brain and brainstem

(9) Histology: (1) Epithelium (Simple, Compound)
(2) Connective tissue (Cartilage & Bone)
(3) Muscle (smooth & skeletal)
(4) Nervous tissue (nerve trunk, spinal cord, cerebellum, cerebrum, dorsal root ganglion, sympathetic ganglion)
(5) Blood vessels (Large & medium sized arteries and vein)

MODEL PAPER

BPT-I Year **Anat.-I**
(4010)

First Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-I

Human Anatomy

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Describe classifications of joints and briefly explain the synovial joint? 10

Q2. Describe the Hip joint under the following headings (3+4+3) = 10
   a. Type & Variety of Joint, and bones forming the joint
   b. Movements and muscles causing these movements
   c. Ligaments of the joint

Q3. Describe the circle of willis with labeled diagram 10

Q4. Describe the radial nerve under the following headings (3+4+3) = 10
   a. Origin and root
   b. Course and distribution
   c. Supply to the parts

Q5. Describe the shoulder joint under the following headings: (3+4+3) = 10
   a. Rotator cuff
   b. Movements and muscles causing these movements
   c. Diagram showing relations of the joint

Q6. Explain mediastinum and what are the anatomical signification in mediastinum ? 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Brachial Plexus 5

Q8. Name of cranial nerves and its function 5

Q9. Foot drop 5

Q10. Differences between sympathetic and parasympathetic nervous system 5

Q11. Arches of foot 5

Q12. Write the origin, insertion, and action of the following muscles (2 ½ +2 ½) = 5
   a. Tibialis anterior
   b. Deltoid

Q13. Describe the stomach 5

Q14. Femoral triangle 5

Paper-II
HUMAN PHYSIOLOGY (4020)

Theory Hours: 150
Practical Hours: 50
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY:

1. **General Physiology**
   1. Introduction and scope of Physiology
   2. Cell and tissue-Its structure, Principal constituents, properties and functions including cell division.
   3. Body Fluid.
      (a) Blood: Composition and general functions of plasma. Blood cells – structure and function - Red Blood cells, white Blood Cells – including numbers and approximate length of life – position, structure and function of cells of Reticulo endothelial system.
      (b) Blood clotting including bleeding time and clotting time, factors accelerating or slowing the process. Blood groups and their significance, Rh-factor, Hemoglobin and E.S.R.
      (c) Formation of Blood, tissue fluid and lymph.

2. **Cardio-Vascular System. (Detailed)**
   1. Structure and properties of Heart Muscles and nerve supply of Heart.
   2. Structure and functions of arteries, capillaries and veins.
   3. Cardiac cycle and Heart sound.
   4. Cardiac output measurements, factors affecting Heart Rate and its regulation.
   5. Cardio-vascular reflexes**.**
   6. Blood pressure, its regulation, physiological variation, peripheral resistance, Factors Controlling Blood Pressure, Hemorrhage.
   7. ECG study and stress test

3. **Respiratory System. (Detailed)**
   1. Mechanism of Respiration, Changes in diameter of thorax, Intra-pleural and Intra-pulmonary pressure.
   2. Quantities of lung volume, tidal and residual volume, vital capacity.
   3. Gaseous inter-changes in lung and tissues.
   4. Control of respiration-Nervous and chemical significance of changes in rate and depth, transportation of oxygen and carbon dioxide.
   5. Respiratory states-anoxia, asphyxia, Cyanosis, Acclimatization.

4. **Digestive System**
   1. General arrangement of alimentary canal, liver, pancreas -position, structure and functions.
   2. Nutrition and Diet-carbohydrate, protein, fat, salts, water, vitamins and minerals digestion, absorption and Metabolism.

5. **Reproductive System.**

1. Sex determination and development of puberty, male sex hormones, spermatogenesis, Female sex hormones, menstrual cycle. Ovulation, pregnancy, Function of placenta, lactation.

6. Neuromuscular Physiology (Detailed)

1. Cell membrane – Ionic and Potential gradient and transport.
2. Muscle – Types of muscular tissue – Gross and Microscopic structure – function. Basis of muscle contraction – changes in muscle contraction, Electrical – Biphasic and mono-phasic action potentials, chemical, Thermal and physical changes, Isometric and Isotonic contraction.
3. Motor units and its properties – clonus, tetanus, all or none law, Fatigue.
4. Nerve – Gross and microscopic structure of nervous tissue, one neuron – Generation of action potential – Nerve impulse condition.
5. Neuromuscular junction.
6. Degeneration – Regeneration of peripheral nerves, electro tonus and Pfluger's law. Types and properties of receptors, types of sensations, synapse, reflex arc, its properties - occlusion, summation, sub minimal fatigue etc.
7. Tracts – Ascending and descending and extra-pyramidal tracts.
8. Functions of E.E.G., Cerebral cortex, cerebrum, cerebellum, Basal ganglia.
9. Thalamus & Hythalamus – connection and functions.
10. Reticular formation – tone posture & equilibrium, Autonomic nervous system.

7. Excretory System.

Gross and minute structures of kidney, renal circulation, Mechanism of formation of urine, Glomerular filtration rate and tubular function, renal function and renal tests. Physiology of micturition.

8. Endocrine System. (Detailed)

1. Structure and function of pituitary (anterior & posterior). Thyroid, Para-thyroid, adrenal cortex, adrenal medulla, Thymus and pancreas.
2. Blood sugar regulation.

9. Skin-Structure and functions.

10. Special Senses:-

1. Eye-Errors of refraction, equilibrium, Autonomic nervous system.
2. Speech and its disorders.
3. Ear and Vestibular apparatus, taste, olfactory, somatic sensations.

PRACTICAL / DEMONSTRATION

1. Hematology: RBC count, WBC count, differential count. ESR, Bleeding & Clotting time, Estimation of hemoglobin, Blood groups.
2. Human Physiology: Examination of (a) Respiratory system (b) heart and arterial pulse (c) deep and superficial reflexes (d) cranial nerves (e) motor system (f) sensory system including higher function (g) measurement of blood pressure.
3. (c) Effect of Exercises on body physiology

MODEL PAPER

BPT-I Year **Human Physio.-II (4020)**

First Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-II

Human Physiology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Define excitation contraction coupling. Give sequence of events during its occurrence. Explain molecular basis of muscle contraction. 10

Q2. Describe cardiac cycle and add a short note on cardiac output 10

Q3. Describe mechanism of respiration and briefly explain the lungs volume? 10

Q4. Describe the composition of blood and general functions of blood? 10

Q5. What are the types of synapses? Describe their properties 10

Q6. Describe the actions of glucocorticoids and the mechanism that regulates its secretion 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. GFR (Glomerular filtration rate) 5

Q8. Heart sounds 5

Q9. Pancreatic Juice 5

Q10. Functions of cerebellum? 5

Q11. Neuromuscular juncation 5

Q12. Spermatogenesis 5

Q13. Pituitary dwarfism and cretinism 5

Q14. Neurom 5

Paper-III
BIO-CHEMISTRY (4030)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY

(1) **BIO-PHYSICS:**
Concepts of pH and buffers, Acid-base equilibrium, osmotic pressure and its physiological applications.

(2) **CELL:**
Morphology, Structure and functions of cell, cell membrane, Nucleus, Chromatin, Mitochondria, endoplasmic reticulum, ribosome.

(3) **CARBOHYDRATES, LIPIDS & PROTEINS & METABOLISM: (detailed)**
Definition, functions, sources, classification & metabolism

(4) **VITAMINS: (detailed)**
Classification, Fat soluble vitamins A,D,E,K Water soluble vitamins-B Complex and Vitamin 'C', Daily requirement physiological functions and disease of vitamin deficiency.

(5) **BIO-ENERGETICS:**
Concept of free energy change, Energetic reaction and endergonic reactions, Concepts regarding energy rich compounds. Respiratory chain and Biological oxidation.

(6) **WATER METABOLISM:**
Fluid compartments, Daily intake and output, Dehydration, Sodium and potassium Metabolism.

(7) **MINERAL METABOLISM: (detailed)**
Iron, Calcium, Phosphorous, Trace elements.

(8) **NUTRITION: (detailed)**
Nutritional aspects of carbohydrate, fat and proteins, Balanced diet, Metabolism in exercise and injury, Diet for chronically ill and terminally ill patients.

(9) **CONNECTIVE TISSUE:**
Mucopolysacharides, Connective tissue proteins, Glyco-proteins, Chemistry and Metabolism of bone and teeth.

(10) **HORMONES: (detailed)**
General Characteristic and Mechanism of Hormone actions.

MODEL PAPER

BPT-I Year **Biochem.-III**
(4030)

First Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-III
Biochemistry

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Define and classify lipids giving suitable examples. Enumerate their biochemical functions 10

Q2. Define hormones and explain the mechanism of action of steroid hormones 10

Q3. Discuss daily requirement, physiological functions and deficiency diseases of vitamin A. 10

Q4. Define hormones and describe role of insulin in glucose metabolism? 10

Q5. What is a primary structure of protein? Discuss the biological functions of protein 10

Q6. What are the enzymes? Classify them according to IUB and describe in detail the factors affecting enzyme activity? 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Urea cycle 5

Q8. Iron deficiency anemia 5

Q9. Gluconeogenesis 5

Q10. Essential amino anemia 5

Q11. Deficiency manifestations of vitamin D 5

Q12. Balance diet 5

Q13. HMP shunt pathway 5

Q14. Protein malnutrition 5

Paper IV
EXERCISE THERAPY-I (4040)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

1. Basic physics in exercise therapy. Mechanics: Force, Gravity, line of gravity, center of gravity in human body, Base, equilibrium, Axes and Planes, mechanical principles of lever, examples in human body, pendulum, spring.
2. Introduction to exercise therapy.
3. Muscle strength: Anatomy and physiology of muscle tissue, causes of muscle weakness paralysis, prevention of muscle weakness/paralysis, Type of muscle work and contraction ranges of muscle work, prevention of muscle atrophy.
4. Muscle assessment- M.R.C. grading, Principles of muscle strengthening/re-education, early re-education of a paralyzed muscle.
5. Classification movements in details:
6. Voluntary movement: free exercise, assisted exercises, resisted exercise, Active-Assisted and Resisted exercise.
   Assisted Exercises: Technique and uses.
   Free exercises-Classification, technique, effects of frequent exercises on various systems etc.
7. Resisted exercises – Techniques and types of resistance, SET system (Heavy resisted exercises, Oxford method, De Lorme method, Mc queen method and adaptation of skeletal muscles.
8. Suspension therapy: Principles of suspension, types of suspension therapy, effects and uses of suspension therapy-their application either to mobilize a joint, increase joint range of motion or to increase muscle power-explaining the full details of components used for suspension therapy.
9. Massage: Definition of massage, type of massage, general effect and uses of massage, local effects of individual manipulation (physiological effects), contra-indications, techniques of application of all manipulations-stroking, Effleurage, kneading and picking up, skin rolling (back), clapping, tapping, friction etc.
10. Starting position-Fundamental starting position-standing, sitting, kneeling, lying and hanging. All the derived positions of the above five fundamental starting positions.
11. Relaxed passive movements, basic knowledge of classification of relaxed passive movements, definition, technique, effects and uses of relaxed passive movement.
12. Joint Movement and measurement: Goniometry. Classification of joint movements, causes of restriction of joint movement, Principle and application of Goniometry.
13. Limb length (only lower limb) & girth measurement, assessment of sensations & reflexes, grades of deep tendon, bed Rest-Its necessity & Complications.
14. Therapeutic Gymnasium-equipments in the gymnasium, Set up of gymnasium and its importance, Describe muscle fatigue, muscle spasm and tension. Factors contributing to fatigue and relaxation.

15. Relaxation - Describe relaxation, classification & types, Effects and uses, Techniques of relaxation. Factors contributing to fatigue and relaxation. indications and contraindications.

PRACTICAL/VIVA

1. Massage Therapy
2. Suspension Therapy
3. Relax passive movement/types of exercise
4. MMT
5. Goniometry
6. Relaxation techniques- general and local
7. Fundamental and derived positions
8. Application of relaxed passive movements, active assisted and resisted movements to all joints in limbs.

SUGGESTED READINGS

Ex. therapy-I –

1. Therapeutic Exercises- foundations and Techniques- Kisner and Colby.
2. Muscle Testing and Function- Kendall
3. Principles of exercise therapy – Gardner.
4. Practical Exercise Therapy – Hollis.
5. Beard's Massage – Wood.
6. Motor control- theory and practical application- Shumway.
7. Hydrotherapy – Principles and practice – Campion.
8. Measurement of Joint Motion – A guide to goniometry – Norkin and White Davis.

MODEL PAPER

BPT-I Year **Exe. Thr.-I.-IV**
(4040)

First Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-IV

Exercise Therapy-I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Discuss about posture, types and factors responsible for bad posture?	10
Q2.	Define fundamental positions and explain with its muscle work?	10
Q3.	Define massage, classification of massage, explain its physiological and therapeutic effects?	10
Q4.	Define relaxation, technique, uses of relaxation	10
Q5.	Define lever, mechanical advantages and explain lever anatomical examples?	10
Q6.	Explain goniometry, types and determinants	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	AXIS AND PLANE	5
Q8.	Classification of joint movement	5
Q9.	Types of muscle work	5
Q10.	Principles of suspension therapy	5
Q11.	Write about resisted exercise and types of resistance	5
Q12.	De Lorme's Method	5
Q13.	Principles of muscle strengthening	5
Q14.	Bed rest its complications	5

Paper V
ELECTRO THERAPY– I (4050)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY

Physical Properties:

1. Conductors, insulators, potential difference, Resistance and Intensity.
2. Ohm's Law, Effects of current electricity
3. Rectifying devices- thermionic valves, semiconductors, transistors, amplifiers, transducers, oscillator circuit.
4. Capacitance, condensers and AC and DC circuits
5. Chemical effects - Ions and electrolytes, ionization, production of EMF by chemical action
6. Magnetic effects, molecular theory of magnetism, magnetic effects, electromagnetic induction
7. Thermal effects- Joule's law and heat production
8. Milli-ammeter and voltmeter, transformers and choke coil
9. Physical principles of sound and its properties
10. Physical principles of light and its properties
11. Electromagnetic spectrum- biophysical application.

Electrical Supply:

1. Brief outline of mains supply of current, safety devices, earthing, fuses etc.
2. Short circuit, electric shock & earth shock, First aid and initial management of electric shock.

Low frequency currents:

1. Introduction to DC, AC and modified currents
2. Production of DC- physiological and therapeutic effects of DC,
3. Iontophoresis- principles of clinical application, indication, contraindication, precaution, operational skills of equipment and patient preparation.
4. Modified DC –various pulses, duration and frequency and their effects on nerve and muscle tissue. Production of IDC and surged currents and their effects, principle of clinical application, physiological an therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation.
5. Sinusoidal currents, biodynamic pulses.

Electrical Reactions and electro diagnostic tests:

1. Electric stimuli and normal behaviour or nerve and muscle tissue.
2. Types of lesion and development of reaction of degeneration.
3. Faradic/ IDC test (FG test).
4. SD curve and its application.
5. Rheobase and chronaxie and pulse ratio.

Ultra Violet Radiation:

1. Wavelength, frequency, types and sources of UVR generation, techniques of irradiation, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation
2. Dosage calculation of UVR.

Section-F

Superficial heat – Infrared Radiation, Paraffin wax bath, moist heat, electrical heating pads, fluido therapy, contrast bath etc

1. **IRR**- Wavelength, frequency, types and sources of IRR generation, techniques of irradiation, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation
2. **PWB** – contents, methods of application, maintenance of equipment, indication, contraindication, precaution, operational skills, equipment and patient preparationc)
3. **Hydro collator packs** – contents, methods of application, indication, contraindication, precaution.

PRACTICAL/VIVA

1. To study the basic operation of electric supply to the equipment and safety devices.
2. To locate and stimulate different motor points region wise.
3. Therapeutic application of different low frequency current, stimulator, faradic foot bath, faradism under pressure/tension, iontophoresis.
4. To plot SD curve, find rheobase and chronaxie
5. Applications of hydrocollator units, IRR, PWB

SUGGESTED READINGS

1. Low and Reed – Electrotherapy Explained: Principles and Practice
2. Claytons Electrotherapy
3. Jagmohan Singh – Textbook of Electrotherapy.
4. Kahn - Principles and Practices of Electrotherapy
5. Lehmann – Therapeutic Heat and Cold

MODEL PAPER

BPT-I Year **Ele. Thr.-I.-V**
(4050)

First Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-V

Electro Therapy-I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Describe construction and working of kromayer lamp and its Physiological effects? 10

Q2. Explain techniques of infra-red treatment, its therapeutic uses and dangers 10

Q3. Describe iontophoresis, its indications and contraindications 10

Q4. Define the faradic and galvanic current and its method of application in case of degeneration 10

Q5. What is electric shock? What is its potential cause in PT department? Give its prevention and management. 10

Q6. Write down the principles, indications, and contraindications of paraffin wax bath? 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Doses calculation of UVR 5

Q8. Choke Coil 5

Q9. Faradic foot bath 5

Q10. Pain gate theory 5

Q11. Whirlpool bath 5

Q12. Hydrocollator pack 5

Q13. Therapeutic effect of modified DC 5

Q14. SD curve 5

BPT –II year
(1 Year Duration)

Paper-I
PATHOLOGY AND MICROBIOLOGY (4210)

Theory hours :-
Pathology: 50
Microbiology: 50
Total: 100

Theory: 100 marks (70 University examination +30 Internal assessment)
(1) This paper will consist of two sections. A and B
(2) Each section will be answered in separate answer books.

Section A- Pathology

1. Aims and objectives of study of pathology.
2. Brief outline of cell injury, degeneration, necrosis and gangrene.
3. Inflammation: Definition, vascular and cellular phenomenon, difference between Transudate and exudates, granuloma
4. Circulatory disturbances: Hemorrhage, Embolism, Thrombosis, Infraction, shock, Volkmann's ischemic contracture.
5. Blood disorder: Anemia, Bleeding disorder.
6. CVS: Heart and Blood vessels, Coronary heart disease.
7. Respiratory System: Ch. Bronchitis, Asthma, Bronchiectasis, Emphysema, COPD.
8. Bones and Muscles: Arthritis & Spondyloarthropathy.
9. PNS and Muscles: Neuropathies, Poliomyelitis & Myopathies.
10. CNS: Infection, Demyelinating disease, Degenerative disease.
11. Neoplasia.
12. Growth and its disorders, like hypertrophy, hyperplasia & atrophy.
13. Autoimmune diseases.
14. Healing and repair.
15. Diabetes mellitus and gout.

Section B- Microbiology

1. Introduction and History of Microbiology
2. General lectures on Microorganisms (brief).
3. Sterilization and asepsis.
4. Infection- Source of infection and Entry and its Spread
5. Immunity- Natural and Acquired
6. Allergy and hypersensitivity.
7. Outline of common pathogenic bacteria and diseases produced by them.
   (a) Respiratory tract infections.
   (b) Meningitis.
   (c) Enteric infections.
   (d) Anaerobic infections.
   (e) Urinary tract infections.
   (f) Leprosy, tuberculosis and miscellaneous infections.
   (g) Wound infections.
   (h) Sexually transmitted diseases.

(i) Hospital acquired infections.

8. Virology- virus infections with special mention of Hepatitis.
9. Poliomyelitis & rabies

MODEL PAPER

BPT-II Year **Path. & Micro.-I**
(4210)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

PATHOLOGY AND MICROBIOLOGY

Paper-I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Section-A : Pathology
(35 Marks)

Long Answer Questions (Attempt any Two out of Three)

Q1.	Define and classify the inflammation and describe the stages of inflammation	10
Q2.	Describe coronary heart disease.	10
Q3.	Define poliomyelitis. Describe different stages and path physiology of poliomyeliti	10

Short Answer Questions (Attempt any Three out of five)

Q4.	Factors influencing wound healing	5
Q5.	Iron-deficiency anemia	5
Q6.	Gangrene	5
Q7.	Type-I and Type-II hyper sensitivity reaction	5
Q8.	Diabetes mellitus	5

Section-B : Microbiology
(35 Marks)

Long Answer Questions (Attempt any Two out of Three)

Q1.	Define and classify the immunity, briefly explain the innate and acquired immunity?	10
Q2.	Describe sterilization with examples?	10
Q3.	Describe source of infection, entry and its spread?	10

Short Answer Questions (Attempt any Three out of five)

Q4.	Laboratory diagnosis of urinary tract infection	5
Q5.	Robert Koch	5
Q6.	Laboratory diagnosis of HIV	5
Q7.	Hospital acquired infection	5
Q8.	Difference between the prokaryotic and eukaryotes	5

Paper-II
PHARMACOLOGY (4220)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY

1. **General Pharmacology:-**Introduction and definitions, Nature and sources of drugs, Dosage forms of drugs. Routes of drug administration, Pharmacokinetics (Absorption, Bioavailability, Distribution, Metabolism, Excretion, First order, Zero order Kinetics); Pharmacodynamics (sites and mechanisms of drug action in brief, Adverse drug reactions, Margin of safety of drugs and factors influencing dosage and drug response)
2. **Drugs Affecting ANS:-** General Introduction, Drug affecting parasympathetic nervous system, Drug affecting sympathetic nervous systems.
3. **Drugs Affecting Peripheral (Somatic) nervous System:**- Skeletal Muscle Relaxants: Local Anesthetics.
4. **Renal and CVS:**- Diuretics; Renin-angiotension system and its inhibitors, Drug treatment of Hypertension, Angina pectoris, Myocardial infarction, Heart failure, and hypercholesterolemia.
5. **Anti-inflammatory drugs and related autacoids:-** Histamine, Bradykinin, 5-HT and their antagonists; Prostaglandins and leukotrienes; Nonsteroidal-Antiinflammatory drug, Antirheumatic drugs and drugs used in gout.
6. **Drugs Affecting CNS:-** General anesthetics, Anxiolytics and hynotics; Alcohol, Opioid analgesics, Drug dependence and abuse, Antiepileptic drugs, Drug therapy for Neurodegenerative disorders.
7. **Endocrines:**- Parathyroid hormone, Vitamin D, Calcitonin and drugs affecting Calcium balance, Thyroid and antithyroid drugs; Adrenocortical and anabolic steroids, Insulins and Oral Hypoglycaemic agents, Oral contraceptives.
8. **Drugs Affecting Respiratory System:**- Drug therapy of bronchial asthma and chronic obstructive pulmonary disease.
9. **Chemotherapy:**- Introduction; sulfonamides, Fluoroquinolones, Penicillins, Cephalosporins, Newer B-lactam antibiotic, Aminoglycosides, Macrolides and Newer antibiotics, Tetracyclines, Chloramphenicol, Chemotherapy of Tuberculosis and Leprosy, Antiseptics-Disinfectants.
10. **Miscellaneous Topics:**- Management of stroke, Toxiocology and Heavy metal poisoning, special aspects of paediatric and geriatric pharmacology; Drug interactions with drugs commonly used by physiotherapists; Hematinics, vitamins and antioxidants.

MODEL PAPER

BPT-II Year **Phar.-II**
(4220)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-II
Pharmacology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Classify the NSAIDs, discus the therapeutic uses and adverse effects of NSAIDs.	10
Q2	Describe the routes of drug administration	10
Q3.	Enumerate various factors influencing dose and response of drugs.	10
Q4.	Classify anti- epileptic drugs. Write down the treatment of grand mal epilepsy	10
Q4.	Classify the anesthetics with examples	10
Q5	Classify adrenergic drugs. the therapeutic uses and adverse effects of adrenaline	10
Q6	Enumerate the uses and adverse effects of:	(5+5) = 10
	a. Lignocaine	
	b. Morphine	

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Antitubercular drugs	5
Q8	ACE- inhibitors	5
Q9	Anticholinesterase	5
Q10	Anaphylactic shock	5
Q11	Organophosphorus poisoning	5
Q12	Bronchodilators	5
Q13	Corticosteroids	5
Q14	Treatment of bronchial asthma	5

Paper-III
EXERCISE THERAPY – II (4230)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 100 marks (70 University examination +30 Internal assessment)

THEORY:

1. Therapeutic exercises – impact on physical function, classification, techniques, indications, contraindications, assessment and evaluation of patient.
2. Principles of aerobic exercises & its physiological response, testing as basis of aerobic program
3. Determinants of exercise program.
4. Stretching Techniques and its determinants.
5. Peripheral and spinal joint mobilization techniques.
6. Individual, group and mass exercises, maintenance exercises, plan of exercise-therapy tables and schemes
7. Principles of Traction, physiological and therapeutic effects, classification, types, indications, contraindications, techniques of application, operational skills and precautions.
8. Taping and bandaging techniques.
9. P.N.F: Detail theory of proprioceptive- neuromuscular facilitation techniques.
10. Co-ordination Exercises: Definition of coordination movements. Incoordinated movements, Factors for coordinated movements, technique of coordination exercises. Techniques to improve static and dynamic balance.
11. Posture: Types, factors responsible for good posture, factors for poor posture, principles of development of good posture, assessment of Posture.
12. 2 point, 3 point & 4 point gait: Introduction, crutch measurement, crutch balance, various types of crutch gait in details
13. Breathing exercises: Physiology of respiration, types of breathing exercises, technique if various types of breathing excises, its effects and uses. Pulmonary exercises & postural drainage
14. Hydrotherapy: Introduction, various types of hydrotherapy units, construction and equipments used in hydrotherapy Principles, indications, contraindication, effects and uses of hydrotherapy. Precautions towards patient, towards therapist, equipment unit etc.
15. Yoga-Definition-History-Principles-Concepts, General effects of yogic posture on the body.

PRACTICAL:-

1. Assessment and evaluative procedures including motor, sensory, neuromotor coordination, vital capacity, limb length, girth measurement.
2. Range of motion exercise.
3. Stretching.
4. Traction techniques.
5. Taping and bandaging techniques.
6. Assessment of Posture using plumb line.
7. Peripheral Joint Mobilization techniques.
8. Breathing exercise and postural drainage
9. Gait and crutch walking
10. Application of PNF techniques and patterns

MODEL PAPER

BPT-II Year **Exe. Thr.-II.-III**
(4230)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-III
Exercise Therapy-II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. What is hydrotherapy? What are the principles, indications, contra-indications, effects & uses of hydrotherapy 10

Q2 Write in detail about different types of bandaging technique for knee & ankle? 10

Q3. What is postural drainage ? it's indication contraindication ? Write postural drainage position for lingular lobe? 10

Q4. Write down the principles of Aerobic exercise and its physiological effects? 10

Q5. Define Gait? Write down the phases of gait and explain stance phase 10

Q6. What are the criteria for exercise prescription for different age group 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Streching & its types 5

Q8 PNF techniques 5

Q9 Traction technique 5

Q10 Pathological gait 5

Q11 Yoga and its techniques 5

Q12 Posture 5

Q13 Pursed lip breathing 5

Q14 Techniques to improve balance 5

Paper-IV
ELECTRO THERAPY – II (4240)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 100 marks (70 University examination +30 Internal assessment)

THEORY

1. **Low Frequency Current:**

   TENS:
   a) Types of low frequency, pulse widths, frequencies and intensities used as TENS application
   b) Theories of pain relief.
   c) Principle of clinical application, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation.

2 **Medium Frequency Current** (Interferential current)
Definition, characteristics, physiological/therapeutic effect of I.F current, indication, technique of application, contraindication and precaution.

3 **High Frequency Current**
   a) SHORT WAVE DIATHERMY - Introduction, physiological effect and therapeutic effect of SWD, method of application (capacitor field method and cable method etc) technique of treatment, indication, contraindication and dangers.
   b) PULSED SWD - Definition, characteristics, mechanism of work, physiological effect and therapeutic effects, indications, techniques of application, principle of treatment and contraindication.
   c) MICROWAVE DIATHERMY (MWD)-
      - Introduction and characteristics.
      - Physiological & Therapeutic effects.
      - Techniques of application and principle of treatment.
      - Indications, contraindication and Dangers of MWD.

4. **Laser**
   a) Introduction and characteristics.
   b) Types of laser & its Effect on tissues.
   c) Physiological & Therapeutic effects.
   d) Indication, contraindication and dangers.

5. **Ultrasonic Therapy**
   a) Introduction and characteristics & parameters.
   b) Coupling media
   c) Physiological & Therapeutic effects.
   d) Indications, contraindications and dangers.
   e) Testing of apparatus
   f) Technique of application and dosage

6. **Cryotherapy**
   a) Introduction, physical principles

b) Physiological effects
c) Indication and contraindication
d) Therapeutic effects and technique of application

7. **Bio-Feedback**
   a) Introduction, principles of bio-feedback
   b) Therapeutic effects of bio-feedback
   c) Indication and contraindication
   d) Technique of treatment

8. **Electro diagnosis** - EMG and ENG studies, techniques etc.

9. **Advanced Electro Therapy**
   Combined therapy-principle, therapeutic uses and indication like U.S therapy with stimulation or TENS etc.

10 **Nebulizer and humidifier**- definition, principle, types, mechanism, uses and indications

PRACTICAL/VIVA

1. Panal diagram of above apparatus.
2. Testing of above apparatus
3. Technique of application of above treatment modalities (demonstration and practice).
4. Electro-diagnosis (demonstration and practice of following electro-diagnostic measures) F.G test, Observe EMG and NCV- demonstration only
5. Observe Biofeedback Unit.

MODEL PAPER

BPT-II Year **Elec. Thr.-II.-III**
(4240)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-IV

Electro Therapy-II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Explain the various types of low frequency currents and briefly explain the types of TENS, Write in detail, its indication and contraindications	10
Q2	Define IFT, describe the production and physiological effects of IFT	10
Q3.	Write down the principle, production, indication and contra indication of SWD	10
Q4.	Describe the production and application methods of US therapy	10
Q5.	Describe bio-feedback including the principles, indication & contra indication	10
Q6.	Describe Electro diagnosis	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Application method of SWD	5
Q8	Techniques of application of cryotherapy	5
Q9	Properties of LASER	5
Q10	Production of MWD	5
Q11	Application of MWD	5
Q12	Thermal effects of therapeutic ultrasound	5
Q13	Testing of fultrasonic equipment	5
Q14	Combination Therapy	5

Paper-V
BIOMECHANICS & KINESIOLOGY (4250)

Theory Hours: 100
Practical Hours: 50
Total: 150

Theory: 100 marks (70 University examination +30 Internal assessment)

THEORY:

1. **Essential Concepts**
   a) Motion and forces, Axis and planes, Mechanical lever, lever in Human body.
   b) Force distribution-linear force, resultant force & equilibrium, parallel forces in one plane concurrent force.
   c) Newton's law – Gravity and its effects on human body
   d) Forces and moments in action
   e) Concepts of static equilibrium and dynamic equilibrium
   f) Composition and resolution of forces
   g) Friction, Pulleys.

2 **Joint Structure and Functions**
   a) Basic Principles of joint structure and function.
   b) Tissues present in and around joints including fibrous tissue, bone cartilage, connective tissue, ligaments, tendons etc.
   c) Classification of joints.

3 **Muscle Structure and Functions**
   a) Mobility and Stability functions of muscle
   b) Elements of muscle structures and its properties.
   c) Types of muscle contraction and muscle work.
   d) Classification of muscles and their functions
   e) Group action of muscles, coordinated movement.

4. **Posture:**
   a) Anatomical aspects of posture
   b) Types of Posture
   c) Assessment of Posture
   d) Factors affecting posture
   e) Postural deviation

5. **Kinematics and Kinetics Concepts of following joints**
   a) **Upper Extremity:**
      - Scapulo-shoulder Joint
      - Elbow Joint
      - Wrist Joint & Hand
   b) **Lower Extremity:**
      - Hip & pelvis
      - Knee joint
      - Patello femoral joint
      - Ankle and foot

6. **Biomecahnics of vertebral column**

7. **Biomechanics of Gait:**
   a) Gait cycle
   b) Spatio-temporal parameters of gait
   c) Kinematics and Kinetics of human gait
   d) Determinants of gait
   e) Gait deviations in various orthopedic/neurological conditions

MODEL PAPER

BPT-II Year **Biom. Kines.-V**
(4250)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-V

Biomechanics & Kinesiology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Describe kinematics & kinetics of scapulohumeral joint	10
Q2	Write down the classification of muscles. Describe in details about the types of muscle contraction & muscle work	10
Q3.	Explain gait cycle. Discuss in details about the gait deviations in neurological disorders	10
Q4.	Describe kinematics & kinetics of hip joint	10
Q5.	Define posture. Discuss in details about the postural deviations	10
Q6.	Define lever. Explain all its types with examples (Mechanical & human body) in detail	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Locking and unlocking of knee	5
Q8	Biomechanic of ankle joint	5
Q9	Pathological gait	5
Q10	Lumbo pelvic Rhythm	5
Q11	Determinants	5
Q12	Carrying angle angle with diagram	5
Q13	Classification of joints	5
Q14	Arthrokinematics of wrist joint	5

Paper-VI
COMMUNITY MEDICINE (4260)

Theory Hours: 100
Total: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

THEORY:

1. Introduction to community health.
2. General concepts of health and diseases, with reference to natural history of disease with pre-pathogenic and pathogenic phases. The role of socio-economic and cultural environment in health and disease. Epidemiology, definition and scope.
3. Public health administration- an overview of the health administration set up at Central and state levels.
4. The national health programmes -highlighting the role of social, economic and cultural factors in the implementation of the national programme.
5. Health problems of vulnerable groups-pregnant and lactating women, infants and pre-school children, occupational and elderly groups.
6. Occupational Health-definition, scope, occupational disease prevention of occupational disease and hazards.
7. Social security and other measurement for the protection from occupational hazard accident and diseases. Details of compensation acts.
8. Family planning – objectives of national family planning programmes and family methods. A general idea of advantage and disadvantages of the methods.
9. Mental health emphasis on community aspects of mental diseases, role of physiotherapy in mental health problems such as mental retardation.
10. Communicable disease- an overall view of communicable disease classified according to principle mode of transmission, role of insect and other factors.
11. International health agencies.
12. Community medicine and rehabilitation epidemiology, habitat, nutrition, environment anthropology.
    a) The philosophy and need of rehabilitation
    b) Principles of physical medicine
    c) Basic principles of administration or organization

MODEL PAPER

BPT-II Year **Comm. Med.-VI**
(4260)

Second Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-VI
Community Medicine

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	What are vector borne diseases. Write about their classification in brief	10
Q2	What are the health problems of pregnant and lactating women. What are programmes in India to take care of these	10
Q3.	What are various measures for prevention of occupational diseases. Describe in short the most important factory laws in India	10
Q4.	Mention 4 hazards of obesity. Describe the nutritional problems in public health	10
Q5.	Write briefly about role of Physiotherapy Therapy in mental retardation	10
Q6.	Describe national family planning programmes and family methods	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Epidemological triad	5
Q8	Oral contraceptive pill (OCPs)	5
Q9	Preventive measures of infant mortality	5
Q10	Water harvesting	5
Q11	Biomedical waste management	5
Q12	Benefits of employee state insurance scheme	5
Q13	DOTS Plus	5
Q14	Rehabilitation	5

BPT-III year
(1 Year Duration)

Paper-I
CLINICAL ORTHOPAEDICS (4410)

Theory Hours: 100
Practical Hours: 50
Total: 150

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 50 marks (35 University examination +15 Internal assessment)

COURSE OF STUDY

THEORY:

1. Introduction- Brief review of orthopedic conditions.
2. Classification of Fractures, fracture healing, factor influencing fracture healing & complications of fracture & its management.
3. Fracture, and dislocations- Upper extremity, lower extremity and spine.
4. Deformities: Common congenital and acquired deformities of foot, knee, hip, shoulder, elbow and wrist including hand and spine.
5. Infective conditions and lesion of joints and bones. Osteomyelitis, tuberculosis, pyogenic infection., T.B. Joints,
6. Arthritis – Osteoarthritis, Rheumatoid arthritis, cervical and lumbar spondylosis, Ankylosing spondylitis.
7. Soft tissue injuries of Upper extremity, lower Extremity and spine– like Sprains, strains, Tenosynovitis and contractures.
8. Operative Procedures, Amputation Common sites, causes & management, Arthroplasty of joints, joint replacement (total and partial), Osteotomy.
9. Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors.
10. Peripheral nerve injuries-their management.
11. Trauma and trauma care.
12. Reconstructive surgeries for rehabilitation of Poliomyelitis, Leprosy, crush injuries
13. Principle of Tendon transfer and its procedure.
14. Pediatric musculo-skeletal conditions and management.
15. Neck and Low back ache, Sciatica, PIVD , brachial neuralgia etc
16. Sports injuries and its management.
17. Radiological examination.

PRACTICAL/VIVA

1. Case assessment & presentation of various Orthopeadic conditions
2. Exposure to various orthopedics techniques & procedures

MODEL PAPER

BPT-III Year **Clin. Ortho.-I (4410)**

Third Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-I

Clinical Orthopaedics

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Describe classification of fracture neck of femur and how will you manage a case of fracture neck of femur in 70 year old lady	10
Q2.	Describe etiology clinical feature investigation and management of OA knee	10
Q3.	Discuss the causes and management of pott's paraplegia	10
Q4.	Define & classify fractures. Discuss the Complications & its treatment	10
Q5.	Classify the peripheral nerve injury & describe radial nerve injury	10
Q6.	Explain clinical feature, diagnosis and management of PIVD.	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Carpal tunnel syndrome	5
Q8.	Planter fasciitis	5
Q9.	Frozen shoulder	5
Q10.	Tennis elbow	5
Q11.	Colles fracture	5
Q12.	Perthes disease	5
Q13.	Torticollis	5
Q14.	Hand Deformities in rheumatoid arthritis	5

Paper-II
PHYSIOTHERAPY IN ORTHOPAEDIC CONDITIONS (4420)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY:

1. Brief review of the Orthopaedic conditions and various physiotherapeutic modalities, aim, objectives and techniques of physiotherapy should be taught.
2. Physiotherapy management of Fractures, and dislocations- Upper extremity, lower Extremity and spine.
3. Physiotherapy management of Fracture, and dislocation complications.
4. Physiotherapy management of fracture of spine with paraplegia and without neurodeficit.
5. Physiotherapy management of soft tissue injuries of Upper extremity, lower Extremity.
6. Physiotherapy in relation to amputation
7. Physiotherapy management of Common congenital and acquired deformities of foot, knee, hip, shoulder, elbow and wrist
8. Physiotherapy in various acquired & congenital spinal deformities (scoliosis, lordosis, kyphosis)
9. Physiotherapy in Arthritis – Osteoarthritis, Rheumatoid arthritis, cervical and lumbar spondylosis, Ankylosing spondylitis, canal stenosis.
10. Physiotherapy in Infective conditions and lesion of joints and bones- Osteomyelitis, tuberculosis, pyogenic infection., T.B. Joints,
11. Physiotherapy in Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors.
12. Physiotherapy in relation to Arthoplasty & Osteotomy.
13. Physiotherapy in Reconstructive surgeries of Poliomyelitis, Leprosy, crush injuries
14. Physiotherapy in relation to Tendon Transfer.
15. Physiotherapy in Peripheral nerve injury, plexus injury etc.
16. Fracture cast, bracing and mobilization

PRACTICAL:

1. Various techniques of Physiotherapy for the above mentioned condition/diseases should be demonstrated and practiced by the students.
2. Assessment, goal planning and management of above orthopedics conditions
3. General viva.
4. Case Study

MODEL PAPER

BPT-III Year **(4420)**

PT. Ortho.-II

Third Year Bachelor of Physiotherapy (Main) Examination Month Year

PHYSIOTHERAPY IN CLINICAL ORTHOPAEDICS

Paper-II

Time: Three Hour

Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Discuss the supracondylar fracture of humerus, its complications and PT management 10

Q2. Clinical feature, diagnosis and PT management of ankylosing spondylitis 10

Q3. Principles of tendon transfer and PT management of tendon transfer of median nerve injury 10

Q4. Describe excision arthoplasty of knee. PT management of total knee replacement 10

Q5. Write about hand deformities in RA & PT management of RA 10

Q6. Write down about clinical feature, diagnosis and PT management of pott's spine 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. PT management of anterior dislocation of shoulder joint 5

Q8. Carpal tunnel syndrose 5

Q9. De quervain's disease 5

Q10. VIC 5

Q11. CTEV 5

Q12. Scoliosis 5

Q13. PT management of above knee amputation 5

Q14. Cervical spondylosis 5

Paper-III
GEN. MEDICINE INCLUDING PAEDIATRICS (4430)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

General Medicine

1. Introduction of Medicine.
2. Diseases of Respiratory System
   Physiology, clinical presentation in relation to diseases, Chronic obstructive Pulmonary Disease, Bronchial asthma , Pneumonia , Bronchiactesis, Pleural effusion & Empyema thoracis , Pneumothorax etc
3. Diseases of Kidney
   Physiology, clinical presentation in relation to ARF, CRF
4. Hematological Diseases.
   Anemia, Physiology, clinical presentation in relation to Hemophilia
5. Endocrine & Metabolic Diseases, Diabetes mellitus, Cushing syndrome, Addison's disease., Vit. D & Calcium metabolism, Parathyroid gland disorders
6. Nutritional Diseases
   Physiology, clinical presentation in relation to Obesity
7. Connective Tissue Diseases
   Physiology, clinical presentation in relation to Rheumatoid arthritis, Gout & other connective tissue disorders
8. Infectious Diseases
   Tetanus, Dengue, Malaria, Enteric fever, Leprosy, Meningitis
9. HIV & AIDS
10. Cardiac Conditions
    a) Basic anatomy of heart, Coronary circulation and development of heart
    b) Normal cardiac contraction and relaxation: mechanism and diagnosis.
    c) Physiology, clinical presentation in Ischemic heart disease.
    d) Physiology, clinical presentation in Congestive heart failure.
    e) Physiology, clinical presentation in Peripheral Vascular disease & Deep vein thrombosis.

Paediatrics

1. Describe growth and development of child from birth to 12 year including physical, social, adaptive development.
2. Prevention: Appropriate management of high risk pregnancies, prevention of neonatal and postnatal infections, metabolic problems
3. Outline the immunization schedule for children.
4. Cerebral palsy: Define and briefly outline etiology of prenatal, per-natal and postnatal causes, briefly mention pathogenesis, types of cerebral palsy (Classification), findings on examination, general examination of C.N.S, Musculoskeletal and respiratory system.
5. Briefly outline associated defects: Mental retardation, microcephaly, blindness, hearing and speech impairment, squint and convulsions..
6. Still's disease: Classification, pathology in brief, physical findings, course & prognosis. Outline treatment, prevention and correction of deformity.

7. Normal diet of new born and child: List dietary calorie, fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition.
8. Lung infections: Physiology, clinical presentation in relation to bronchiectasis, lung abscess and bronchial asthma, cystic fibrosis
9. Intensive pediatric care & Physiology, clinical presentation.

MODEL PAPER

BPT-III Year **Med. Paed. -III**
(4430)

Third Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-III

Gen. Medicine including Paediatrics

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1	Define bronchial asthma, its etiology, clinical feature, complications & its management	10
Q2	Describe cerebral palsy including the classification, etiology and management of CP	10
Q3	Describe clinical presentation of MI, its management and complication	10
Q4	Define rheumatoid arthritis (RA), clinical features, deformities and its management.	10
Q5	Describe in details National immunization program of India for children.	10
Q6	Define anemia, outline its causes(etiology), classification & management.	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Pneumothorax	5
Q8.	Pneumonia	5
Q9.	Diabetes mellitus	5
Q10.	Leprosy and its management	5
Q11.	DVT	5
Q12.	Muscular dystrophy	5
Q13.	Spina bifida	5
Q14.	Anemia	5

Paper-IV
DISABILITY PREVENTION AND REHABILITATION (4440)

Theory Hours: 100
Practical Hours: 50
Total: 150

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

1. Introduction to Rehabilitation medicine
2. Rehabilitation Team & its members, their role.
3. Definition concerned in the phases of disability process, explanation of its aims & principles. Scope of rehabilitation.
4. Definition concerned with the causes of Impairment, Functional limitation and Disability
5. Disability evaluation, Prevention, Limitation & Rehabilitation.
6. Community & Rehabilitation including C.B.R. Advantages of C.B.R. over I.B.R.
7. Contribution of Social Worker towards rehabilitation
8. Health care system & Present Rehabilitation Services
9. Legislations for rehabilitation services for the Disabled and P.W.D. acts & Recent Amendments.
10. Principles of Communication & its problems and management.
11. Behavioral problems in the Disabled its principle of management.
12. Architectural barriers possible modifications in relation to different disabled conditions.
13. Achieving functional independence
14. Occupational rehabilitation
15. Concepts in geriatric rehabilitation
16. Visual disability: Definition and classification, mobility techniques, communication skills, prevention of blindness.
17. Socio-economic Rehabilitation:
    a) Outline of Social and Vocational Counselling
    b) Vocational evaluation & Goals for disabled, role of Vocational Counselor.
    c) Outline the social implications of disability for the individual and for the community
    d) Pre-vocational Evaluation & Role of V.C. Govt. & NGO
    e) Discuss methods and team involvement in pre-vocational evaluation and training.
18. Functional Assessment scales & its clinical uses eg, functional independent measure, Sylvan index, PEDI, Gross Motor Function, VAS, ASIA, BBS, Modified Ashworth score.
19. Ethics
    a) The implications of and confirmation to the roles of professional conduct
    b) Legal responsibility for their actions in the professional context and understanding liability and obligations in case of medico legal action
    c) A wider knowledge of ethics relating to current social and medical policy in the provision of health care
20. Ergonomics
21. Prosthesis and Orthosis
    a) Definition and Basic Principles
    b) Designing and Construction of Upper & Lower extremity Orthosis & Spinal Orthosis.
    c) Prescription and design of footwear & its modification

d) Wheel Chair: Components of wheel chair; assessment of wheel chair; measurement for wheel chair; features of sports wheel chair.
e) Ambulatory Aids & Assistive Devices
f) Measurement and P.O.P. cast techniques

MODEL PAPER

BPT-III Year **Dis. Pre. & Reh.-IV**
(4440)

Third Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-IV

Disability Prevention and Rehabilitation

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Explain CBR. Write down about rehabilitation team and their role in CBR 10

Q2. Explain geriatric rehabilitation. write down about problems facing in communication with geriatric patients and their management 10

Q3. What are the various schemes of government of India for the assistance of person with disabilities. Describe any one of them 10

Q4. Describe vocational evaluation. Write the role of vocational counselor in vocational training. 10

Q5. Write down about architectural barriers in public places. write modification of architectural barriers. 10

Q6. Define prosthesis. Write down about wheelchair measurements. 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Difference between impairment, disability and handicap 5

Q8. Role of primary health centers 5

Q9. Principles of disability evaluation 5

Q10. Visual disability 5

Q11. Functional assessment scales 5

Q12. Discuss about HKAFO 5

Q13. Pedi 5

Q14. Occupational rehabilitation 5

Paper-V

SOCIOLOGY & PSYCHOLOGY INCLUDING PSYCHIATRY (4450)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

1. This paper will consist of two sections. A and B
2. Each section will be answered in separate answer books.
3. **Section A- Sociology -50 marks (35+15)**
   Section B- Psychology & Psychiatry-50 marks (35+15)

SECTION A- SOCIOLOGY

1. **Introduction:-**
   Definition of Sociology. Sociology as a science, uses of the study of Sociology, application of knowledge of sociology in physiotherapy.

2. **Sociology and health:-**
   Social factors affecting health status, social consciousness and perception of illness, social consciousness and meaning of illness, decision making in taking treatment. Institutions of health, their role in the improvement of health and the people.

3. **Socialization:-**
   Meaning of socialization, influence of social factors on personality, socialization in hospital and socialization in rehabilitation of patients.

4. **Social groups:-**
   Concepts of social groups & influence of formal and informal groups on health and sickness, the role of primary groups and secondary groups in the hospital and rehabilitation setting.

5. **Family:-**
   Influence of family on human personality, discussion of changes in the functions of a family, influence of family on the individual's rehabilitation.

6. **Social problems of the disabled:-**
   Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems:
   a) Population explosion
   b) Poverty and unemployment
   c) Beggary
   d) Juvenile delinquency
   e) Prostitution
   f) Alcoholism
   g) Problems of women in employment

SECTION B- PSYCHOLOGY & PSYCHIATRY

Psychology:

a) **General Psychology:-**

1 Definition of Psychology
   i) Science of mind, consciousness and behavior
   ii) Scope and branches of Psychology

2 Methods of Introspection, observation and experimentation

3 Hereditary and Environment
   i) Relative importance of heredity and environment
   ii) Physical characteristics intelligence and personality.
   iii) Nature vs. nurture controversy

4 Learning
   Types of Learning
   i) Trial and error
   ii) Classical Learning
   iii) Instrumental learning
   iv) Insight for Learning

5 Memory
   i) Steps of memory
   ii) Measurement of memory
   iii) Causes of forgetting
   iv) Concept of STM and LTM

6 Perceptual Process
   i) Nature of perceptual process
   ii) Structural and functional factors in perception
   iii) Illusion and Hallucination

7 Emotion
   i) Emotion and feeling
   ii) Physiological changes
   iii) Theories of emotion (James-Lange and Eonnon-Bird)

8 Motivation
   i) Motive: need and Drive
   ii) Types of motive: Physiological, Psychological and Social

9 Intelligence
   i) Definition: theory and assessment

10 Personality: Definition: Types and measurements

11 Child Psychology
   i) Concept of child Psychology
      (a) Meaning: nature and subject matter of child Psychology
      (b) Practical importance of studying child Psychology for rehabilitation professionals
   ii) Methods of studying child development
      (a) Baby Biography
      (b) Case History
      (c) Behavior rating
   iii) Applied Psychology
      Rehabilitation Psychology:
      Interpersonal Relationships, Family & Social relationships, acceptance about the disability – its outcome in relation to different diagnostic categories

psychological aspects of multiple handicapped, contribution of psychology in Total Rehab.

2. **Psychiatry**
   (1) Definition/criteria of Normality and Abnormality and factor contributing to normal mental health.
   (2) Neurotic disorders.
   (3) Psychotic disorders.
   (4) Psychosomatic disorders.
   (5) Organic mental disorders.
   (6) Substances abuse disorders
   (7) Problems in adjustment in old age.
   (8) Psychotherapy
   (9) Child psychiatry

MODEL PAPER

BPT-III Year **Soci. & Psych.-V**
(4450)

Third Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-V

SOCIOLOGY & PSYCHOLOGY INCLUDING PSYCHIATRY

Time: Three Hour
Maximum Marks :70
Attempt **all** Questions

Section-A (35 Marks)
(Sociology)

Long Answer Questions (Attempt any Two out of Three)

Q1. Define sociology and discuss how sociology is helpful & related to physiotherapy 10

Q2. Explain health institutions and discuss their role in the improvement of health of the people. 10

Q3. Explain the socialization and its influences of social factors of human personality**.** 10

Short Answer Questions (Attempt any Three out of five)

Q4. Population explosion 5

Q5. Problems of village 5

Q6. Stress 5

Q7. Alcoholism 5

Q8. Unemployment and family disorganization 5

Section-B (35 Marks)
(Psychology including Psychiatry)

Long Answer Questions (Attempt any Two out of Three)

Q1. Define learning. Briefly explain classical learning. Explain the insight theory of learning. 10

Q2. Define memory. how can memory be measured. briefly explain the causes of forgetting. 10

Q3. Explain major theories of emotion. 10

Short Answer Questions (Attempt any Three out of five)

Q4. Psychosomatic disorders 5

Q5. Illusion vs hallucination 5

Q6. Guildford theory of intelligence 5

Q7. Perception 5

Q8. Methods of studying of child development 5

DISASTERS MANAGEMENT
(Non University Examination)

Theory Hours: 50

SPECIFIC OBJECTIVES:

1. To acquaint the students with disasters and disaster management.
2. To provide an overview of disasters and disaster management in India.

Unit - I : **Disasters and Disaster Management: An Introduction**

1. Disasters: Definition, Meaning and Nature
2. Types of Disasters: Natural Disasters and Man-made Disasters
3. Disaster Management: Issues and Challenges

Unit - II : Major Disasters in India: An overview

1. Droughts
2. Floods
3. Earthquakes
4. Thunderstorms, Tornadoes and Cyclones

Unit - III : **Disaster Management in India**

1. Institutional Framework for Disaster Management
2. Disaster Prevention, Mitigation and Preparedness
3. Disaster Management Policy
4. Role of Local Bodies in Disaster management

Unit - IV : Field work / Case studies

1. Hazard mapping of vulnerable areas
2. Vulnerability assessment (physical, social, organizational, economical, technological)
3. Risk mitigation planning for vulnerable areas.

REFERENCE BOOKS / PAPERS:

1. Disaster Management in India, Ministry of Home Affairs, Government of India, New Delhi, 2011.
2. National Policy on Disaster Management, NDMA, New Delhi, 2009.
3. Disaster Management Act. (2005), Ministry of Home Affairs, Government of India, New Delhi, 2005.
4. District Disaster Management Plan-Model Template, NIDM, New Delhi, 2005.
5. A Global Report - Reducing Disaster Risk, A Challenge for Development; UNDP Publication, 2004.
6. Good practices in community based disaster risk management; GoI-UNDP Disaster Risk Management Programme; 2002 – 09.
7. Alexander, D. Introduction in Confronting Catastrophe, Oxford University Press, 2000
8. Chakrabarty, U. K. Industrial Disaster Management and Emergency Response, Asian Books Pvt. Ltd., New Delhi 2007.
9. Geomorphological Techniques by Andrew Goudie, Published by Academic Division of Unwin Hyman Ltd. London, UK, 1990.
10. Parasuraman, S & Unnikrishnan, P. V. (ed.), India Disasters Repot Towards a policy initiative. Oxford, 2000.
11. Valdiya, K. S., Environmental geology Indian context. Tata McGraw Hills,1987.

BPT-IV year
(1 Year Duration)

Paper-I
NEUROLOGY AND NEUROSURGERY (4610)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY:

Neurology:

1. General principles of neuroanatomy and neurophysiology.
2. Diagnosis, assessment and principles of management of neurological patient. Cerebral vascular accident
3. Acute infection of CNS- Pyogenic meningitis and sequelae, TB infection of CNS, polio
4. Parkinsonism and other extra-pyramidal disorder.
5. Cerebral palsy
6. Seizure disorders.
7. MS & other demyelinating disease
8. ALS (Amytrophic lateral sclerosis) and other Motor neuron diseases.
9. Diseases of Peripheral Nerves, cranial nerves, Myasthenia Gravis
10. Diseases of muscles (polymyositis, muscular dystrophy)
11. Cervical and lumbar spondylosis and disc prolapsed

Neurosurgery:

1. Head Injury – Causes and mechanism of head injury subdural, epidural and intracranial bleeding, types of neurological disorders following head injury and their complete management.
2. Tumors of neurological system management.
3. Cranial & Spinal cord lesion management including Paraplegia, Hemiplegia, quadriplegia management.
4. Neurogenic bladder-Classification-management
5. Pediatric condition- Spina bifida, meningomyelocele: Outline development, clinical features lower limbs, bladder and bowel control, complications UTI & hydrocephalus
6. Peripheral nerve lesions, management.
7. Surgical management of brain disease and CVA.
8. Neuro-surgical Intensive care

MODEL PAPER

BPT-IV Year **Neurol. Neuros.-I (4610)**

Fourth Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-I

Neurology & Neurosurgery

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Discuss clinical features and management of low back pain	10
Q2.	Name the cranial nerves. Describe the management of Bell's palsy	10
Q3.	Write the management and complication of Gullain-Barre syndrome	10
Q4.	Discuss management to the patient with acute stroke	10
Q5.	Describe clinical feature and management of meningitis	10
Q6.	Describe clinical feature and management of Parkinson's disease.	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Subdural hematoma	5
Q8.	Glasgow coma scale	5
Q9.	Limb girdle muscular dystrophies	5
Q10.	Tubercular Meningitis	5
Q11.	Diabetic Neuropathy	5
Q12.	Function of CSF	5
Q13.	Syringomyelia	5
Q14.	Neurogenic bladder	5

Paper-II
Physiotherapy in Neurology and Neurosurgical conditions (4620)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

THEORY

A. **Neuroanatomy**
Review the basic anatomy of the brain and spinal cord including: Blood supply of the brain and spinal cord, anatomy of the visual pathway, connections of the cerebellum and extra-pyramidal system, relationship of the spinal cord segments, long tracts of the spinal cord, the brachial and lumbar plexuses and cranial nerves.

B. **Neurophysiology**
Review in brief the Neurophysiological basis of: tone and disorders of tone and posture, bladder control, muscle contraction and movement and pain.

C. **Clinical Features & Management**
1. Briefly outline the clinical features and PT management of the following Neurological Disorders:
   a. **Congenital and childhood disorders:-** Hydrocephalus, Spina Bifida, Carnio vertebral junction anomalies, Arnold Chiari malformation, Dandy Walker Syndrome etc.
   b. **Cerebrovascular accidents:-**
      i. General classification, thrombotic, embolic, haemorrhagic inflammatory strokes.
      ii. Gross localization and sequelae.
      iii. Detailed rehabilitative programme.
   c. **Trauma –** broad localization, first aid and PT management of
      i. Head injury
      ii. Spinal cord injury
   d. **Diseases of the spinal cord:-**
      i. Syringomyelia
      ii. Tumors
      iii. Spinal arachnoiditis
      iv. Transverse myelitis
      v. T.B. Spine
   e. **Demyelinating diseases (Central and peripheral)**
      Multiple sclerosis
   f. **Degenerative disorders:-**
      i. Parkinson's disease
      ii. Dementia
   g. **Infections:-**
      i. Meningitis and encephalitis
      ii. Tuberculosis infection of central nervous system.

iii. Poliomyelitis
iv. Brain abscess
v. Tabes Dorsalis
vi. Acute disseminated encephalomyelitis

2. **Diseases of the muscle including myopathies:** Classification, signs, symptoms, progression and management.
3. Epilepsy: Definition, classification and management
4. Myasthenia Gravis: Definition, course and management
5. **Intracranial tumors:** Broad classification, signs and symptoms.
6. Motor neuron disease
7. Extra pyramidal tract lesions
8. Ataxia- sensory and cerebellar
9. Polyneuropathy
10. Bells Palsy, facial palsy and Trigeminal Neuralgia.
11. Disc Prolapse
12. Herniation of Brain
13. Cerebral Palsy

D. **Physiotherapeutic Approaches applied in management of neurological conditions** (Bobath, Brunnstorm, Roods, PNF etc) including concepts in neuroplasticity.
Wheel Chairs measurement & transfer

E. **Paediatrics**
Common congenital and acquired musculoskeletal, neurological, hereditary, metabolic disorders

F. **Geriatrics**
Identification, assessment and management of geriatric musculoskeletal, cardio-pulmonary, neurological, somato-sensory; injuries and accidents specifically to aged.

PRACTICAL:

1 Various technique of Physiotherapy of the above mentioned conditions/diseases should be demonstrated and practiced by the students
2 Assessment planning and management of Neurological conditions
3 General viva
4 Case Study

MODEL PAPER

BPT-IV Year **PT Neurol. Neuros. Cond.-II (4620)**

Fourth Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-II

Physiotherapy in Neurology & Neurosurgical Conditions

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Write down classification of SDH (Subdural haematoma) and actiology and PT management 10

Q2. Write in detail about poliomyelitis and PT management 10

Q3. Classify SCI. write down in detail about brown squad syndrome with rehabilitation 10

Q4. Give classification of head injury. Write down the assessment and PT management of a patient in unconscious state admitted in ICU 10

Q5. Write down the assessment and PT management of transverse myelitis 10

Q6. Assessment, classification and PT management of motor neuron disease. 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Hydrocephalus 5

Q8. Duchenne muscle dystrophy 5

Q9. Modified ashworth scale 5

Q10. Cerebellar ataxia 5

Q11. Myasthenia gravis 5

Q12. Trigeminal neuralgia 5

Q13. PT management of bell's palsy 5

Q14. PT management of spasticity 5

Paper-III
GEN. SURGERY INCLUDING CTVS (4630)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

1. **General Surgery**

   (1) Principles of Pre and postoperative management of surgical patients.
   (2) Shock - definition, types, clinical features, pathology and management
   (3) Haemorrhage- common sites, complication, clinical features and management.
   (4) Surgical intensive care.
   (5) Description of events frequently accompanying in general anesthesia, blood transfusion and physiological response of the body to surgery.
   (6) Abdominal surgery: Incisions, complications and management of various abdominal surgeries.
   (7) Wounds and wound infections, Sinuses and ulcers.
   (8) Burns: Degrees of burns and, management and reconstructive surgery following burns and complications of Burns.

2. **Plastic Surgery**-

   Principles of cineplasty, tendon transplant, cosmetic surgery, types of grafts, surgery of hand with emphasis on management of trauma and leprosy.

3. **Cardiothoracic Surgery -**

   (1) **Surgical approach -** Incisions for cardiothoracic surgery (Thoracotomy, Thoracoplasty, Lobectomy, Pneumonectomy, Decortication, CABG, Valvular Surgery, Congenital, Heart Disease Surgeries and Surgery for Peripheral Vascular Disease)
   (2) **Post operative complications & management**- of above conditions.

MODEL PAPER

BPT-IV Year **Surg. CTVS.-III**
(4630)

Fourth Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-III

Gen. Surgery Including CTVS

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Describe in detail about factors affecting wound healing 10

Q2. Write a note on indication & complications of blood transfusion and its management 10

Q3. Write classification of shock, pathophysiology of shock and management of hemorrhagic shock 10

Q4. Define ulcer, discuss classification and management of ulcer 10

Q5. Write down degrees of burn complications of burns and role of physiotherapy in their management 10

Q6. Classify Haemorrhage, clinical features and management of haemorrhage 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. Types of abdominal incision 5

Q8. Deep vein thrombosis 5

Q9. Tendon transfer 5

Q10. Rule of nine in burn 5

Q11. Tension Pneumothorax 5

Q12. Classification of surgical wounds 5

Q13. Blood transfusion 5

Q14. Types of grafts 5

Paper-IV
PHYSIOTHERAPY IN MEDICAL AND SURGICAL CONDITIONS (4640)

Theory Hours: 100
Practical Hours: 100
Total: 200

Theory: 100 marks (70 University examination +30 Internal assessment)
Practical : 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

General Medicine

1. **Introduction:** Brief review of the following medical condition and various modalities of physiotherapy, aims, mean and techniques of physiotherapy should be taught.

2. Physiotherapy in relation to:
   a. Edema- classification and management
   b) Skin Conditions - Acne, psoriasis, alopecia, leucoderma, leprosy, STDs
   c) Deficiency disease- Rickets, Vitamin Deficiency Syndrome, osteoporosis, osteomalacia etc
   d) Obesity
   e) Non-articular rheumatism
   f) Connective tissue disorders

Respiratory

1. Review of mechanism of normal respiration.
2. Chest examination including auscultation.
3. Pulmonary function testing
4. Physiotherapy management of
   a) COPD, asthma, lung abscess, bronchiectasis, emphysema etc
   b) Pleurisy, empyma, pneumonia etc
   c) Bacterial diseases
   d) Paralysis of diaphragm and vocal cords
   e) Chest deformities

Cardio-Vascular

Congestive Heart Failure, Myocardial Infarction & Peripheral vascular diseases, gangrene, DVT and PE

Surgical Conditions

1. Brief review of the following surgical conditions and various physiotherapeutic modalities, aims, means and techniques of physiotherapy should be taught.
2. Postural drainage & respiratory physiotherapy in CVTS including principles of cardiac rehabilitation.
3. Physiotherapy in patients on ventilators
4. Pre and Post Operative physiotherapy management of following conditions.
   a) Thoractomy, Lobectomy, ThoracoPlasty, Pneumonectomy, Decortication, Nephrectomy, Radical Mastectomy, Abdominal Surgeries

5. Orientation about atelectasis, pneumothorax & other Post operative Complications.
6. Pre and post operative physiotherapy management of paediatric and adult cardiac surgery including vascular surgery
7. Burn & its classification Physiotherapy management.
8. Pre and Postoperative Physiotherapy of skin grafting
9. Physiotherapy of cases after Reconstructive surgery of hand
10. PT in Wound management

Obs and Gynae.

1. Anatomy of pelvic organs mechanism & physiology of pelvic floor sphincter muscles., Pregnancy – stage of pregnancy – Labour – stage of Labour – delivery , Physiotherapy in PID, diastases recti, incontinence, prolapse uterus, etc.
2. Menopause effects in emotions and musculo-skeletal system & common gynecological disorders. Physiotherapy in obstetrics(Antenatal and postnatal exercises)

PRACTICAL:

1. Various techniques of Physiotherapy for the above mentioned conditions/diseases should be demonstrated and practiced by the students.
2. Assessment planning and management of Surgical conditions
3. General viva.
4. Case Study

MODEL PAPER

BPT-IV Year **Physio. In Medi. Surg. Condi.-IV (4640)**

Fourth Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-IV

Physiotherapy in Medical & Surgical Conditions

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1. Describe in detail about bronchiectasis its physiotherapy management 10

Q2. Define heart failure. Write in brief about its clinical features, types and physiotherapy management 10

Q3. Write down PID and its PT management stress incontinence and its PT management 10

Q4. Define muscular dystrophy & its tupes PT management of muscular dystrophy 10

Q5. Define postural drainage. Write the indication and contraindication of postural drainage. Draw a neat diagram to show the postural drainage position of middle lobe? 10

Q6. Explain the sign and symptoms which occur during an acute attack of bronchial asthma. Give an account of its PT management 10

Short Answer Questions (Attempt any Six out of Eight)

Q7. ACBT 5

Q8. Thoracotomy 5

Q9. Stress incontinence 5

Q10. Leprosy 5

Q11. Wound management 5

Q12. Role of PT in pre & post operative skin grafting 5

Q13. Pressure sores 5

Q14. Types of Ventilators 5

Paper-V
EXERCISE PHYSIOLOGY AND SPORTS PHYSIOTHERAPY (4650)

Theory Hours: 100

Theory: 100 marks (70 University examination +30 Internal assessment)

COURSE OF STUDY

1. Pre-exercise evaluation
2. Diet and nutrition, ergogenic aids
3. Measurement of fitness components and sports skills
   - Measurement of muscular strength
   - Measurement of muscular endurance
   - Measurement of flexibility
   - Determination exercise endurance
4. Physiological effects of exercise on body systems
   - Muscular system
   - Endocrine system
   - Cardio-respiratory system
   - Nervous system
5. Sports injuries
   - Cervical whiplash injuries, SI joint dysfunction
   - Hip-muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis
   - Knee-menisci, cruciate, collateral ligaments, osteochondritis, chondromalacia patellae, swimmers knee, patella-femoral pain syndrome
   - Leg & ankle-shin splint, achillis tendonitis & rupture, TA bursitis, ankle sprain, plantar fasciitis, turf toe syndrome
   - helmet compression syndrome
6. Sports injuries
   - Shoulder- instability, rotator cuff injury, biceps tendonitis and rupture, and acromio-clavicular joint injuries
   - Elbow – tennis elbow, golfer's elbow
   - Wrist and hand-carpal tunnel syndrome, gamekeeper's thumb
   - G) Principles of injury prevention
7. Principles of training & Rehabilitation in sports injuries
8. Sports in special age groups:-
   - Female athletic triad/RED-s
   - Younger athlete- Musculo-skeletal problems, management, children with chronic illness and nutrition
   - Older athlete- Physiological changes with aging, benefits, risks of exercise in elderly, exercise prescription guidelines for elderly

MODEL PAPER

BPT-IV Year **Ex. Phy. Spor. Phy.-V**
(4650)

Fourth Year Bachelor of Physiotherapy (Main) Examination Month Year

Paper-V

Exercise Physiology & Sports Physiotherapy

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions

Long Answer Questions (Attempt any four out of Six)

Q1.	Describe in terms of pre game diet and post game diet	10
Q2.	Describe the physiological effects of exercise on endocrine system and nervous system	10
Q3.	What is PIVD ? Describe the physiotherapeutic management for sport personnel	10
Q4.	Describe the principle of training and rehabilitation in sports injury	10
Q5.	Describe the physiological effects of exercise on cardiorespiratory and muscular system	10
Q6.	Discuss the principles of injury prevention in sports	10

Short Answer Questions (Attempt any Six out of Eight)

Q7.	Female Athlete Triad	5
Q8.	Swimmer's knee	5
Q9.	Doping	5
Q10.	Musculoskeletal problem in younger athlete	5
Q11.	Risk of exercise in elderly	5
Q12.	Jumpers knee	5
Q13.	Whiplash injury	5
Q14.	Ergoganic aids	5

RESEARCH METHODOLOGY & BIOSTATISTICS
(Non-University examination)

Theory Hours: 50

1. Review of literature
2. Study design
3. Sample size
4. Sampling variability & significance
5. Ethical aspects
6. Data collection analysis, interpretation and presentation
7. Common statistical terms
8. Measures of location, average & percentiles
9. Variability & its measures
10. Normal distribution & normal curve
11. Probability
12. Significance of difference in mean
13. Chi-Square test
14. Correlation & regression
15. Demography & vital statistics
16. Correlation of measures of population & vital statistics
17. Use of Micro Computer in Research
18. Professional management ethics, administration, budget and development of organization.

Note:
This syllabus is made by the members of the board of studies of Faculty of Physiotherapy, MGUMST. Members of BOS Collected Syllabi of 5 Indian Universities. Their names are mention as below:-

1. Rajasthan University of Health Sciences, Jaipur
2. University of Delhi, Delhi
3. Manipal University (MAHE), Manipal
4. DY Patil University, Mumbai
5. Devi Ahilya Vishvavidyalaya, Indore

PROJECT WORK

1. Every candidate is required to carry out work on a selected research project under the guidance of a teacher. The results of such a work shall be submitted in the form of project work 15 days before completion of the internship.
2. The project should includes identification of a problem, formulation of a hypothesis and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
3. Every candidate shall submit to the Principal in the prescribed Performa
4. The guide will be only a facilitator, advisor of the concept and held responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.
5. The project should be written under the following headings:
   a) Introduction
   b) Review of literature
   c) Aims or objectives
   d) Material and methods
   e) Results
   f) Discussion
   g) Conclusion
   h) References
   i) Appendices
6. The written text of project shall not be less than 50 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27” x 11.69”) and spiral bound properly. The guide shall certify the project.
7. Two copies of project thus prepared shall be signed by the guide and then submitted to the Principal, 15 days before the end of the internship.

Selection of Elective Courses during BPT course duration

Every student has to select any one elective subject out of four elective subjects mentioned below at the beginning of the academic year during his/her BPT course duration. The Examination of these subjects shall be conducted at the college level.

Sr. No.	Subject	Teaching hours		
		Theory	**Practical**	**Total**
1	**Disaster Management**	**50**	**-**	**50**
2	Information and Communication Technology in Health Education	35	15	50
3	**Research Methodology & Biostatisics**	**50**	**-**	**50**
4	Effective English	50	-	50

Distribution of marks

Sr. No.	Subject	Marks Distribution		
		Theory	**Internal Assessment**	**Total**
1	Disaster Management	70	30	100
2	Information and Communication Technology in Health Education	70	30	100
3	Research Methodology & Biostatisics	70	30	100
4	Effective English	70	30	100

A candidate can appear in the elective subject examinations to be conducted at the college level before the University examinations at the end of BPT-I year or BPT-II year or BPT-III year or BPT-IV year . Only such candidates shall be eligible to fill University examination

form of BPT- IV year (final year) who have passed their elective subject. It shall be mandatory to obtain 50% marks in the aggregate of prescribed total marks (i.e. 50 out of 100) to pass the elective subjects. Marks of all such candidates who have passed their elective subject shall be sent in the following format by the Principal of the college to the University while sending their examination forms of BPT- IV year (final year) :

S. No.	University Roll No.	Name of the student	Father's Name	Name of elective subject	Marks obtained	Result

Those candidates who do not pass their elective subjects shall not be eligible to submit their BPT- IV year (final year) University examination form and accordingly they will not be permitted to appear in the University examination of BPT- IV year (final year) of the course.

Marks obtained by the candidates in their elective subject shall be mentioned separately in the marks sheets of the University examinations. These marks shall not be counted for preparing the merit list.

NOTE:- Two subjects name:-i) **Disaster Management ii) Research Methodology & Biostatisics**

are already included in the curriculum of BPT 3rd yr & BPT 4 th yr as a Non University Examination. Now these subjects will be known as Elective course from the academic year 2020-2021 onwards.**These fourElective courses will be included in the Curriculam of BPT from the academic year 2020-2021 onwards.**

Elective course-1

DISASTERS MANAGEMENT

(Non University Examination)

Theory Hours: 50

Total Hours: 50

Specific Objectives:

1. To acquaint the students with disasters and disaster management.
2. To provide an overview of disasters and disaster management in India.

Syllabus:-

Unit - I : **Disasters and Disaster Management: An Introduction**

1. Disasters: Definition, Meaning and Nature
2. Types of Disasters: Natural Disasters and Man-made Disasters
3. Disaster Management: Issues and Challenges

Unit - II : Major Disasters in India: An overview

1. Droughts
2. Floods
3. Earthquakes
4. Thunderstorms, Tornadoes and Cyclones

Unit - III : **Disaster Management in India**

1. Institutional Framework for Disaster Management
2. Disaster Prevention, Mitigation and Preparedness
3. Disaster Management Policy
4. Role of Local Bodies in Disaster management

Unit - IV : Field work / Case studies

1. Hazard mapping of vulnerable areas
2. Vulnerability assessment (physical, social, organizational, economical, technological)

3. Risk mitigation planning for vulnerable areas.

REFERENCE BOOKS / PAPERS:

1. Disaster Management in India, Ministry of Home Affairs, Government of India, New Delhi, 2011.
2. National Policy on Disaster Management, NDMA, New Delhi, 2009.
3. Disaster Management Act. (2005), Ministry of Home Affairs, Government of India, New Delhi, 2005.
4. District Disaster Management Plan-Model Template, NIDM, New Delhi, 2005.
5. A Global Report - Reducing Disaster Risk, A Challenge for Development; UNDP Publication, 2004.
6. Good practices in community based disaster risk management; GoI-UNDP Disaster Risk Management Programme; 2002 – 09.
7. Alexander, D. Introduction in Confronting Catastrophe, Oxford University Press, 2000
8. Chakrabarty, U. K. Industrial Disaster Management and Emergency Response, Asian Books Pvt. Ltd., New Delhi 2007.
9. Geomorphological Techniques by Andrew Goudie, Published by Academic Division of Unwin Hyman Ltd. London, UK, 1990.
10. Parasuraman, S & Unnikrishnan, P. V. (ed.), India Disasters Repot Towards a policy initiative. Oxford, 2000.
11. Valdiya, K. S., Environmental geology Indian context. Tata McGraw Hills,1987.

Elective course-2

INFORMATION AND COMMUNICATION TECHNOLOGY IN HEALTH EDUCATION

(Non-University examination)

Theory Hours: 35

Practical Hours: 15

Total Hours: 50

Learning objectives

Upon successful completion of this subject, students will be able-

(1) To obtain the basic knowledge on computer, devices used in computers.
(2) To know the uses of computers like MS office, Power point Presentations, Excel documents.
(3) To know about uses of internet, its advantages in regular updating the knowledge in Occupational therapy profession.

Syllabus:-

Introduction

1. Introduction to computers-History of Computer, Generation of Computer, Classification of Computers, Input Devices, Output Devices, Central Processing Unit, Components of CPU, Memory Unit, Peripheral Devices
2. Introduction to M.S. Windows
3. Internet and its applications
4. MGUMST web forum & portal
5. Google Applications
6. Introduction to M.S. Office - Word, Power Point, Excel,
7. Publisher

The Digital Age

Computer and communications, the five operations of a computer-and communication system- input, processing, output, storage and communications as well as the corresponding

categories of hardware, five major categories of computers, development I communication Technology.

Applications Software

Applications and systems software, ethics of copying software, four types of applications software, entertainment education and reference, productivity and business and specialized, key functions of word processors, spreadsheets, database managers, graphics programs and suites, group-ware, and internet web browsers.

Storage Devices

Units of storage capacity, primary and secondary storage, data compression, data storage on diskette, hard disks, optical disks, and magnetic tape and describe the purposes of storage media.

Communications

Usage of communications technology, telephone-related services, online information services, the internet

Multimedia

What is multimedia – Multimedia PC– Multimedia Hardware - Central processor – color display, Multimedia accessories – CD ROM – Digital Audio – Audio speakers

– Digital video– MIDI – deodisc Read/write storage device- Multimedia software

Radio propagation:

Use of computers in physical therapy – Application Packages used in statistical analysis.

Recommended books

(1) Free T. Hotstetter, ―Multimedia Literacy‖ M<egraw Hill,
(2) Simon J. Gibbs, Dinoysios C. Tsichritziz, ―Multimedia programming‖, Addison Wesley
(3) John F.Koefgel Buford, ―Multimedia Systems‖, Addison Wesley
(4) John Vince, ―Virtual Reality Systems‖ Addison Wesley.
(5) AndressF.Molisch, ―Wideband Wireless digital communication‖ Pear Education Asia

Elective course-3

RESEARCH METHODOLOGY & BIOSTATISTICS

(Non-University examination)

Theory Hours: 50

Total Hours: 50

The objective of this course is that after completion of course the student shall be able to understand the basic knowledge about Research, Methodology of Research and common statistics used in research.

Syllabus:-

1. Review of literature
2. Study design
3. Sample size
4. Sampling variability & significance
5. Ethical aspects
6. Data collection analysis, interpretation and presentation
7. Common statistical terms
8. Measures of location, average & percentiles
9. Variability & its measures
10. Normal distribution & normal curve
11. Probability
12. Significance of difference in mean
13. Chi-Square test
14. Correlation & regression
15. Demography & vital statistics
16. Correlation of measures of population & vital statistics
17. Use of Micro Computer in Research
18. Professional management ethics, administration, budget and development of organization.

Recommended books:-

1) Hilway, T. (1964). *Introduction to Research*, 2nd ed., Houghton Mifflin: Boston.
2) Burgess, Earnest. (1960).*Research Methods in Sociology*, New York Philosophical Library: New York.
3) Hicks, Research Methods for Clinical Therapists—Applied Project Design and Analysis (4th ed.), Churchill Livingstone (2004).
4) John Peter, W M. (1971). *Statistical Design and Analysis of Experiments*, The Macmillan Co.: New York.
5) ***Research Methodology*** : Methods And Techniques (Multi Colour Edition) Paperback – 1 September 2019. by ***C.R. Kothari*** (Author), Gaurav Garg (Author)

Elective course-4

EFFECTIVE ENGLISH

(Non-University examination)

Theory Hours: 50

Total Hours: 50

Course Objective:

The objectives of this course is that after 40 hours of lectures, demonstrations and practicals the student will be able to Speak fluently, intelligibly and appropriately to teachers, Colleagues, Doctors, Patients and friends at the college, Hospital and hostel etc. about academic or (occupational) areas of interest. Course Outcome:

1. Students can gain knowledge about the various traditions writer and followed in English
2. Individuals can gain self – confidence in their own voice and speak out their opinions with confidence
3. Students will gain the ability to become a accomplished active readers
4. Helps to build the knowledge and understanding simultaneously through listening and give their point of view
5. Students will be able to write effectively in variety of professional and social setting
6. Acquire the ability to read and understand the literature and have the ability to identify the topics and formulate questions
7. Good communication skills which helps in easy rapport between the patient and therapist
8. Gain the fluency in speaking which helps in easy teaching method and presentation

UNIT – I INTRODUCTION

1. History of the language
2. Regional distribution
3. Variation in dialect and accent

UNIT – II PHONOLOGY

1. Consonants and vowels
2. Phontactics
3. Stress, rhythm and intonation
4. Regional variation

UNIT – III GRAMMER

1. Noun, Pronoun
2. Verb, Tense
3. Adjuncts
4. Adjectives

UNIT – IV SYNTAX

1. Clause syntax
2. Auxillary verbs
3. Vocabulary
4. Word formation
5. Pronounciation

UNIT – V PRESENTATION

1. Oral presentation & Panel discussion
2. Interview preparation
3. Clarity and specificity

Text Book:

1. O' Connor, I.D., Better English Pronunciation - Cambridge, Cambridge University.2009

Reference:

1. Water F.V.A , Proficiency Course in English – Hodder and Stronghton, London.1994
2. Tone Daniel, I.M. , English Pronouncing Dictionary –Dent and sons Ltd. London.2004