REGULATION FOR
BACHELOR IN PHYSIOTHERAPY

VINOBA BHAVE UNIVERSITY, HAZARIBAG,

JHARKHAND

1. Name of the course:
   Bachelor of physiotherapy (BPT)
2. Duration
   The duration of BPT course shall be for 4 years and six months, which shall include lectures, practical and six month internship after passing all the exams.
3. Eligibility:
   The candidates who have passed Intermediate / XII Std. or equivalent examinations having English as a subject and a minimum of 45% marks in Physics, Chemistry and Biology as mandatory subject will be eligible for admission. Admission will be based on entrance test consisting of written test of 90 marks and interview of 10 marks. The examination will be conducted on the basis of the Jharkhand Intermediate Board Syllabus. The distribution of marks will be as: Biology - 40 marks; Physics - 20 marks; Chemistry - 20 marks; English - 10 marks. Selection will be made on the merit basis. Short listed candidates will be called for Interview. Reservation as per University/ State Government norms for admission.
4. Syllabus:
   The syllabus in each paper shall be demarcated into well defined units/areas of content along with a topic wise break up. The board of studies concerned constituted by the vice – chancellor shall be responsible for the syllabus subject to the provisions of this regulation.
5. Admission Process:
   Application form and prospectus will be available from the director of department of physiotherapy, Vinoba Bhave University, Hazaribag on payment of Rs. 1000/- through D.D drawn in favour of "Director, Department of physiotherapy" payable at Hazaribag by post or through cash by challan in person. **Selection shall be on all India bases and reservation policy will be strictly followed.**
   a. Admission:
      A Student selected for admission must take admission within the stipulated time. If he/she fails to do so he/she may be condoned by the Director of physiotherapy department.

b. Intake capacity

40 students per year.

c. Fee Structure

- Course fee = Rs. 30,000/- Per Semester (Excluding Exam Fee)
- At the time of admission in 1st Semester a sum of Rs. 5,000/- is charged as caution money in addition to the course fee (i.e., Rs. 30,000 + Rs. 5,000 = Rs. 35,000/-) which is refundable when the student complete the course.

6. Registration

Within one month of admission every student shall be registered with Vinoba Bhave University, Hazaribag through Department of Physiotherapy. Student admitted shall have to submit Migration Certificate, 3 Passport & 2 Stamp size Photographs, fee and necessary documents. Department of Physiotherapy shall forward all the applications along with the fee and required documents to be Registration Section of Vinoba Bhave University, Hazaribag within 60 days of closing of admission.

7. Course structure, Academic Evaluation & University Examination

There shall be Semester System of University Examination. Each semester will be of six month duration. The duration of Semester I, III, V and VII shall be from July to December (6 months) during which Admission, Course Work, and Conduct of Examinations and Declaration of Results shall be completed including Semester Break. The duration of Semester II, IV, VI and VIII shall be from January to June (6 months) during which Admission, Course Work, Conduct of Examinations and Declaration of Results shall be completed, including Semester Break. After passing 8th Semester, six-month internship is compulsory.

8. Scheme of Examination of a semester:

The examination of each paper shall have two components- written / Practical examination at the end of each semester (End-Semester) carrying 70% marks to be conducted by the University and internal (Mid-Semester) of 30% to be evaluated by the Departmental council. Mid-Semester shall comprise the written component / Practical/ Viva-voce / Seminars/ and day-to-day assessment.

a. Pass marks:

In all the subject papers the pass marks shall be 50% including internal assessment marks: i.e. 50 out of 100 marks (internal assessment 30 marks + 70 marks University exams). 60% marks or above obtained in aggregate will be declared “First Class” and 75% or above obtained in any paper shall be declared to have “passed with honours in the subject”.

b. Attendance Rule:

(a) All students must attend every lecture, practical/ clinical classes and other activities of the college. However, the attendance requirement will be a minimum of 75% of the classes actually held.

(b) A student must inform the Principal concerned immediately of any instance of continuous absence from classes.

(c) A student who is absent due to illness should approach the teachers concerned for makeup quizzer, assignment and laboratory work.

(d) A student who has been **absent from a Mid-Semester / Internal Examination** to due illness shall approach the teacher concerned for makeup test immediately on return to class. The request should be supported with a medical certificate issued by a registered medical practitioner.

(e) In case the period of absence on medical grounds as more than 20 working days during the semester a student may apply for withdrawal from the semester. Such application must be made as early as possible. No applications for semester withdrawal will be considered after external examination have commenced. Partial withdrawal in a semester is not allowed.

(f) If a student is continuously absent from the institute for more than four weeks without permission of the Head of Department concerned, his/her name will be removed from institute rolls

c. Promotions to next higher class:

(a) Advancements to the next semester shall be permitted only with a maximum of two backlog papers from the preceding semester. The candidate will be allowed to clear the failed papers in the next examinations. But one who fails in all the subjects or more than two papers must either repeat the semester or quit the course.

(b) Every candidate gets a number of chances to clear his backlog from any previous year, though the total number of years allowed for completing all the examinations, due or pending backlog, for this four –year BPT course shall be six years. However, if he passes the final year exams but is left with some papers from any one of the previous year "not cleared" then he may be given may be given "one additional chance" beyond the six-year provision. After clearing all the backlog s and 8^{th} semester examinations he/she will be allowed six months internship.

d. Re-evaluation:

Re-evaluation of the answer script shall not be ordinarily allowed. However, a student can apply for **the security** of his / her answer script, after paying the required fee for it, within 15 days of the publication of the results. The paper shall be scrutinized by the Examination Department of the University to see if any question (or part thereof) has been left unmarked or, whether marks obtained have been transcribed correctly.

9. Placement:

The hospital industry is expanding and opening up. This also opens the possibility of future placement. The placement cell is in its place and shall pay its crucial role.

10 Anti Ranging:

Raging is strictly prohibited in the campus. Ragging is a CRIME! Do not engage in or support it.

11. Since BPT is new course, introduced for the first time, if any difficulty arises it shall be sorted out by HOD/ Director of the subject and the concerned Dean with the approval of the Vice-Chancellor. However, it will be placed in the meeting of next Academic Council for approval.

12. The University can, at any time, substitute, alter, amend, add or delete any of the provisions of this Regulation subject to such conditions as may be prescribed thereafter by the UGC and the Academic Council of this University.

INTERNSHIP GUIDELINES (AMENDED)

- Candidates seeking entry to the internship period must have passed all examinations in all subjects (i.e. He/She must have secured total credits of the Programme).

- Duration: 6 months inclusive of posting in rural setup/CBR/similar setup.

- During the internship candidate shall have to work full time average 7 hours per day (each working day) for 6 Calendar months (total Credit hours – 1260).

- Each candidate is allowed maximum of 6 holidays during entire Internship Programme and in case of any exigencies during which the candidate remains absent for a period more than 6 days, he/she will have to work for the extra days during which the candidate has remained absent.

- Assessment: The interns/candidate shall maintain the record of work, which will be verified and certified by the Head of the Department under whom he/she works. Apart from scrutiny of the record of work, the Head of the Department shall undertake assessment and evaluation of training in attendance, discipline, knowledge, skills and attitude for the duration of training. The assessment report of the candidate shall be sent to the Parent institution.

- Based on the record of work and date of evaluation the Director/Principal shall issue 'Certificate of Satisfactory Completion' of training following which the University shall award the Bachelor of Physiotherapy Degree or declare the candidate eligible for the same.

- In the event of unsatisfactory report, the said intern shall have to repeat the internship for the period to be decided by the Head of the Institution concerned.

- Intern will abide by all the rules & regulations of Institution/Hospital where they are posted.

- Intern shall be responsible for proper use of equipments of the Institute/Hospital where they are posted. He/She shall be liable to pay for damages caused to the equipments resulting from improper use by him/her.

- Internship duration can be extended by the Principal / Director on the grounds:

  i Remaining absent in excess of the permitted 6 days leave period, which is due: An intern will compensate by working extra for each day leave taken.
  ii Unsatisfactory performance during the period: If there are unsatisfactory reports in terms of performance of the intern, submitted by the Department In-charge, the said intern shall have to repeat the internship for a period at least two months further.

iii Case of indiscipline at any level: A Discipline and Action Committee will be formed in the college / Institution convened by Internship coordinator/HOD PT & headed by Director Principal. In case of any lack of discipline, breach of trust or indulgence in any criminal activity on the part of the interns when reported by the concerned departments of Hospitals Institutions where the interns have been posted, the defaulting Intern shall be called back immediately and subjected to disciplinary proceedings by the Disciplinary Action Committee.

iv Punishments:

a. Suspension of Internship for a period of 3-4 weeks for the reasons to be recorded. Following this disciplinary suspension, internship can be resumed only after submission of an appropriate undertaking/guarantee/surety. Period of suspension shall be considered as Break in Internship. Disciplinary Action Committee shall decide the period of suspension and resumption of Internship for a specified period.

b. Rustication & Termination: In case of a serious complaint of indiscipline or breach of trust against intern or any criminal activity done by intern according to the law of the country, he/she may be rusticated along with termination of Internship.

Hon'ble Court of Law can resume the Internship in this case only on the abrogation of criminal charges against him.

- Institution shall have to satisfy themselves that satisfactory infrastructure facilities of Physiotherapy exist in the Institute / Hospital where the internship training has to be undertaken. Following parameters / guidelines have been suggested:
  a. It is mandatory for the Institution conducting BPT Programme to have its own Physiotherapy clinic fully furnished with all the necessary equipments as per the curriculum of the Programme.
  b. The Institutes & the Hospitals should have the Physiotherapy section with all the necessary infrastructure facilities.
  c. Senior Physiotherapist with sufficient clinical experience should manage the physiotherapy departments in the Institutes/Hospitals.
  d. Institute Director / principal can at his discretion grant NOC to the students to do the Internship at the place of his choice provided, the concerned Hospital fully satisfies the above criteria. For the purpose of granting NOC the candidate shall have to submit to the Institution the status of Physiotherapy Services available at the place where he intend to do his Internship.
  e.

EVALUATION OF STUDENTS UNDER PRACTICAL/INTERNSHIP

S. No.	Description	Satisfactory/Unsatisfactory
1.	Attendance	
2.	Discipline and general behaviour in the Department	
3.	Approach to patients	
4.	Inquisitiveness regarding the subject	
5.	Knowledge about evaluation of conditions	
6.	Knowledge about various therapeutic modalities	
7.	Knowledge about actual application of therapeutic skills	

SYLLABUS

OF

BPT FIRST SEMESTER

INTRODUCTION TO PHYSIOTHERAPY

Objective - By the end of the 10 hours of introduction, the candidate will -

1] Acquire the geographical orientation of the various concerned section of the college & the clinical training areas.
2] Get the overall idea about the graduate programme & its scope in the professional practice.
3] Learn the bed-side manners, General ethical code & discipline of the Department.
4] Acquire the skill of History taking in general.

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIRST SEMESTER

ANATOMY-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 101

Goal – To provide the student with the necessary Anatomical knowledge & skills to practice as a qualified Physiotherapist

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Objectives- MUSCULO – SKELETAL

i) The student should be able to identify & describe Anatomical aspects of muscle bones & joints, & to understand and Analyze movements.
ii) To understand the Anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to limbs & spine.
iii) To be able to localize various surface land-marks;
iv) To understand & describe the mechanism of posture & gait the. Anatomical basis of abnormal gait.

1] GENERAL Anatomy

a) General Histology, study of the basic tissues of the body; Microscope, Cell, Epithelium, Connective Tissue, Cartilage, Bone, Muscular tissue, Nerve Tissue – TS & LS, Circulatory system – large sized artery, medium sized artery, large sized vein, lymphoid tissue, Skin and its appendages
b) Anatomical positions of body, axes, planes, common anatomical terminologies
c) Connective tissue classification.
d) Bones- Composition & functions, classification and types according to morphology and development
e) Joints-definition-classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints

2] Embryology

a) Ovum, Spermatozoa, fertilization and formation of the 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, brain vessels and spinal cord,
d) Development of brain and brain stem structures

3] MUSCULO SKELETAL Anatomy [dissection / prosection mandatory]

i) Superior extremity with

a. Osteology : Clavicles, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges.
b. Soft parts: Breast, pectoral region, axilla, front of arm, back of arm, cubital fossa, front of fore arm, back of fore arm, palm, dorsum of hand, muscles, nerves, blood vessels and lymphatic drainage of upper extremity.
c. Joints : Shoulder girdle, shoulder joint, elbow joints, radio ulnar joint, wrist joint and joints of the hand. d. Arches of hand, skin of the palm and dorsum of hand.

ii) Inferior extremity with

a. Osteology : Hip bone, femur, tibia, fibula, patella, tarsals, metartarsals and phalanges.
b. Soft parts: Gluteal region, front and back of the thigh (Femoral triangle, femoral canal and inguinal canal), medial side of the thigh (Adductor canal), lateral side of the thigh, popliteal fossa, anterior and posterior compartment of leg, sole of the foot, lymphatic drainage of lower limb, venous drainage of the lower limb, arterial supply of the lower limb, arches of foot, skin of foot.
c. Joints: Hip Joint, Knee joint, Ankle joint, joints of the foot.

iii) **Spine, head & neck**:

a. Osteology : Mandible and bones of the skull.
b. Soft parts : Muscles of the face and neck and their nerve and blood supply-extra ocular muscles, triangles of the neck.
c. Gross anatomy of eyeball, nose, ears and tongue

iv) Facial muscles & T.M. joint
v) Surface Anatomy of all the topics

TEXT BOOKS

1. Human Anatomy – by Snell
2. Anatomy by Chaurasia all 3 volumes
3. Neuro anatomy by Inderbir Singh
4. Human Anatomy by Kadasne (All three volumes)

REFERENCE BOOKS

1. Gray's Anatomy
2. Extremities by Quining Wasb
3. Atlas of Histology by Mariano De Fiore
4. Anatomy & Physiology by Smout and McDowell
5. Kinesiology by Katherine Wells
6. Neuroanatomy by Snell
7. Neuroanatomy by Vishram Singh

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PRACTICAL ANATOMY-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT – 151

PRACTICAL

Learning of surface landmarks with special emphasis on bones, joints, muscles, and nerves.

The learning of anatomy is by demonstration only through dissected parts, slides, models, charts, etc.

Demonstration of dissected parts (upper extremity and lower extremity)

Demonstration of skeleton articulated and disarticulated.

Histology-Elementary tissue including surface Anatomy

Identification of body prominences on inspection and by palpation especially of extremities.

Points of palpation of nerves and arteries.

Demonstration of movements in important joints.

Embryology-models, charts & X-rays

During the training more emphasis will be given on the study of bones, muscles, joints, nerve supply of the limbs.

PRACTICAL EXAMINATION

Students will assessed by viva only based upon learning in theory, demonstration of bones, and joints, muscles, nerves and major viscera.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIRST SEMESTER

PHYSIOLOGY-I

Course Code: BPT – 102

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Objectives- At the end of the course, the candidate will-

1] Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis]
2] Be able to describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory ,Female uro-genital function, & alterations in function with aging
3] Analyse physiological responses & adaptation to environmental stresses-with special emphasis on physical activity, temperature
4] Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, Cardiovascular & Respiratory system, & Exercise tolerance / Ergography.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc

SYLLABUS

1] GENERAL Physiology— Cell: Morphology. Organelles: their structure and functions • Transport Mechanisms across the cell membrane • Body fluids: Distribution, composition. Tissue fluid – formation— [only short notes]
2] BLOOD Introduction: Composition and functions of blood. • Plasma: Composition, formation, functions. Plasma proteins. • RBC: count and its variations. Erythropoiesis- stages, factors regulating. Reticulo-endothelial system (in brief) Haemoglobin - Anemia (in detail), types of Jaundice. Blood indices, PCV, ESR. • WBC: Classification. Morphology, functions, count, its variation of each. Immunity • Platelets: Morphology, functions, count, its variations • Hemostatic mechanisms: Blood coagulation–factors, mechanisms. Their disorders. Anticoagulants. • Blood Groups: Landsteiner's law. Types, significance, determination, Erythroblastosis foetalis. • Blood Transfusion: Cross matching. Indications and complications.
3] NERVE: - Structure and function of neurons. Classification, properties and impulse transmission of nerve fibers.Nerve injury-degeneration and regeneration
ii) Neuroglia:-types and functions. iii) RMP.Action Potential (ioinic basis and properties)

4] MUSCLE
i] Skeletal muscle:-Structure - Properties – Classification – Excitation / Contraction Coupling
ii] Motor Unit - E.M.G. - Factors Affecting Muscle Transmission –
iii] Neuro-Muscular junction:-structure& Transmission
5] C.N.S:- organization of CNS &PNS.function of nervous system
i] Receptor Physiology-Classification & Properties;
ii] Synapse-Structure, Properties, & Transmission;
iii] Reflexes –Classification & Properties;

iv] Sensory & Motor Tracts-Effect of Transection [-Complete & Incomplete] at Various Levels;
v] Physiology of Touch, Pain, Temperature & Proprioception;
vi] Physiology of Muscle Tone [Muscle Spindle];
vii] Posture and equilibrium.
viii] Function of Basal Ganglia, Thalamus, Hypo-Thalamus, Pre-frontal lobe, P.A.S.,
ix] Sensory /Motor Cortex;
x] Limbic System;
xi] Learning, Memory & Condition Reflex,
xii] Physiology of Voluntary Movement

6] EXCRETARY System

i] Introduction:- physiological anatomy of kidney.nephrons-cortical and juxta medullary.JGA.Glomerular membrane. Function of kidney.
ii] Urine Formation:-glomerular filtration (mechanism ,normal value and factors affecting),tubular reabsorption-reabsorption of sodium,glucose,bicarbonate,urea and water. Tubular secretion-secretion of potassium and hydrogen.
iii] Mechanism of concentrating and diluting the urine.
iv] Micturition –Neural Control-Neurogenic Bladder

7] Digestive System

Brief Outline of Human G.I.T. and Associate Glands with its function.

Mechanism of defaecation

Text Books

1. Course in Medical Physiology—Vol-I & II-by Dr Chaudhary
2. Medical Physiology by Dr. Bijlani
3. Text book on Medical Physiology-By Gyton

Reference Books

1. Review of Medical Physiology-Gayton
2. Samson & Writes Applied Physiology

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PRACTICAL PHYSIOLOGY-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT – 152

PRACTICAL

1. Haematology-[Demonstration only[TRBC, TWBC, ABO Blood Group, ESR, HB%, CT, BT]
2. History taking of Nervous system, reflex test, sensory and motor examination, cerebellum

examination

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIRST SEMESTER

PSYSIOLOGY & SOCIOLOGY

Curricular Hours: 160
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 103

Course Objectives:

This course will enable the student to understand specific psychological factors and effects in physical illness and this will help them to have a holistic approach in their dealings with patients during admission, treatment, rehabilitation and discharge.

Note: This course is to be taught by two teachers (Psychologist & Sociologist / Medical Sociologist). Each part carries equal weightage. External Question Paper for each part shall be set by two relevant subject paper setters The examinees shall use different answer books for the two different parts. And, relevant subject teachers shall evaluate these.

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions (1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SECTION – A

PSYCHOLOGY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1. What is psychology? Fields of application of psychology, influence of heredity and environment on the individual
2. Motivation - theories and types of Motivation
3. Emotions - theories of Emotions and stress
4. Personality, theories of personality, factors influencing personality
5. Development and growth of behavior in infancy and childhood, adolescence, adulthood and old age
6. Behavior - normal and abnormal
7. Counseling - Definition, Aims and principles
8. Psychotherapy – brief introduction to paradigms in psychopathology and therapy
9. Psychological need of children and geriatric patients
10. Communication – effective and faulty
11. Personality Disorder
12. Severe psychological disorders – Mood disorders, psychosis

SECTION – B

SOCIOLOGY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Introduction

1. Meaning-Definition and scope of Sociology
2. Its relation with Anthropology, Psychology, Social Psychology and ethics.
3. Methods of Sociology-case study, Social Survey, Questionnaire, and interview and opinion poll methods.
4. Importance of its study with special reference to health care professionals.

Social Factors in Health and Disease:

5. The meaning of Social Factors. 2. The role of Social factors and illness.

Social Groups:

6. Concepts of social groups.
7. Influence of formal and informal groups on health and sickness.
8. The roll of primary groups and secondary groups in the hospital and rehabilitation settings.

Family:

9. The family - Meaning and definition, Functions
10. Changing family Patterns
11. Influence of family on the individual health, family, and nutrition.
12. The effects of sickness on family and psychosomatic disease and their importance to Physiotherapy

Community:

13. Rural community – Meaning and features – Health hazards of rural population 2. Urban community – Meaning and features – Health hazards of urban population

Culture and Health:

14. Concept of culture
15. Cultures and Behaviour
16. Cultural meaning of sickness
17. Culture and health disorders

Social change:

18. Meaning of social changes & Factors of social change. 2. Social change and health Program.
19. The role of social planning in the improvement of health and in rehabilitation.

J- Social security: Social security and social legislation in relation to the Disabled. K- Social worker: Meaning of social work; the role of a medical social worker.

Suggested Readings:

S. No.	Author	Title	Publisher	Year	Vol.
1	Morgon, Clifford T	Introduction to Psychology	Tata Mcg. Hill, Delhi	1999	
2	Farnald, L.D.	Introduction to Psychology	AITBS, Delhi	1999	
3	Korchin, Sheldon J.	Modern Clinical Psychology: Principals	CBS, New Delhi	1999	

4	McDavid, J.W. and Harari, H.	Social psychology: Individuals, Groups, Societies	CBS, New Delhi	1999	
5	Davison, G.C. and Neale, J.M.	Abnormal Psychology	Jhon Wiley, New York	1997	
6	Mehta, Manju	Behavioral Sciences in Medical Practice	Jaypee, New Delhi	1998	
7	Bhusan, Vidya and Sachdeva, D.R.	Introduction to Sociology	Kitab Mahal, New Delhi	1999	
8	Turner, J. H.	Structure of Sociological Theory	Jaipur Publication	1995	
9	Anand Kumar	Indian Society and Culture	Vivek, New Delhi	2000	

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIRST SEMESTER

BIOCHEMISTRY

Curricular Hours: 40
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 104

Objectives- at the end of the course, the candidate will –

1] be able to describe structures & functions of cell in brief.
2] be able to describe normal functions of different components of food, Enzymes,
3] define Basal metabolic rate & factors affecting the same [in brief], with special reference to obesity
4] be able to discuss nutritional aspects of carbohydrates, lipids, proteins & vitamins & their metabolism with special reference to obesity
5] define enzymes; discuss in brief, factors affecting enzyme activity
6] Describe in details biochemical aspects of muscle contraction
7] acquire knowledge in brief about the Clinical biochemistry, with special reference to Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbo-Hydrates, proteins, bone minerals, & electrolyte balance

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc

SYLLABUS

1] Cell biology
   i] Membrane, structure & function;
2] Carbohydrates
   i] Chemistry-definition, classification with examples;
   ii] functions of carbohydrates with muccopolysaccarhides [in details];
   Metabolism-Digestion & absorption of carbohydrates -Glycolysis, Energetics & regulation;
   iii] Kreb‘s cycle-its energetics & regulation- role of T.C.A. cycl
   iv] significance of H.M.P. shunt
   v] hormonal regulation of blood sugar levels-Important metabolic disorders of glycogen, lactose intolerance,Diabetes mellitus.
3] Proteins
   i] Chemistry-definition-function-classification of -protein structure-effect of temperature on proteins-denaturation-coagulation; isoelectric pH & its importance;
   ii] Metabolism-Digestion & absorption-Detoxification of ammonia including urea cycle.

4] Lipids
   i] Chemistry-definition-classification-[including fatty acids with examples]-function -
   ii] Metabolism-Digestion & absorption of lipids-B-oxidation-of saturated fatty acids & its energetic -Ketone bodies formation & utilization—cholesterol & its importance[no biosynthesis needed]-classification, sources & function of lipoproteins-lipoproteinemia atherosclerosis
5] Nuclic Acids
   i) DNA/RNA difference,structure and function of DNA. function of trna,mrna, rrna
6] Enzymes
   i] definition-Co-Enzymes-classification-factors affecting;
   ii] Inhibition & types of inhibitors;
   iii] Iso-enzymes
   iv] clinical & therapeutic use of enzymes
7] Vitamins
   i] water & Fat soluble-definition-classification;
   ii] Individual vitamins-sources & function.
   iii] RDA, deficiency & toxicity
8] Minerals
   i] Phosphate, calcium, & iron [in details];
   ii] magnesium, flouride, Zink, Copper Iodine-sources, RDA, absorption,-transport-excretion function & disorder
9] Nutrition
   i] Importance of nutrition-Calorimetry-energy value-calorimeter-respiratory quotient & its significance;
   ii] Basal metabolic rate-definition-normal values-factors affecting BMR;
   iii] energy requirement-with-age/sex/ thermogenesis/-specific dynamic action of food,- energy expenditure for various activities
   iv] Composition of food, balanced Diet dietary recommendations nutritional supplementation-nutritional value of carbohydrates/proteins/fats & Fibers,
   v] Nitrogen balance & its significance-Protein energy malnutrition-Kwashiorkor & Marasmus
10] Clinical Biochemistry
   i] Liver function test & Renal function test;

Text Books-

1] Biochemistry-by Dr. Deb Jyoti Das,
2] Biochemistry-by-Dr Satyanarayan
3] Text book of Biochemistry for Medical students by-Dr Vasudevan/ Shri kumar

Reference Books-

1] Review of Biochemistry [24th edition] by Harpar

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SYLLABUS

OF

BPT SECOND SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SECOND SEMESTER

ANATOMY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 201

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

1] In NEURO – Anatomy (Objective)

i] To identify & describe various parts of C.N.S. – fore – brain, Midbrain, Hind-brain Brain stem, courses of cranial nerves; functional components, course distribution. Anatomical bases of clinical lesions:

ii] To describe the source & course of spinal tracts;

iii] To describe blood circulation of C.N.S. & spine;

iv] Be able to identify the components of various Trans – sections.

NEURO –Anatomy (Syllabus)

a. Organization of Central Nervous system - Spinal nerves and autonomic nervous system mainly pertaining to cardiovascular, respiratory and urogenital system
b. Cranial nerves
c. Peripheral nervous system a. Peripheral nerve b. Neuromuscular junction c. Sensory end organs
d. Central Nervous System a. Spinal segments and areas b. Brain Stem c. Cerebellum d. Inferior colliculi e. Superior Colliculi f. Thalamus g. Hypothalamus h. Corpus striatum i. Cerebral hemisphere j. Lateral ventricles k. Blood supply to brain l. Basal Ganglia m. The pyramidal system n. Pons, medulla, extra pyramidal systems o. Anatomical integration

2] THORAX

a. Cardio – Vascular System
   Mediastinum: Divisions and contents
   Pericardium: Thoracic Wall: position, shape and parts of the heart; conducting System; blood Supply and nerve supply of the heart; names of the blood vessels and their distribution in the body – region wise.
b. Respiratory system Outline of respiratory passages Pleura and lungs: position, parts, relations, blood supply and nerve supply; Lungs – emphasize on bronchopulmonary segments Diaphragm: Origin, insertion, nerve supply and action, openings in the diaphragm. Intercostal muscles and Accessory muscles of respiration: Origin, insertion, nerve supply and action..

3] SYSTEMIC ANATOMY –

Abdomen:

a) Peritoneum: Parietal peritoneum, visceral peritoneum, folds of peritoneum, functions of peritoneum.
b) Large blood vessels of the gut
c) Location, size, shape, features, blood supply, nerve supply and functions of the following: stomach, liver, spleen, pancreas, kidney, urinary bladder, intestines, gall bladder. Pelvis:
d) Position, shape, size, features, blood supply and nerve supply of the male and female reproductive system.

Endocrine glands:

a) g) Position, shape, size, function, blood supply and nerve supply of the following glands : Hypothalamus and pituitary gland, thyroid glands, parathyroid glands, Adrenal glands, pancreatic islets, thymus.

Trunk & Pelvis:

a) Osteology: Cervical, thoracic, lumbar, sacral and coccygeal vertebrae and ribs
b) Soft tissue: Pre and Para vertebral muscles, intercostals muscles, anterior abdominal wall muscles, Inter-vertebral disc.
c) Pelvic girdle and muscles of the pelvic floor

TEXT BOOKS

1. Human Anatomy – by Snell
2. Anatomy by Chaurasia all 3 volumes
3. Neuro anatomy by Inderbir Singh
4. Human Anatomy by Kadasne (All three volumes)

REFERENCE BOOKS

1. Gray's Anatomy
2. Extremities by Quining Wasb
3. Atlas of Histology by Mariano De Fiore
4. Anatomy & Physiology by Smout and McDowell
5. Kinesiology by Katherine Wells
6. Neuroanatomy by Snell
7. Neuroanatomy by Vishram Singh

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PRACTICAL ANATOMY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT – 251

PRACTICAL

Learning of surface landmarks with special emphasis on bones, joints, muscles, and nerves.

The learning of anatomy is by demonstration only through dissected parts, slides, models, charts, etc.

Demonstration of dissected parts (thoracic& abdominal viscera, face and brain)

Demonstration of skeleton articulated and disarticulated.

Surface making of the lung, pleura, fissures and lobes of lungs, heart, liver, spleen, • Kidney, cranial nerves, spinal nerves and important blood vesselss.

Head & Spinal cord and Neck and Brain including surface Anatomy

Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver

Thorax including surface anatomy, abdominal muscles joints

PRACTICAL EXAMINATION

Students will by viva only based upon learning in theory, demonstration of bones, and joints, muscles, nerves and major viscera.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SECOND SEMESTER

PHYSIOLOGY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 202

Objectives- At the end of the course, the candidate will-

1] -acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis]

2] -be able to describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory ,Female uro-genital function, & alterations in function with aging

3] -Analyse physiological responses & adaptation to environmental stresses-with special emphasis on physical activity, temperature

4] -acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, Cardiovascular & Respiratory system, & Exercise tolerance / Ergography.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

SYLLABUS

1] TEMPERATURE REGULATION:Skin and temperature regulation.

2] ENDOCRINE

- Introduction: Major endocrine glands. Hormone: classification, mechanism of action. Functions of hormones
- Pituitary Gland: Anterior Pituitary and Posterior Pituitary hormones: Secretory cells, action on target cells, regulation of secretion of each hormone. Disorders: Gigantism, Acromegaly, Dwarfism, Diabetes insipidus. Physiology of growth and development: hormonal and other influences. Pituitary-Hypothalamic Relationship.
- Thyroid Gland:Thyroid hormone and calcitonin: secretory cells, synthesis, storage, action and regulation of secretion. Disorders: Myxoedema, Cretinism, Grave's disease.
- Parathyroid hormnes: secretory cell, action, regulation of secretion. Disorders: Hypoparathyroidism. Hyperthyroidism.Calcium metabolism and its regulationAdrenal Gland: Adrenal Cortex: Secretory cells, synthesis, action, regulation of secretion of Aldosterone, Cortisol, Androgens. Disorders: Addison's disease, Cushing's syndrome, Conn's syndrome,

Adrenogenital syndrome. Adrenal Medulla: Secretory cells, action, regulation of secretion of adrenaline and noradrenaline. Disorders: Phoechromocytoma.

- Endocrine Pancreas:Secretory cells, action, regulation of secretion of insulin and glucagon. Glucose metabolism and its regulation. Disorder: Diabetes mellitus.

3] REPRODUCTIVE system

- Male Reproductive System: Functions of testes. Pubertal changes in males. Spermatogenesis. Testosterone: action. Regulation of secretion. Semen.
- Female Reproductive System: Functions of ovaries and uterus. Pubertal changes in females. Oogenesis. Hormones:oestrogen and progesterone-action. regulation of secretion. Mentrual Cycle: Phases. Ovarian cycle. Uterine cycle. Hormonal basis. Menarche. Menopause. Contraception methods.

4] SPECIAL senses

- Vision: Introduction: Functional anatomy of eye ball. Functions of cornea, iris, pupil, aqueous humor – glaucoma, lens – cataract, vitreous humor, rods and cones. Photopic vision. Scotopic vision.
- Visual Pathway and the effects of lesions.
- Refractive Errors: myopia, hypermetropia, presbyopia and astigmatism. • Visual Reflexes: Accommodation, Pupillary and Light. Visual acuity and Visual field. Light adaptation. Dark adaptation.Color vision – color blindness. Nyctalopia.
- Audition: Physiological anatomy of the ear. Functions of external ear, middle ear and inner ear. Structure of Cochlea and organ of corti. Auditory pathway. Types of Deafness. Tests for hearing. Audiometry.

5] RESPIRATORY system

- Introduction: Physiological anatomy – Pleura, tracheo-bronchial tree, alveolus, respiratory membrane and their nerve supply. Functions of respiratory system. Respiratory muscles.
- Mechanics of breathing: Intrapleural and Intrapulmonary pressure changes during respiration. Chest expansion. Lung compliance: Normal value, pressure-volume curve, factors affecting compliance and its variations. Surfactant – Composition, production, functions. RDS
- Spirometry: Lung volumes and capacities. Timed vital capacity and its clinical significance. Maximum ventilation volume. Respiratory minute volume.
- Dead Space: Types and their definition.
- Pulmonary Circulation. Ventilation-perfusion ratio and its importance.
- Transport of respiratory gases: Diffusion across the respiratory membrane. Oxygen transport – Different forms, oxygen-haemoglobin dissociation curve. Factors affecting it. P50, Haldane and Bohr effect. Carbon dioxide transport: Different forms, chloride shift.
- Regulation of Respirtation: Neural Regulation. Hering-breuer's reflex. Voluntary control. Chemical Regulation.
- Hypoxia: Effects of hypoxia. Types of hypoxia. Hyperbaric oxygen therapy. Acclimatization Hypercapnoea. Asphyxia. Cyanosis – types and features. Dysbarism
- Disorders of Respiration: Dyspnoea. Orthopnoea. Hyperpnoea, hyperventilation, apnoea, tachypnoea. periodic breathing – types
- •Artificial respiration
- Respiratory changes during exercise.

6] CARDIO_VASCULAR

- Introduction: Physiological anatomy and nerve supply of the heart and blood vessels. Organisation of CVS. Cardiac muscles: Structure. Ionic basis of action potential and pacemaker potential. Properties.
- Conducting system: Components. Impulse conduction Cardiac Cycle: Definition. Phases of cardiac cycle. Pressure and volume curves. Heart sounds – causes, character. ECG: Definition. Different types of leads. Waves and their causes. P-R interval. Heart block.
- Cardiac Output: Definition. Normal value. Determinants. Stroke volume and its regulation. Heart rate and its regulation. Their variations
- Arterial Blood Pressure: Definition. Normal values and its variations. Determinants. Peripheral resistance. Regulation of BP.
- Arterial pulse.
- Shock – Definition. Classification–causes and features
- Regional Circulation: Coronary, Cerebral and Cutaneous circulation.
- Cardiovascular changes during exercise.

7] EXERCISE physiology

i] Effects of acute & chronic exercises-;
ii] oxygen /CO2 transport-O2 debt
iii] effects of exercise on muscle strength, power, endurance, B.M.R., R.Q., - hormonal & metabolic effects-respiratory & cardiac conditioning
iv] Aging
v] Training-fatigue-& recovery;
vi] Fitness-related to age, gender, & body type

8] A.N.S

Sympathetic /parasympathetic system-adrenal medulla- functions- Neuro Transmitters- role in the function of pelvic floor-[micturation, defecation labour

Text Books

1. Course in Medical Physiology—Vol-I & II-by Dr Chaudhary
2. Medical Physiology by Dr. Bijlani
3. Text book on Medical Physiology-By Gyton

Reference Books

1. Review of medical physiology-Gavton
2. Samson & Writes Applied physiology

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PRACTICAL PHYSIOLOGY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT – 252

PRACTICAL

1] Examination of CVS

- Blood Pressure – effects of change in posture & exercise
- Examination of Radial pulse.
- Stethography-

2] Examination of Respiratory system

- Spirometry-
- voluntary hyperventilation-
- Breath Holding
- Mercury Column Test
- Lung volumes
- timed vital capacity

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SECOND SEMESTER

FUNDAMENTALS OF BIOMECHANICS & EXERCISE THERAPY

Course Code: BPT – 203

Curricular Hours: 120
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Objectives:

This course will enable the student to understand the basic principles of biomechanics & exercise therapy, basic principles and application of soft tissue manipulation

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

All topics are for a brief description only

1. Mechanics - Definition of mechanics and Biomechanics
2. Force - Definition, diagrammatic representation, classification of forces, concurrent, coplanar and co linear forces, composition and resolution of forces, angle of pulls of muscle
3. Momentum - principles, and practical application
4. Friction
5. Gravity - Definition, line of gravity, Centre of gravity
6. Equilibrium - Supporting base, types, and equilibrium in static and dynamic state
7. Levers - Definition, function, classification and application of levers in physiotherapy & order of levers with example of lever in human body
8. Pulleys - system of pulleys, types and application
9. Elasticity - Definition, stress, strain, HOOKE'S Law
10. Springs - properties of springs, springs in series and parallel, elastic materials in use
11. Aims and scope of various biomechanical modalities – shoulder wheel, shoulder ladder, shoulder pulleys, pronator-supinator instrument, static cycle, rowing machine, ankle exerciser, balancing board, springs, weights
12. Normal Posture - definition & description, static and dynamic, alignments of various joints, centre of gravity, planes & muscular moments, and Analysis of posture
13. Movements - Anatomical definition and description.
14. Traction - Rationale, Technique, indications & contra-indications

15. Normal Gait - definition & description, alignments, centre of gravity during gait cycle, planes & muscle acting mechanisms, pattern, characteristics Normal gait cycle, time & distance parameters, & determinants of Gait
16. Starting positions - Description and muscle work, Importance of fundamental and derived types, Effects and uses of individual positions
17. Soft tissue manipulation - History, definition, types and their rationale, general effects, local effects of individual manipulation (physiological effects) and uses, contra-indications and techniques of application

Suggested Readings:

S.No.	Author	Title	Publisher	Year	Vol.
1	Hollis, M. And Cook, P.F.	Practical Exercise Therapy	CBS, New Delhi	1999	
2	Gardiner, Dena	Principles of Exercise Therapy	CBS, New Delhi	1999	
3	Lippert, Lynn	Clinical Kinesiology for Physical Therapy	Jaypee New Delhi	1996	
4	Pagliarulo, M.A.	Introduction to Physical Therapy	Mosby, London	2001	
5	Jones,	Human Movement Explained	Butterworth Heine	2000	

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FUNDAMENTALS OF BIOMECHANICS & EXERCISE THERAPY

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT –253

PRACTICAL

Demonstration of Biomechanical principles

Study of structure, function and application of various Biomechanical modalities - shoulder wheel, shoulder ladder, shoulder pulleys, pronator-supinator instrument, static cycle, rowing machine, ankle exerciser, balancing board, springs, weights, etc.

Study of structure, function and application of suspensions,

Demonstration and practice of

- soft tissue manipulative techniques
- normal gait and posture
- starting and derived positions
- spinal mechanical traction

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory, demonstrations of various biomechanical modalities, suspensions, and manipulative techniques learned.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SECOND SEMESTER

PRINCIPLES OF BIO-ELECTRICAL MODALITIES

Course Code: BPT – 204

Curricular Hours: 120
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Objectives:

This course will enable the student to understand the basic electricity, electronics, equipments and their application in Electrotherapy.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Fundamentals of Electricity & Magnetism

1. DC Currents -Modern concept of electricity: fundamental electric charges (proton and electron), bound and free electrons, free electrons and current, static electric charge, charging of an object potential and capacitance, potential difference and EMF
2. A. C. currents: Sinusoidal &diadynamic current.
3. Quantity of electricity, magnitude of current, conductors and insulators, resistance of conductor and Ohm's law, resistances in series and parallel
4. Capacitors: Electric field around a capacitor, charging and discharging a capacitor, types of capacitor with application of each in Physiotherapy department
5. Rheostat: series and shunt Rheostat with application of each in the Physiotherapy department
6. Effects of electric Current: Thermal effect, chemical effect (ionization) and magnetic effect. Electric shock, Earth shock, causes and its prevention
7. Magnetism: Magnetic - non-magnetic substances and their properties, properties of magnet, molecular theory, poles of magnet and its properties, magnetic lines of force and their properties, Electromagnetism, magnetic effects of electric current, Electromagnetic induction, Lenz's law, Inductor and Inductance types of inductor, reactance and impedance.
8. Thermionic Valves: Thermionic emission, Diode and Triode valves and their characteristics, Construction and application of Cathode Ray Oscilloscope

9. Semiconductor Devices: Intrinsic and extrinsic semiconductors, advantages of diode and transistors devices. Basing of Diode and their characteristics, Light Emitting Diodes, integrated circuits
10. Electronic Circuits: Rectifiers & smoothing circuits, Oscillators - Sinusoidal and nonsinusoidal types
11. A.C. AND D.C. meters: Functions and applications of Ammeter and volt meters, Ohmmeters, Wheat stone bridge
12. Introduction to Therapeutic Energies – Thermal, Mechanical, Electrical, Electromagnetic and magnetic - Definition, description, physiological effects, pathological effects and dangers
13. Medical Instrumentation For Physical Therapy: Brief description of generation, circuit diagrams and testing
14. Low frequency currents, Direct currents, Medium frequency currents 8. Short wave Diathermy-continuous and pulsed
15. Microwave Diathermy
16. Ultrasound
17. Actino-therapy - Infrared, UVR and Lasers

Note: emphasis is given only to generation circuit diagram and testing of the various electrotherapy apparatus.

Suggested Readings:

S.No.	Author	Title	Publisher	Year	Vol
1	Froster, A. and Palastanga, N.	Clayton's Electrotherapy: Theory and Practice	AITBS, Delhi	1999	
2	Jhon, Low and Ann, Reed	Electrotherapy Explained: Principles	Butterworth Heine, Oxford	2000	
3	Nelson, R.M. and Currier, D.P.	Clinical Electrotherapy	Appleton and Lange	1987	
4	Chemeron, M.H.	Physical Agents in Rehabilitation	W B Saunders, London	1999	
5	Michlovitz, S L	Thermal Agents in Rehabilitation	F A Davis, Philadelphia	1996	

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PRINCIPLES OF BIOELECTRICAL MODALITIES PRACTICAL

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course Code: BPT – 254

PRACTICAL

Demonstration of Bioelectrical principles

Demonstration of electrotherapy instruments, principles of their functioning, usage, and safety implications for human beings

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory and demonstration of various components of the equipments.

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SYLLABUS

OF

BPT THIRD SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

THIRD SEMESTER

PATHOLOGY & MICROBIOLOGY

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 301

Objectives-At the end of the course, the candidates will be able to-

1] -Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs; capacity of the body in healing process

2] -Recall the Etio-pathogenesis, the pathological effects & the clinico-pathological correlation of common infections & non-infectious diseases

3] -Acquire the knowledge of concepts of neoplasia with reference to the Etiology, gross & microscopic features, diagnosis, & prognosis in different tissues, & organs of the body

4] -Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance [with special emphasis to neuro-musculo-skeletal & cardio-respiratory systems]

5] -Acquire knowledge of common immunological disorders & their resultant effects on the human body.

6] -Understand in brief, about the Haematological diseases & investigations necessary to diagnose them & determine their prognosis

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions(1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SYLLABUS

(PATHOLOGY- SECTION A)

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1] - a]-General Pathology-Cell injury-causes, mechanism & toxic injuries with special reference to Physical, Chemical, & ionizing radiation

b]-Reversible injury [degeneration]-types-morphology,- swelling, hyaline, fatty changes,

c]-Intra- cellular accumulation-hyaline mucin,

d]-Irreversible cell injury-types of necrosis- apoptosis –calcification -dystrophic & metastasis,

e]-Extra-cellular accumulation- amylidosis, calcification-Pathogenesis-morphology

2] -Inflammation & Repair:-

a]-Acute inflammation-features, causes, vascular & cellular events,

b]-Morphologic variations,

c]-Inflammatory cells & mediators,

d]-Chronic inflammation:-causes, types, non-specific & granulomatous - with examples

e]-wound healing by primary & secondary union factors promoting & delaying healing process.

f]-Healing at various sites-including-bones, nerve, & muscle

g]-Regeneration & repair

3] -Immuno-pathology-[basic concepts]-

a]-Immune system:- organisation-cells- antibodies- regulation of immune responses,

b]-Hyper-sensitivity,

c]-Secondary immuno-deficiency including HIV, d]-Organ transplantation

4]-Circulatory disturbancesa]-

a]-Edema-pathogenesis-types-translates/exudate,

b]-Chronic venous congestion-lung, lever, spleen,

c]-Thrombosis-formation-fate- effects,

d]-Embolism-types-clinical effects,

e]-Infarction-types-common sites

f]-Gangrenes-types-actiopathogenesis

g]-Shock-pathogenesis, types, morphologic ch

5] -Growth Disturbances

a]-Atrophy-malformation, agenesis, dysplasia,

b]-Neoplasia calcification, histogenesis, biologic behaviour, difference between benign & malignant tumour

c]-Malignant neoplasms -grades-stages-local & distal spread,

d]-Carcinogenesis-environmental carcinogens

e]Chemical, Occupational, heredity, vira ,

f]-precancerous lesions & Ca in situ

g]-Tumor & host interactions-systemic effects-metastatic or direct spread of tumors affecting

bones, spinal cord,leading to paraplegia

6] -Specific Pathology:-

A] -CVS

a]- Atherosclerosis- Ischimic heart diseases-myocardial infarction-Pathogenesis/ Pathology

b] -Hypertension

c] -C.C.F.

d] -Rh H.D.

e] -Peripheralvascular diseases

B] -Respiratorya]- COPD,

b] -Pneumonia[lobar, broncho ,viral],

c] -T.B.-primary, secondary-morphologic types,

d] - pleuritis, complications,

e] -Lung collapse- atelectasis

C] -Neuropathology

a]-Reaction of nervous tissue to injury-infection & ischaemia b]-Pyogenic meningitis, TBM, Viral,

c]-Cerebro-vascular diseases-atherosclerosis-Thrombosis, embolism, aneurysm, hypoxia, infarction & hemorrhage

d]-effects of Hypotension on CNS.

e]-Coma

f]-Polio myelitis- Leprosy-Demyelinating diseases -Parkinsonism-Cerebral palsymetachromatic eucodystrophy-Dementia-Hemiplegia /paraplegia-Pathogenesis & pathology of Wilson‘s disease

g]-SOL-[in brief] h]-peripheral nerve injury

7] -Muscle diseases-Muscular dystrophy-hypertrophy-Psudo-hypertrophy-atrophy-Poliomyelitis Myositis ossificance, necrosis, regeneration-Myotonia

8] -Neuro –muscular junction-Myasthenia gravis-Myasthenic syndrome

9] -Bone & Joints

a]- fracture healing –Osteomyelitis -rickets-Osteomalacia-Bone tumors-Osteoporosis

b]-Spondylosis, P.I.D.-Scoliosis –Haemarthrosis -Gout-T.B.

c]-Arthritis- degenerative-inflammatory-RA-Ankylosing spondylitis-Tenosynovitis

10] -G.I. system-[1hr]-Gastric/duodenal ulcer, enteric fever, TB, enteritis, Gastritis [related to consumption of NSAID

11] -Endocrine-Hyperthyroidism-Diabetes

12] -Hepatic diseases[1 hr]-Cirrhosis-emphasis to systemic effects of portal hypertension

13] -Skin-Melanin pigment disorders- Vitiligo- Tenia versicolor-Psoriasis-Bacterial/fungal infections-cutaneous TB,-Scleroderma, SLE, Leprosy Alopacia

14] -Clinical pathology-[including Demonstrations]

a] -Anaemia-[deficiency]-T.C./D.C. / Eosinophilia, E.S.R., C.P.K, b]-Muscle/skin/nerve biopsy

c]-Microscopic appearance of muscle necrosis-fatty infiltration d]-Lab investigation in liver & renal failure

Text Books

1] Text book of Pathology-by Harsh Mohan
2] Pathologic basis of desease by Cotran, Kumar,Robbins 3]-General Pathology –by Bhende

MICROBIOLOGY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objectives-At the end of the course, the candidates will have sound knowledge of the agents responsible for causing human infections, pertaining to C.N.S., C.V.S., musculo-skeletal, & Respiratory system

SYLLABUS

1] 1. General Microbiology

Definitions: infections, parasite, host, vector, fomite, contagious disease, infectious disease, epidemic, endemic, pandemic, Zoonosis, Epizootic, Attack rate. Normal flora of the human body.

Routes of infection and spread; endogenous and exogenous infections; source at reservoir of infections

Bacterial cell. Morphology limited to recognizing bacteria in clinical samples Shape, motility and arrangement. Structures, which are virulence, associated.

Physiology: Essentials of bacterial growth requirements.

Sterilization, disinfection and universal precautions in relation to patient care and disease prevention. Definition of asepsis, sterilization, disinfection.

Antimicrobials: Mode of action, interpretation of susceptibility tests, resistance spectrum of activity.

2. Immunology

Basic principles of immunity immunobiology : lymphoid organs and tissues. Antigen, Antibodies, antigen and antibody reactions with relevance to pathogenesis and serological diagnosis. Humoral immunity and its role in immunity Cell mediated immunity and its role in immunity. Imunology of hypersensitivity, Measuring immune functions.

3. Bacteriology

To be considered under the following headings Morphology, classification according to pathogenicity, mode of transmission, methods of prevention, collection and transport of samples for laboratory diagnosis, interpretation of laboratory reports

Staphylococci, Streptococci and Pneumococci, Mycobacteria: Tuberculosis, M.leprae, atypical mycobacteria, Enterobacteriaceae, Vibrois : V. cholerae and other medically important vibrios, Campylobacters and Helicobacters, Pseudomonas,

Bacillus anthracis, Sporing and non-sporing anaerobes: Clostridia, Bacteroides and Fusobacteria,

4. General Virology :- General properties: Basic structure and broad classification of viruses. Pathogenesis and pathology of viral infections. Immunity and prophylaxis of viral diseases. Principles of laboratory diagnosis of viral diseases. List of commonly used antiviral agents.

5. Mycology

General properties of fungi. Classification based on disease: superficial, subcutaneous, deep mycosel opportunistic infections including Mycotoxins, systemic mycoses. General principles of fungal diagnosis, Rapid diagnosis. Method of collection of samples. Antifungal agents.

6. Clinical/Applied Microbiology

Streptococcal infections: Rheumatic fever and Rheumatic heart disease, Meningitis. Tuberculosis, Pyrexia of unknown origin, leprosy, Sexually transmitted diseases, Poliomyelitis, Hepatitis, Acute-respiratory infections, Central nervous System infections, Urinary tract infections, Pelvic inflammatory disease, Wound infection, Opportunistic infections, HlV infection, Malaria, Filariasis, Zoonotic diseases.

1] Text book of Microbiology-by R. Ananthnarayan & C.K.Jayram Panikar.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

THIRD SEMESTER

PHARMACOLOGY

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 302

Objectives -At the end of the course the candidates will be able to –

1] -Describe Pharmacological effects of commonly used drugs by patients referred for Physio Therapy; list their adverse reactions, precautions to be taken & contra-indications, formulation & route of administration

2] -Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Physio therapy & vis-a-versa

3] -Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency, & safety for individual needs.

4] -get the awareness of other essential & commonly used drugs by patients-The bases for their use, & common as well as serious adverse reactions.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

SYLLABUS

TOPICS-

1. General Pharmacology

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

2. Autonomic Nervous system

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

3. Cardiovascular Pharmacology

Drugs Used in the Treatment of Heart Failure: Digitalis, Diuretics, Vasodilators, ACE inhibitors Antihypertensive Drugs: Diuretics, Beta Blockers, Calcium Channel Blockers, ACE Inhibitors, Central Acting Alpha Agonists, Peripheral Alpha Antagonists, Direct acting Vasodilators

Antiarrhythmic Drugs Drugs Used in the Tratment of Vascular Disease and Tissue Ischemia : Vascular Disease, Hemostasis Lipid-Lowering agents, Antithrombotics, Anticoagulants and Thrombolytics Ischemic Heart Disease – Nitrates, Beta-Blockers, Calcium Channel Blockers Cerebral Ischemia Peripheral Vscular Disease

4. Neuropharmacology

Sedative-Hypnotic Drugs: Barbiturates, Benzodiazepines Antianxiety Drugs: Benzodiazepines, Other Anxiolytics Drugs Used in Treatment of Mood Disorders: Monoamine Oxidase Inhibitors, Tricyclic Antidepressants, Atypical Antidepressants, Lithium Antipsychotic drugs

5. Disorders of Movement

Drugs used in Treatment of Parkinson's Disease Antiepileptic Drugs Spasticity and Skeletal Muscle Relaxants

6. Inflammatory/Immune Diseases

Non-narcotic Analgesics and Nonsteroidal Anti-Inflammatory Drugs: Acetaminophen, NSAIDs, Aspirin, Nonaspirin NSAIDs, drug Interactins with NSAIDs

Glucocorticoids: Pharmacological Uses of Glucocorticoids, adverse effects, Physiologic Use of Glucocorticoids Drugs Used in Treatment of Arthritic Diseases: Rheumatoid Arthritis, Osteoarthritis, Gout

Drugs Used in the Treatment of Neuromuscular Immune/Inflmmatory Diseases: Myasthena gravis, Idiopathic Inflammatory Myopathies, systemic lupus Erythmatosus, Scleroderma, Demyelinating Disease

Respiratory Pharmacology: Obstructive Airway Diseases, Drugs used in Treatment of Obstructive airway Diseases, Allergic Rhinitis

7]. Digestion and Metabolism

Gastrointestinal Pharmacology: Peptic Ulcer Disease, Constipation, Diarrhea Drugs Used in Treatment of Diabetes Mellitus: Insulin, Oral Hypoglycemics

8] -Chemo-therapy

i] -general principles -, ii]-anti Tuberculosis -, iii]-anti-leprosy -

9] -Other Chemo Therapeutic drugs

i] -Sulfa drugs in urinary tract infection, ii]-tetra/chloro, iii] penicillin, iv] cephalosporin,

v] - aminoglycides, vi]-Microlytic

10] -Endocrine:

i]-introduction, Thyroid & Antithyroid; ii]-Estrogen + Progesterone -, iii]- steroids + anabolic steroids -

11] -Dermatological — -Scabies-Psoriasis-Local antifungal

12] -Vaccines & Sera

13] -Vitamin –D, Calcium ;Phosphorus, Magnesium

Text Books-

1] -Pharmacology-by Gaddum

2] -Medical Pharmacology by Drill

3] -Pharmacology principle of Medical practice-by Krantx, & Carr

4] -Pharmacological basis of Therapeutics-by Goodman, L. S. Gilman A

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

THIRD SEMESTER

MEDICINE & PAEDIATRICS-I

Curricular Hours: 40
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 303

Objectives- At the end of the course, the candidate will

1] be able to describe etiology, patho-physiology, signs & symptoms, clinical evaluation & Management of the various Rheumatological [emphasis to musculoskeletal conditions], cardiovascular & respiratory conditions,
2] Acquire skill of clinical examination of Musculo-skeletal, Pulmonary & cardio-vascular system
3] be able to interpret of auscultation findings, with special emphasis to pulmonary system, interpretation of Chest Xray, blood gas analysis, P.F.T. findings, blood studies done for Neurological & Rheumatological conditions, & E.M.G.findings
4] be able to describe the principles of management at the Medical intensive care unit.

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions(1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SYLLABUS

CARDIO-VASCULAR/RESPIRATORY MEDICINE

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1] -Cardio-vascular diseases-Hypertension/I.H.D/Myocardial infarction/Arrhythmia/vascular diseases/pulmonary heart disease/rheumatic heart disease

2] -Diseases of the respiratory system- Infectious diseases of Upper airway & pulmonary system-Acute Restrictive & Obstructive conditions- COPD- Occupational lung diseases- /interstitial lung diseases/Asthma/T.B/Brucillosis-Occupational lung diseases

3] -Intensive Medical care- [Principles only]

4] -Geriatric medical conditions, with special emphasis to Osteoporosis, degenerative arthritis, Cardiovascular & respiratory problems.

General Medicine:- 1.Rhumatological Conditions

i) Rheumatoid Arthritis

ii) SLE

iii) SSA

iv) Gout

v) Polymyositis

2.geriatric conditions-

i) ageing process

ii) osteoporosis

iii) general health care,wellness clinic

iv) hypertension.

5. Poisoning : Clinical features – general management – common agents in poisoning – pharmaceutical agents – drugs of misuse – chemical pesticides – Envenomation

PAEDIATRICS

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objective- At the end of the course, the candidate will

1] -acquire knowledge in brief about intra-uterine development of the fetus

2] -be able to describe normal development & growth of a child, importance of immunization, & breast feeding, & psychological aspect of development

3] -be able to describe neuro muscular, musculo skeletal, & cardio- pulmonary conditions related to immunological conditions, nutritional deficiencies, infectious diseases, & genetically transmitted conditions.

4] -acquire skill of clinical examination of a neonate/child with respect to neurological, musculo skeletal, & respiratory function

5] GENETIC DISORDER;- down syndrome .trisomy 13 ,klinefelter syndrome,turner syndrome. Prevention of genetic disorder.therapy for genetic disorder

SYLLABUS

1] -normal intra-uterine development of foetus

2] -normal development & growth-common causes for Developmental disorders & brain damage, cerebral palsy, types - medical management

3] -Common infections of C.N.S-acute bacterial meningitis,tuberculous meningitis,encephalitis&encephalopathy,hydrocephalus .cerebral palsy, febrile convulsion & peripheral nervous system- ,

4] -Epilepsy-seizure,

5] -mental retardation

6] GENETIC DISORDER;- down syndrome .trisomy 13 ,klinefelter syndrome,turner syndrome. Prevention of genetic disorder.therapy for genetic disorder

CLINICAL -

Introduction of clinical examination –Breath sounds / X ray chest / Blood gas analysis /P.F.T.

Text Books –

1] -API-Text book of Medicine-5th ed.
2] -Golwalla-Medicine for students
3] -Principles & practice of Medicine-16th edn-by Devidson
4] -Essentials of Paediatrics - by O. P. Ghai - Inter Print publications
5] -D.K. series in Paediatrics

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

THIRD SEMESTER

GENERAL SURGERY

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 304

GENERAL SURGERY

Objective- At the end of the course, the candidate will be able to-

1] -describe the effects of surgical trauma & Anaesthesia in general

2] -classify, clinically evaluate & describe the surgical management in brief in
   a] -wounds-ulcers b]- Burns- c]- Head injuries

3] -Describe pre-operative evaluation ,surgical indications & various surgical approaches in various abdominal/ thoracic/peripheral vascular conditions

4] -recall the surgical approaches in the form of line diagram & will be able to describe the components of soft tissues cut to reach the target tissue, & the possible Post operative complication in movement

5] -clinically evaluate post-operative abdominal, thoracic & peripheral vascular conditions; with special reference to the cardio-vascular & pulmonary function, & scar/wound management describe post operative management in brief

6] -be able to read & interpret findings of the X ray-chest

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

SYLLABUS

1] Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management ; Nutrition in the surgical patient ; Wound healing – basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, Scars – types and treatment. Hemostasis – components, hemostatic disorders, factors affecting bleeding during surgery. Transfusion therapy in surgery – blood components, complications of transfusion ; Surgical Infections ; General Post – Operative Complications and its management

2. Reasons for Surgery ; Types of anaesthesia and its affects on the patient ; Types of Incisons ; Clips Ligatures and Sutures ; General Thoracic Procedures – Radiologic Diagnostic procedures, Endoscopy – types, Biopsy – uses and types. Overview and Drainage systems and tubes used in Surgery.

3. Causes, Clinical Presentation, Diagnosis and treatment of the following Thoracic Trauma situations – Airway obstruction, Pnuemothorax, Hemothorax, Cardiac Tamponade, Tracheobronchial disruption, Aortic disruption, Diaphragmatic disruption, Esophageal disruption, Cardiac and Pulmonary Contusions.

4] -. Definition, Indication, Incision, Physiological changes and Complications following Common operations like Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy Mastectomy, Neprectomy, Prostectomy

5] -Head injury-management-surgery of head & neck in neurosurgical conditions
6] -Radical mastectomy-complications-management
7] -Amputation-sites-complication & management
8] . Burn: Definition, Classification, Causes, Prevention, Pathological changes, Complications, Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of Skin Graft ; Flaps – Types and uses of Flaps.
9] Thoracic surgeries – Thoracotomy – Definition, Types of Incisions with emphasis to the site of insision, muscles cut and complications. Lung surgeries : Pnumonectomy, Lobectomy, segmentectomy – Indications, Physiological changes and Complications ; Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung. Cardiac surgeries – An overview of the Cardio-Pulmonary Bypass Machine – Extracardiac Operations, Closed Heart surgery, Open Heart surgery. Transplant Surgery – Heart, Lung and Kidney – Indications, Physiological changes and Complications.

10] -Plastic Surgery

a]-Skin grafts/flaps-Types-indications –with special emphasis to burns/ wounds, ulcers

b]-tendon transfers-with special emphasis to hand, foot & facial paralysis,

c]-Keloids-management

11] -Clinical Radiology-X ray-chest-normal/abnormal

CLINICAL

Evaluation /presentation & recording of one case each in –1]-burns, 2]-wound & ulcer, 3] Head Injury case, 4]-peripheral vascular condition, 5]-post Radical mastactomy, 6] post thoracic surgery, 7]-post abdominal surgery

Auscultation & its interpretation, with special emphasis to Pulmonary Function, Reading & interpretation of the X-ray chest, P.F.T., Blood-Gas analysis-

Text Books-

1. Under-graduate Surgery by Nan
2. Bailey & Love‘s short practice of Surgery-21st ed.

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SYLLABUS

OF

BPT FOURTH SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FOURTH SEMESTER

MEDICINE & PAEDIATRICS-II

Curricular Hours: 40
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 401

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions (1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SYLLABUS

SECTION – A (DERMATOLOGY)

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objectives- At the end of the course, the candidates will-

1] be able to describe the Pathophysiology, signs & symptoms, clinical features, examination, & management of common skin conditions with special emphasis to Leprosy, Psorisis, Vitiligo, acne, Bacterial , Fungal, infections of the skin, Auto-immune disorders, H.I.V. & sexually transmitted diseases,

2] Acquire the skill of clinical examination with reference to conditions mentioned at no1

1. Types of skin irruption- classification-weeping & Dry skin lesions
2. Leprosy-Types- Identification-management of neuropathic Hand & foot
3. Disorders of skin pigmentation-causes-Types [special emphasis to vitiligo]-management
4. skin ulcers of Vaso-motor origin-management
5. Skin lesions related to Allergies & Psychosomatic reaction
6. Cutaneous Tuberculosis
7. Viral, bacterial, Fungal, tropical, & Parasitic skin lesions [in brief]
8. H.I.V. & Sexually transmitted skin lesions
9. Auto-immune disorders-Psoriasis, Dermatitis, Dermatomyositis, S.L.E.
10. Diseases of the scalp-Dandruff, Hair loss, Alopacia, -management
11. Acne-types-management

3] General medicine:-

A) Endocrine system- Diabetes,thyroid,pituitary&adrenal conditions.ca metabolism

4.Infection : Effects of Infection on the body – Pathology – source and spread of infection – vaccinations – generalized infections – rashes and infection – food poisoning and gasteroenteritis – sexually transmitted diseases – HIV infections and Aids

5. Food and Nutrition : Assessment – Nutritional and Energy requirements; Deficiency diseases – clinical features and treatment; Protein – Energy Malnutrition : Clinical features and treatment; Obesity and its related disorders : Causes – Complications – benefits of weight loss – management of Obesity – diet, exercise and medications

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

PAEDIATRICS

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1. genetically transmitted neuro-muscular conditions-spinal muscular atrophy,peripheral neuropathies, Guillain barre syndrome, myasthenia gravis, muscle disorder,muscle dystrophies ,myotonic dystrophy type1,Facioscapulohumeral muscular dystrophy,Emery dreifuss muscular dystrophy,limb girdle muscular dystrophy ,congenital muscular dystrophy
2. common diseases of the respiratory tract- Asthma, bronchitis, T.B. Pneumonia, bronchiactasis,
3. Rheumatic heart disease
4. Mal-nutrition-related conditions
5. Juvenile R.A.-& other immunological conditions of musculo-skeletal system.
6. Nutrition Deficiency Disease
7. Drug Abuse / Intoxication

CLINICAL -

Introduction of clinical examination –Breath sounds / X ray chest / Blood gas analysis /P.F.T.

Text Books –

1. API-Text book of Medicine-5th edn
2. Golwalla-Medicine for students
3. Principles & practice of Medicine-16th edn-by Devidson
4. Essentials of Paediatrics - by O. P. Ghai - Inter Print publications
5. D.K. series in Paediatrics

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FOURTH SEMESTER

ELECTROTHERAPY-I

Course Code: BPT – 402

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

A . LOW FREQUENCY CURRENTS:

1. TENS therapy:

- Principle of therapy, Parameters and therapeutic uses.
- Theories of pain and pain control.
- Indications and contra-indications, Dosimetry

B. Infrared Therapy:

- Therapeutic effects and uses, Techniques of application.
- Indications, contraindications precautions and Potential harmful effects.

C. Heating Modalities:

- Therapeutic effects and uses, Techniques and applications
- Indications, contraindications, precautions and Potential harmful effects of various heat modalities: Paraffin wax bath therapy, Hydro collator packs, Whirlpool and moist heat Heating pads, Hot air chambers.

D. Cold-therapy:

- Indications, contraindications and therapeutic effects.
- Technique, precautions and Potential harmful effects of treatment, Dosimetry

E. HIGH FREQUENCY CURRENTS:

Short wave Diathermy: Continuous & Pulsed

- Indications, contraindications and therapeutic effects.
- Methods of application-capacitor and induction electrode, precautions and Potential harmful effects of treatment, Dosimetry.

Microwave Diathermy:

- Characteristics and therapeutic effects.

- Application techniques, indications, contraindications, precautions and potential harmful effects, Dosimetry.

F. ULTRASONIC THERAPY:

- Physiological and therapeutic effects & potential harmful effects.
- Indications, contraindications, methods of application and precautions, Dosimetry

G. Ultraviolet therapy:

- Physiological and therapeutic effects- photosensitization
- Indications and contraindications and Potential harmful effects.
- Methods of application, Sensitizes, Filters, Dosage, wavelength, penetration, tolerance, Treatment / Application condition wise
- Comparison between UVR & IR Therapy

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ELECTROTHERAPY -I

Course Code: BPT – 451 **L – 0** **T/P – 7** **CREDITS – 7**

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Demonstration of Electrical Modalities functioning & Usage.

Demonstration and practice of therapeutic application of the following modalities:

Short-wave diathermy, Ultrasound, Infra red, Wax bath, Hydro collator, Electric muscle stimulator, Interferential currents, TENS, Ultraviolet, Microwave, Lasers, and Electrical Traction.

Note: All the demonstrations are done on normal persons.

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in Theory and Practical.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FOURTH SEMESTER

EXERCISE THERAPY-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 403

Course Objectives:

To understand the principles of exercise therapy and its application as a treatment modality.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Contents:

1.Methods of Testing

a) Functional tests

b) Measurement of Joint range: ROM-Definition, Normal ROM for all peripheral joints & spine, Goniometer-parts, types, principles, uses., Limitations of goniometry, Techniques for measurement of ROM for all peripheral joints

c) Tests for neuromuscular efficiency

• Electrical tests • Manual Muscle Testing: Introduction to MMT, Principles & Aims, Indications & Limitations, Techniques of MMT for group & individual muscles : Techniques of MMT for upper limb / Techniques of MMT for lower limb / Techniques of MMT for spine 56

• Anthropometric Measurements: Muscle girth – biceps, triceps, forearm, quadriceps, calf • Static power Test • Dynamic power Test • Endurance test • Speed test

d) Tests for Co-ordination

e) Tests for sensation

g) Measurement of Limb Length: true limb length, apparent limb length, segmental limb length

h) Measurement of the angle of Pelvic Inclination

2. . Relaxation

Definitions: Muscle Tone, Postural tone, Voluntary Movement, Degrees of relaxation, Pathological tension in muscle, Stress mechanics, types of stresses, Effects of stress on the body mechanism, Indications of relaxation, Methods & techniques of relaxation-Principles & uses: General, Local, Jacobson's, Mitchel's, additional methods.

3. Passive Movements

Causes of immobility, Classification of Passive movements, Specific definitions related to passive movements, Principles of giving passive movements, Indications, contraindications, effects of uses , Techniques of giving passive movements.

4. Active Movements

Definition of strength, power & work, endurance, muscle actions. Physiology of muscle performance: structure of skeletal muscle, chemical & mechanical events during contraction &relaxation, muscle fiber type, motor unit, force gradation. Causes of decreased muscle performance Physiologic adaptation to training: Strength & Power, Endurance.

Types of active movements Free exercise: Classification, principles, techniques, indications, contraindications, effects and uses Active Assisted Exercise: principles, techniques, indications, contraindications, effects and uses Assisted-Resisted Exercise: principles, techniques, indications, contraindications, effects and uses Resisted Exercise: Definition, principles, indications, contraindications, precautions & techniques, effects and uses Types of resisted exercises: Manual and Mechanical resistance exercise, Isometric exercise, Dynamic exercise: Concentric and Eccentric, Dynamic exercise: Constant versus variable resistance, Isokinetic exercise, Open-Chain and Closed-Chain exercise.

Specific exercise regimens Isotonic: de Lormes, Oxford, MacQueen, Circiut weight training Isometric: BRIME (Brief Resisted Isometric Exercise), Multiple Angle Isometrics Isokinetic regimensMobilization of peripheral, spinal joints, techniques and grading in detail. 10.

5.Stretching

Definition of terms related to stretching; Tissue response towards immobilization and elongation, Determinants of stretching exercise, Effects of stretching, Inhibition and relaxation procedures, Precautions and contraindications of stretching, Techniques of stretching.

6. Hydrotherapy:

- Archimedes principle, Buoyancy-law of floatation
- Effect of buoyancy on movements performed in water
- Physiological effects of exercise in water
- Indication, contraindication, benefits, dangers and precautions
- Hydrotherapy regimes of exercises,
- Hydrotherapy exercise for all age groups
- Types of pools and baths

7. Suspension Therapy:

- Suspension Therapy
- Definition, principles, equipments & accessories, Indications & contraindications, Benefits of suspension therapy Types of suspension therapy: axial, vertical, pendular Techniques of suspension therapy for upper limb Techniques of suspension therapy for lower limb.

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EXERCISE THERAPY - I

Course Code: BPT – 452 **L – 0** **T/P – 7** **CREDITS – 7**

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Demonstration and learning of active & passive movements of Limbs and spine. Demonstration and practice of Manual Muscle testing, Goniometry. Demonstration and practice of muscle stretching techniques.

Demonstration and practice of muscle strengthening techniques. Demonstration and practice of relaxation techniques. Demonstration and practice of mobilization of peripheral joints.

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in theory & practical classes.

Suggested Reading:

1. Hollis & Cook, "Practical Exercise Therapy".
2. Gardiner, "Principles of Exercise Therapy".
3. Kolby Kisner, "Theraputic Exercise".
4. Holey, "Theraputic Massage".
5. Margret Hollis, "Massage for Therapist".
6. Kendall, "Muscles Testing and Function".
7. Norkin, "Measurement of Joint Motion".

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FOURTH SEMESTER

APPLIED BIO-MECHANICS & KINESIOLOGY

Course Code: BPT – 404

Curricular Hours: 120
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Objectives:

To understand the musculoskeletal surgical anatomy normal and pathological deviation..

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Contents:

A . Joint structure and function

1. Types of joints
2. Joint functions
3. General effects of injury and disease on joint functioning
   - Brief surgical anatomy (structural components, and alignment)
   - Joint range of motion, axis and plane of motion
   - Joint movements, mobility and stability, restrictions and limitations, end feels
   - Abnormal deviations in joints in disease and injury
   - Weight distribution (lower limb joints)

Of the following joint complexes:

Shoulder joint complex

Elbow joint complex

Wrist and hand complex

Hip joint complex

Knee joint complex:

Ankle-foot complex:

Vertebral column

B . Abnormal Posture:

1. Definition and description.

2. Analysis of postures (anterior, lateral and posterior), alignment of joints in different postural deviations.
3. Abnormal postures – biomechanical analysis and effects.
4. Principles of Postural correction

C. Pathological Gait:

1. Phases of gait – biomechanical analysis.
2. Time and distance parameters – biomechanical significance.
3. Joint motion – chains of movement
4. Effects of pain, deformity, weakness in pathological gaits
5. Management of pathological gaits.

D. Kinesiology:

1. Analysis of movement – kinetics and kinematics

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SYLLABUS

OF

BPT FIFTH SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIFTH SEMESTER

EXERCISE THERAPY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 501

Course Objectives:

To understand the principles of exercise therapy and its application as a treatment modality.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Contents:

1. Proprioceptive Neuromuscular Facilitation

   Definitions & goals Basic neurophysiologic principles of PNF: Muscular activity, Diagonals patterns of movement: upper limb, lower limb Procedure: components of PNF

   Techniques of facilitation Mobility: Contract relax, Hold relax, Rhythmic initiation Strengthening: Slow reversals, repeated contractions, timing for emphasis, rhythmic stabilization Stability: Alternating isometric, rhythmic stabilization Skill: timing for emphasis, resisted progression Endurance: slow reversals, agonist reversal

2. Crutch Walking:
   - Description of crutch - components, classification
   - Good crutch, measurements
   - Crutch use- Preparation, Training, counseling.
   - Crutch gaits- types, & significance.
3. Co-ordination:
   - Balance – static and Dynamic
   - Definition:co-ordination ,In-cordination
   - Causes for in-cordinition,Test for co-ordination:equillibrium test , non-equillibrium test
   - Principles of co-ordination exercise
   - Discoordination: LMNL & UMNL, cerebellar lesion, loss of kinesthetic sense (Tabesdorsalis, leprosy, syringomyelia)
   - Reeducation of balance and coordination: PNF and Frenkel's exercises.

4. Yogasanas and Pranayama:
    - Physiology and therapeutic principles of yoga,
    - Yogasana for physical culture, relaxation and medication.
    - Application of yogasana in physical fitness, flexibility.
    - Therapeutic application of yoga. Yoga a holistic approach
    - Pranayamas-Principles,methods and techniques.

5. Functional Re-education
    - Lying to sitting: Activities on the Mat/Bed, Movement and stability at floor level; Sitting activities and gait; Lowerlimb and Upperlimb activities.
6. Aerobic Exercise
    - Definition and key terms; Physiological response to aerobic exercise, Examination and evaluation of aerobic capacity – Exercise Testing, Determinants of an Exercise Program, The Exercise Program, Normal and abnormal response to acute aerobic exercise, Physiological changes that occur with training, Application of Principles of an Aerobic conditioning program for patients – types and phases of aerobic training.
7. Manual Therapy & Peripheral Joint Mobilization
    - Schools of Manual Therapy, Principles, Grades, Indications and Contraindications, Effects and Uses – Maitland, Kaltenborn, Mulligan Biomechanical basis for mobilization, Effects of joint mobilsation, Indications and contraindiactions, Grades of mobilization, Principles of mobilization, Techniques of mobilization for upper limb, lower limb, Precautions.
8. Balance
    - Definition
    - Physiology of balance: contributions of sensory systems, processing sensory information, generating motor output Components of balance (sensory, musculoskeletal, biomechanical) Causes of impaired balance, Examination & evaluation of impaired balance, Activities for treating impaired balance: mode, posture, movement, Precautions & contraindications, Types Balance retraining
9. Co-ordination Exercise
    - Anatomy & Physiology of cerebellum with its pathways Definitions: Co-ordination, Inco-ordination Causes for Inco-ordination, Test for co-ordination: equilibrium test, non equilibrium test Principles of co-ordination exercise Frenkel's Exercise: uses of Frenkel's exercise, technique of Frenkel's exercise, progression, home exercise.

Suggested Reading:

1. Hollis & Cook, "Practical Exercise Therapy".
2. Gardiner, "Principles of Exercise Therapy".
3. Kolby Kisner, "Theraputic Exercise".
4. Holey, "Theraputic Massage".
5. Margret Hollis, "Massage for Therapist".
6. Kendall, "Muscles Testing and Function".
7. Norkin, "Measurement of Joint Motion".

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EXERCISE THERAPY-II

Course Code: BPT – 552

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Demonstration and practice of muscle reeducation techniques.

Demonstration and practice of coordination exercises (Frankel's).

Demonstration and practice of crutch gaits.

Demonstration and practice of mechanical spinal traction.

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in theory & practical classes.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIFTH SEMESTER

ELECTROTHERAPY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 502

Course Objectives:

a) To list indications and contraindications of various Modalities.

b) To understand different techniques of applications, their justification and effects.

c) Demonstration of individual techniques of applications of various modalities.

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Contents:

1. Nerve Muscle Physiology: brief outline
2. Faradic current:
   - Indications, contraindications, Techniques, parameters, Group muscle stimulation.
   - Faradic footbath, Faradism under pressure and muscle re-education.
   - Dosimetry
3. Galvanic current:
   - Indications, contraindications, precautions and therapeutic effects of stimulation.
   - Techniques, parameters, Dosimetry
4. Electro-Diagnosis:
   - S. D. Curve,Characters of normally innervated muscle /partially denervated muscle/completely denervated muscle, Reaction of degeneration, Chronaxie & Rheobase.
   - Outline of EMG & Nerve conduction velocity
5. Iontophoresis:
   - Definition and principles & factors
   - Indications, effects, techniques, contraindications, precautions and Potential harmful effects.

6. MEDIUM FREQUENCY CURRENTS:

   Definitions, effects, indications, techniques of application, contraindications.

Interferential therapy:

- •Definition,principles of production of IFT ,static & dynamic inteference system, Physiological, therapeutic effects & dangers, Indications & contra indications
- Technique and method of applications, Dosimetry.

LASER:

- Introduction,types ,principles of production, effects and potential harmful effects.
- Indication, contraindications, precautions, method of application, dosimetry

Advanced electrotherapy:

- Computerization of modalities
- Programming of parameter.
- Selection and combination of parameters.
- Combined therapy-U.S.+TENS-Principles, uses, indications etc.
- Principles of Bio-feed back, indications & uses.

7. **Traction instruments:**

   Rationale, technique, indications, contraindications, precautions of electric traction equipments

8. **UVR**:

   Define UVR, Types of UVR, UVR generators: High pressure mercury vapour lamp, Water cooled mercury vapour lamp, Kromayer lamp, Fluorescent tube, Theraktin tunnel, PUVA apparatus. Physiological & Therapeutic effects. Sensitizers & Filters. Test dosage calculation. Calculation of E1, E2, E3, E4 doses. Indications, contraindications. Dangers. Dosages for different therapeutic effects, Distance in UVR lamp

9. **IRR**:

   Define IRR,wavelength & parameters, Types of IR generators, Production of IR, Physiological & Therapeutic effects, Duration & frequency of treatment, Indication & Contraindication.

Suggested Readings:

1. Forster & Palastanga, "Clayton's Electrotherapy".
2. Low & Reed, "Electrotherapy Explained".
3. Gersh, "Electrotherapy in Rehabilitation".
4. Cameroon, "Physical Agents in Rehabilitation".
5. Susan Mochloviz, "Thermal Agents in Rehabilitation".

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ELECTROTHERAPY-II

Course Code: BPT – 552

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Demonstration and practice of various motor point stimulations.

Demonstration and practice of therapeutic application of different low frequency currents.

Demonstration and practice of Reaction of degeneration, SD curves plotting.

Note: All the demonstrations are done on normal persons.

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstrations based upon learning in Theory and Practical.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIFTH SEMESTER

ORTHOPAEDICS-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 503

Objectives- At the end of the course, the candidate will –

1] -be able to discuss the patho-physiology, clinical manifestations & conservative/Surgical management of various traumatic & cold cases of the musculo-skeletal conditions

2] -Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post-operative cases

3] -will be able to read & interpret a]- salient features of the X-ray of the spine & extremities

4] - pathological/ biochemical studies pertaining to Orthopaedic conditions

5] -will be able to correlate the radiological findings with the clinical findings

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Syllabus-

1. Disease of Bones and Joints : Causes, Clinical features, Complications, Management- medical and surgical of the following conditions :

   Infective conditions: Osteomyelitis (Acute / chronic). Brodie's abscess. TB spine and major joints like shoulder, hip, knee, ankle, elbow etc. • Arthritic conditions: Pyogenic arthritis. Septic arthritis. Syphilytic infection of joints. • Bone Tumors: classification, clinical features, management - medical and surgical of the following tumors : Osteoma. Osteosarcoma, Osteochondroma. Enchondroma. Ewing's sarcoma. Gaint cell tumor. Multiple myeloma. Metastatic tumors. • Perthes disease, Slipped Capital Femoral Epiphysis and Avascular Necrosis. • Metabolic Bone Diseases: Rickets. Osteomalacia, Osteopenia. Osteoporosis.

2. Syndromes : Causes, Clinical features, complications, management- conservative and surgical of the following : Cervico brachial syndrome. Thoracic outlet syndrome. Vertebro- basilar syndrome. Scalenus syndrome. Costo clavicular syndrome. Levator scapulae syndrome. Piriformis syndrome
3. Fractures of the spine & extremities-classification/management & complications

4] - Fractures and Dislocations of Upper Limb

Fractures of Upper Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures: Fractures of clavicle and scapula. Fractures of greater tuberosity and neck of humerus. Fracture shaft of humerus. Supracondylar fracture of humerus. Fractures of capitulum, radial head, olecranon, coronoid, and epicondyles. Side swipe injury of elbow. Both bone fractures of ulna and radius. Fracture of forearm – monteggia, galaezzi fracture –dislocation. Chauffer's fracture.Colle's fracture. Smith's fracture. Scaphoid fracture. Fracture of the metacarpals. Bennett's fracture. Fracture of the phalanges. (Proximal and middle.)

Dislocations of Upper Limb - Anterior dislocation of shoulder – mechanism of injury, clinical feature, complications, conservative management (Kocher's and Hippocrates maneuver), surgical management (putti plat, bankart's) etc. Recurrent dislocation of shoulder. Posterior dislocation of shoulder – mechanism of injury, clinical features and management. Posterior dislocation of elbow – mechanism of injury, clinical feature, complications & management.

5]- Fracture of Spine

Fracture of Cervical Spine - Mechanism of injury, clinical feature, complications (quadriplegia); Management- immobilization (collar, cast, brace, traction); Management for stabilization, management of complication (bladder and bowel, quadriplegia). Clay shoveller's fracture. Hangman's fracture. Fracture odontoid. Fracture of atlas.

Fracture of Thoracic and Lumbar Regions - Mechanism of injury, clinical features, management — conservative and surgical of common fractures around thoracic and lumbar regions.Fracture of coccyx.

Fracture of Rib Cage - Mechanism of injury, clinical features, management for Fracture Ribs, Fracture of sternum.

6] -Fractures and Dislocations of Lower Limb

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

Dislocations of Lower Limb - mechanism of injury, clinical features, complications, management of the following dislocations of lower limb. Anterior dislocation of hip. Posterior dislocation of hip. Central dislocation of hip. Dislocation of patella. Recurrent dislocation of patella.

7] -Metabolic & hormonal disorders of the bone tissue-Osteoporosis

8] -clinical Radiology in Orthopaedics

9]. Cervical and Lumbar Pathology : Causes, clinical feature, patho-physiology, investigations, management-Medical and surgical for the following : Prolapsed interverbral disc (PID), Spinal Canal Stenosis.

Spondylosis (cervical and lumbar) Spondylolysis. Spondylolisthesis. Lumbago/ Lumbosacral strain. Sacralisation. Lumbarisation. Coccydynia. Hemivertebra.

10]. Orthopedic Surgeries : Indications, Classification, Types, Principles of management of the following Surgeries : Arthrodesis. Arthroplasty (partial and total replacement). Osteotomy , External fixators. Spinal stabilization surgeries(Harrington's, Luque's, Steffi plating) etc , Limb re-attachments.

CLINICAL-

1] -Independent Clinical Orthopaedic evaluation , presentation & recording of

a] -one acute soft tissue lesion [including nerve injury],

b] -2 cases of degenerative arthritis of extremity joints,

c] -2 degenerative arthritis of spine

Text Books-

1] -Adam's outline of fractures-8th edn

2] -Adams outline of Orthopaedics-8th edn

3] -Apley's textbook of Orthopaedics

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

FIFTH SEMESTER

NEUROLOGY INCLUDING PSYCHIATRY-I

Course Code: BPT – 504

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions (1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SECTION – A

NEUROLOGY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1] -circulation of the brain & spinal cord-Cerebro-vascular accidents Cerebro-vascular diseases: Define stroke, TIA, RIA, stroke in evolution, multi infarct dementia and Lacunar infarct. Classification of stroke – Ischemic, hemorrhagic, venous infarcts. Risk factors, cause of ischemic stroke, causes of hemorrhagic stroke. Classification of hemorrhagic stroke, classification of stroke based on symptoms, stroke syndrome, investigations, differential diagnosis, medical and surgical management.

2] -Pyramidal & Extra Pyramidal lesions Motor neuron diseases: - Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications of following disorders - Amyotrophic lateral sclerosis, Spinal muscular atrophy, Hereditary bulbar palsy, Neuromyotonia and Post-irradiation lumbosacral polyradiculopathy.

3] -Disorders of Nerve roots & peripheral nerves

Focal peripheral neuropathy: Clinical diagnosis of focal neuropathy, neurotmesis, Axonotmesis, Neuropraxia. Etiology, risk factors, classification, neurological signs & symptoms, investigations, management, of following disorders – RSD, Nerve tumors, Brachial plexus palsy, Thoracic outlet syndrome, Lumbosacral plexus lesions, Phrenic & Intercostals nerve lesions, Median nerve palsy, Ulnar nerve palsy, Radial nerve palsy, Musculocutaneous nerve palsy, Anterior & Posterior interosseous nerve palsy, Axillary nerve palsy, Long thoracic nerve palsy, Suprascapular nerve palsy, Sciatic nerve palsy, Tibial nerve palsy, Common peroneal nerve palsy, Femoral nerve palsy, Obturator nerve palsy, Pudental nerve palsy.

4] - Disorders & Diseases of muscle Classification, investigations, imaging methods, Muscle biopsy, management of muscle diseases, genetic counselling. Classification, etiology, signs & symptoms of following disorders – Muscular dystrophy, Myotonic dystrophy, myopathy, Non-dystrophic myotonia

5] -Disorders of the spinal cord & cauda equina Functions of tracts, definition, etiology, risk factors, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Spinal cord injury, Compression by IVD prolapse, Spinal epidural abscess, Transverse myelitis, Viral myelitis, Syringomyelia, Spina bifida, Sub acute combined degeneration of the cord, Hereditary spastic paraplegia, Radiation myelopathy, Progressive encephalomyelitis, Conus medullaris syndrome, Bladder & bowel dysfunction, and Sarcodosis.

6] - Demyelinating diseases. Multiple sclerosis - Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications.

7] - Infections of the nervous system Infections of brain and spinal cord: Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Meningitis, Encephalitis, Poliomyelitis and Postpolio syndrome. Complications of systemic infections on nervous system – Septic encephalopathy, AIDS, Rheumatic fever, Brucellosis, Tetanus, and Pertussis

PSYCHIATRY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objective - At the end of the course, the candidates will be able to-

1] -Enumerate various Psychiatric disorders with special emphasis to movement /Pain & ADLdescribe the various causative factors & methods of assessment & management

2] -Acquire the knowledge in brief, about the pathological & etiological factors, signs /symptoms & management of various Psychiatric conditions

3] -Describe in brief the various treatment modalities commonly used

Syllabus-

1] Introduction to Psychiatry.

2. Examination of Psychiatric cases

3. Clinical manifestations of psychiatric disorders.

4. Classification of mental disorders.'

5. Theories of personality and psychoanalysis.

6. Neuropsychiatric aspects ofa) Cerebrovascular disorders b) Brain tumors c) Epilepsy d) Traumatic brain injury e) Movement disorders f) HIV infection and AIDS. g) Headache-causes and management h) Neuromuscular disorders.

7. Delirium, dementia, amnesic and other cognitive disorders.

8. Substance related disorders-alcohol, amphetamine, cannabis, opium, caffeine, nicotine, hallucinogens, etc.

9. Schizophrenia.

Text Books-

1] -A short book of Psychiatry-3rd edn-by Ahuja- Jaypee bros-medical publishers

2] -Shah L.P.-Handbook of Psychiatry

SYLLABUS

OF

BPT SIXTH SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SIXTH SEMESTER

PHYSIOTHERAPEUTIC IN ORTHOPAEDIC-I

Course Code: BPT – 601

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Course Objectives:

a) To identify various Musculo skeletal dysfunction clinically

b) To set goals and apply therapeutic skills in different orthopaedic conditions.

1. Physiotherapy evaluation of an orthopaedic patient PT assessment for Orthopedic conditions - SOAP format. Subjective - history taking, informed consent, personal, past, medical and socioeconomic history, chief complaints, history of present illness. Pain assessment- intensity, character, aggravating and relieving factors, site and location. Objective- on observation - body built swelling, muscle atrophy, deformities, posture and gait. On palpation- tenderness-grades, muscle spasm, swelling-methods of swelling assessment, bony prominences, soft tissue texture and integrity, warmth and vasomotor disturbances. On examination – ROM – active and passive, resisted isometric tests, limb length-apparent, true and segmental , girth measurement, muscle length testing-tightness, contracture and flexibility, manual muscle testing, peripheral neurological examinationdermatomes, myotomes and reflexes, special tests and functional tests. Prescription of home program. Documentation of case records, and follow up.
2. General principles of physiotherapy in fracture management including complications at different stages Fractures - types, classification, signs and symptoms, complications. Fracture healing - factors affecting fracture healing. Principles of fracture management - reduction - open and closed, immobilization - sling, cast, brace, slab, traction - manual, mechanical, skin, skeletal, lumbar and Cervical traction, external fixation, functional cast bracing. PT management in complications - early and late - shock, compartment syndrome, VIC, fat embolism, delayed and mal union, RSD, myositis ossificans, AVN, pressure sores etc. Physiotherapy assessment in fracture cases. Aims of PT management in fracture cases - short and long term goals. Principles of PT management in fractures - Guidelines for fracture treatment during period of immobilization and guidelines for treatment after immobilization period.
3. General principles of physiotherapy in dislocations management including complications Specific fractures and dislocations : PT assessment and management of upper limb fractures and dislocations. PT assessment and management of lower limb fractures and dislocations
4. including pelvis. PT assessment and management spinal fractures.

5. Post fracture - assessment and PT management of: various fractures of upper limb, lower limb, vertebral column. Shoulder joint : Shoulder instabilities, TOS, RSD, Impingement syndrome - conservative and Post operative PT management. Total shoulder replacement and Hemi replacement. - Post operative PT management. AC joint injuries - rehabilitation. Rotator cuff tears- conservative and surgical repair. Subacromial decompression - Post operative PT management.
6. Elbow and forearm: Excision of radial head - Post operative PT management. Total elbow arthroplasty- Post operative PT management.
7. Wrist and Hand: Total wrist arthroplasty. Repair of ruptured extensor tendons. Carpal tunnel syndrome. Flexor and extensor tendon lacerations - Post operative PT management.
8. Hip: Joint surgeries - hemi and total hip replacement - Post operative PT management Tendonitis and bursitis. - management.
   . Knee: Lateral retinacular release, chondroplasty- Post operative management. Realignment of extensor mechanism. ACL and PCL reconstruction surgeries - Post operative rehabilitation. Meniscectomy and meniscal repair - Post operative management. Plica syndrome, patellar dysfunction and Hoffa's syndrome- conservative management. TKR- rehabilitation protocol. Patellar tendon ruptures and Patellectomy- rehabilitation.
9. Ankle and foot: Ankle instability. Ligamentous tears- Post operative management.
10. Assessment and therapeutic management of: Soft tissue injuries – Sprains, strains, ligament and cartilage tear/rupture Soft Tissue Injuries - Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis. Mechanism of injury of each, clinical features, managements- conservative and surgical of the following soft tissue injuries: Meniscal injuries of knee. Cruciate injuries of knee. Medial and lateral collateral injuries of knee. Lateral ligament of ankle. Wrist sprains. Strains- quadriceps, hamstrings, calf, biceps, triceps etc. Contusions- quadriceps, gluteal, calf, deltoid etc. Tendon ruptures-Achilles, rotator cuff muscles, biceps, pectorals etc.
11. Orthopaedic surgery: General principles of assessment, physiotherapy management in surgical conditions like – osteotomy, joint replacements, ORIF, arthodesis, Illizarov's technique

Suggested Reading:

1. Thomson, "Tidy's Physiotherapy".
2. Kolby Kisner, "Theraputic Exercise".
3. Joshi & Kotwal. "Essential of Orthopaedics".

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PHYSIOTHERAPEUTIC IN ORTHOPAEDIC-I

Course Code: BPT – 651 **L – 0** **T/P – 7** **CREDITS – 7**

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of application of physical therapy treatment of orthopaedic conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SIXTH SEMESTER

PHYSIOTHERAPEUTIC IN NEUROLOGY-I

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 602 **L – 4** **T/P – 0** **CREDITS – 8**

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Contents:

A) Review of basic Neuro-Anatomy and Physiology

B) Evaluation of a neurological patient, general outline of electro diagnostic procedures, interpretations and prognosis in different neurological conditions Neurological Assessment: Required materials for examination, Chief complaints, History taking – Present, Past, medical, familial, personal histories, Observation, Palpation, Higher mental function – Consciousness, Orientation, Wakefulness, memory, Speech, Reading, Language, Writing, Calculations, Perception, Left right confusion, Reasoning, and Judgment, Motor Examination – Muscle power, Muscle tone, Spasticity, Flaccidity, Reflexes – Developmental reflexes, deep tendon reflexes, Superficial reflexes, Sensory examination – Superficial, Deep and Cortical sensations, Special tests – Romberg's, Kernig's sign, Brudenzki sign, Tinels's sign, Slum test, Lehermitte's sign, Bells Phenomenon, Gower's sign, Sun set sign, Battle's sign, Glabellar tap sign, etc, Balance examination, coordination examination, Gait analysis – Kinetics & Kinematics (Quantitative & Qualitative analysis), Functional Analysis, Assessment tools & Scales – Modified Ashworth scale, Berg balance scale, FIM, Barthel index, Glasgow coma scale, Mini mental state examination, Rancho Los Amigos Scale for Head injury, APGAR score, ASIA scale, Reflex Grading. Differential diagnosis.

C) Assessment and principles of therapeutic management of following neurological conditions:

- Stroke, meningitis, encephalitis, Parkinson's disease, Cerebral palsy, Ataxia, Brain tumors
- Motor neuron disease, Disseminated sclerosis, transverse myelitis, tumors, polio, syringomyelia, spina bifida,
- Neuropathies and myopathies

D) Evaluation and Management of Peripheral Nerve Injuries and Disorders : History, Observation, Palpation, Motor & Sensory examination, Reflex testing, differential Diagnosis, Balance & Coordination examination, Gait analysis, Functional analysis, List of Problems & Complications, short & Long Term goals, Management of systemic complications, Management of Mechanical Complications, Use of various Neurophysiological approaches& Modalities in Hereditary motor sensory neuropathy, Guillain-Barre syndrome, Brachial plexus palsy, Thoracic outlet syndrome, Lumbosacral plexus lesions, Phrenic & intercostals nerve lesions, Median nerve palsy, Ulnar nerve palsy, Radial nerve palsy, Musculocutaneous nerve palsy, Anterior & Posterior interosseous nerve palsy, Axillary nerve palsy, Long thoracic nerve palsy, Suprascapular nerve palsy, sciatic nerve palsy, Tibial nerve palsy, Common peroneal nerve palsy, Femoral nerve palsy, Obturator nerve palsy, and Pudental nerve palsy.

Suggested Readings:

1. Thomson, "Tidy's Physiotherapy".
2. Berta Bobath, "Adult Hemiplegia".
3. Patrica Downe, "Cash's Textbook of Neurology".
4. Sawner, "Brunnstom's Movement Therapy in Hemi".
5. Ida Bromely, "Tetraplegia & Paraplegia".

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PHYSIOTHERAPEUTIC IN NEUROLOGY-I

Course Code: BPT – 652

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of physical therapy in treatment of neurological conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SIXTH SEMESTER

ORTHOPAEDICS-II

Course Code: BPT – 603

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Objectives- At the end of the course, the candidate will –

1] -be able to discuss the patho-physiology, clinical manifestations & conservative/Surgical management of various traumatic & cold cases of the musculo-skeletal conditions

2] -Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post-operative cases

3] -will be able to read & interpret a]- salient features of the X-ray of the spine & extremities

4] - pathological/ biochemical studies pertaining to Orthopaedic conditions

5] -will be able to correlate the radiological findings with the clinical findings

Syllabus-

1]-peripheral nerve injuries.-management / complications—V.I.C.

2] -Deformities of the spine, extremities –congenital malformation-Spina Bifida, meningocele/ meningomyocele

3]- Neuromuscular Disorders : Definition, causes, clinical feature, complications, management. (Multidisciplinary approach) medical and surgical of the following conditions : Cerebral palsy. Poliomyelitis. Spinal Dysraphism. Leprosy..

4] -Inflammatory / Infectious diseases of the bone & joints T.B./ Osteomyelitis 2. InfIammatory and Degenerative Conditions : causes, clinical feature, complications, deformities, radiological features, management- conservative and surgical for the following conditions : Osteoarthritis. Rheumatoid arthritis. Ankylosing spondylitis Gouty arthritis. Psoriatic arthritis. Hemophilic arthritis. Still's disease (juvenile rheumatoid arthritis). Charcot's joints. Connective Tissue Disorders- Systemic Lupus Erythematosis, Scleroderma, Dermatomyositis, Poliomyelitis, Mixed connective tissue Disease (MCTD)

5] -tumors of the bone.

6] -. Regional Conditions : Definition, Clinical features and management of the following regional conditions• Shoulder: Periarthritic shoulder (adhesive capsulitis). Rotator cuff tendinitis. Supraspinatus Tendinitis. Infraspinatus Tendinitis. Bicipital Tendinitis. Subacromial Bursitis. • Elbow: Tennis Elbow. Golfer's Elbow. Olecranon Bursitis (student's elbow). Triceps Tendinitis. • Wrist and Hand: De Quervain's Tenosynovitis. Ganglion. Trigger Finger/ Thumb. Mallet Finger, Carpal Tunnel Syndrome, Dupuytren's Contracture. • Pelvis and Hip : IT Band Syndrome. Piriformis Syndrome. Trochanteric Bursitis. • Knee: Osteochondritis Dissecans. Prepatellar and Suprapatellar Bursitis. Popliteal Tendinitis. Patellar Tendinitis. Chondromalacia Patella. Plica Syndrome. Fat Pad Syndrome (Hoffa's syndrome). • Ankle and Foot: Ankle Sprains. Plantar Fasciitis / Calcaneal Spur. Tarsal Tunnel Syndrome. Achilles Tendinitis. Metatarsalgia. Morton's Neuroma.

7] - Amputation-classification-prosthetic management

8]-hand injury- management mechanism of injury, clinical features, and management of the following - Crush injuries. Flexor and extensor injuries. Burn injuries of hand

9] Cervical and Lumbar Pathology : Causes, clinical feature, patho-physiology, investigations, management-Medical and surgical for the following : Prolapsed interverbral disc (PID), Spinal Canal Stenosis. Spondylosis (cervical and lumbar) Spondylolysis. Spondylolisthesis. Lumbago/ Lumbosacral strain. Sacralisation. Lumbarisation. Coccydynia. Hemivertebra.

CLINICAL-

1] -Independent Clinical Orthopaedic evaluation , presentation & recording of

A] -one case of acute P.I.D.,

B] -2 chronic backaches,

C] -1 post operative cases of fractures of extremities g]-one traumatic paraplegia/quadriplegia

OBSERVATION

Aleast 2 surgeries of # internal fixation, one knee/hip replacement & Re-constructive surgery of the tendons

Text Books-

1] -Adam's outline of fractures-8th ed.

2] -Adams outline of Orthopaedics-8th ed.

3] -Apley's textbook of Orthopaedics

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SIXTH SEMESTER

NEUROLOGY INCLUDING PSYCHIATRY-II

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 604

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 question (1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper

NEUROLOGY

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1] -Tetanus-management

2] -Hereditary & Degenerative disorders

3] Cerebellar and coordination disorders: Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, management of Congenital ataxia, Friedreich's ataxia, Ataxia talengiectasia, Metabolic ataxia, Hereditary cerebellar ataxia, Tabes dorsalis and Syphilis

4] Higher cortical, neuro psychological and neurobehavioral disorders: Causes of blackouts, physiological nature of Epilepsy, classification, clinical features, investigations, medical& surgical management of following disorders – Non-epileptic attacks of childhood, Epilepsy in childhood, Seizers, and Epilepsy syndromes in adult. Classification and clinical features of Dyssomnias, Parasomnias, Dementia, Obsessive-compulsive disorders. Neural basis of consciousness, causes & investigations of Coma, criteria for diagnosis of Brain death. Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, management of Perceptual disorders and Speech disorders.

5]. Disorders of neuromuscular junction – Etiology, classification, signs & symptoms, investigations, management, of following disorders Myasthenia gravis, Eaton-Lambert syndrome, and Botulism.

6]. Muscle diseases: Classification, investigations, imaging methods, Muscle biopsy, management of muscle diseases, genetic counselling. Classification, etiology, signs & symptoms of following disorders – Muscular dystrophy, Myotonic dystrophy, myopathy, Non-dystrophic myotonia.

7]. Introduction, Indications and Complications of following Neuro surgeries: Craniotomy, Cranioplasty, Stereotactic surgery, Deep brain stimulation, Burr-hole, Shunting, Laminectomy, Hemilaminectomy, Rhizotomy, Microvascular decompression surgery, Endarterectomy, Embolization, Pituitary surgery, Ablative surgery - Thalamotomy and Pallidotomy, Coiling of aneurysm, Clipping of aneurysm, and Neural implantation

CLINICAL Evaluation,

interpretation, presentation & recording of Two cases Each, In- 1] U.M.N.lesion, 2]-L.M.N.lesion, 3]-Respiratory, 4]-Cardiological/peripheral vascular 5]-Degenerative/Rheumatological conditions

PSYCHIATRY

Full marks -35 marks Timing – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objective - At the end of the course, the candidates will be able to-

1] -Acquire the knowledge in brief, about the pathological & etiological factors, signs /symptoms & management of various Psychiatric conditions

2] -Describe in brief the various treatment modalities commonly used

3] Fictitious disorder. Dissociative disorderso. Sleep disorders. Impulse control disorders not classified elsewhere. Adjustment disorder. Personality disorders . Psychological factors affecting medical conditions.. Disaster-types, psychiatric co-morbidities and management.. Mental retardation.. Early onset schizophrenia. Attention deficit disorder. Conduct disorders. Tie disorders. . Rehab. psychiatry of Childhood. Psychotherapies

4] Other psychotic disorders: Schizo affective disorders,schizophrenic form and brief psychotic disorders.

Mood disorder. . Anxiety disorders - GAD, phobias, panic disorder, ASD, PTSD"OCD. Somatoform disorders – a) Conversion disorder b) Somatization disorder c) Hypochondriasis d) Pain disorder e) Body dysmorphic disorder.

5] -Management-ECT, Chemotherapy, group therapy,, psycho therapy, cognitive behavioral therapy behavioral therapy

Text Books-

1] -A short book of Psychiatry-3rd ed-by Ahuja- Jaypee bros-medical publishers

2] -Shah L.P.-Handbook of Psychiatry

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SYLLABUS

OF

BPT SEVENTH SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SEVENTH SEMESTER

PHYSIOTHERAPEUTIC IN ORTHOPAEDIC-II

Course Code: BPT – 701

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Course Objectives:

a) To identify various Musculo skeletal dysfunction clinically

b) To set goals and apply therapeutic skills in different orthopaedic conditions.

1. Tendon transfers, soft tissue releases & soft tissue repair
2. Spinal stabilization, scoliosis correction
3. Deformities: Review in detail the causes, signs and symptoms, radiological features, medical and surgical management. Describe the PT. assessment and management of the following conditions : Congenital : CTEV, CDH, Torticollis, pes planus, pes cavus and other common deformities. Acquired: scoliosis, kyphosis, coxa vara, genu varum, valgum and recurvatum.
4. Cerebral palsy: Definition, etiology, classification, clinical features, complications, deformities, medical and surgical management and home program with special emphasis on carrying techniques. PT management after surgical corrections.
5. Poliomyelitis: Definition, etiology, types, pathophysiology, clinical features, deformities, medical and surgical management. PT. assessment and management after surgical corrections and reconstructive surgeries - emphasis on tendon transfer and home program.
6. Leprosy: Definition, cause, clinical features, medical and surgical management. PT assessment, aims, and management after surgical procedures such as tendon transfer both pre and post operatively.
7. Amputations: Definition, levels, indications, types, PT assessment, aims, management pre and post operatively. PT management with emphasis on stump care and bandaging. Pre and post prosthetic training, checking out prosthesis, complications of amputations and its management.
8. Spinal conditions: Review the causes, signs and symptoms, investigations, radiological features, neurological signs. PT assessment, aims, and management and home program of the following conditions: Cervical spondylosis, Lumbar spondylosis, Spondylolisthesis, Spinal canal stenosis, Spondylolysis,

Sacro-iliac joint dysfunction, Sacralisation, Lumbarisation, Intervertebral disc prolapse, Coccydynia, Spina bifida occulta.

Manipulation therapy - general assessment, indications, contra indications, brief introduction to schools of manual therapy (Maitland, Kaltenborne, Cyriax, Mulligan, Mackenzie)

9. Amputation – pre & postoperative evaluation & principles of management Pre & post prosthetic assessment & principles of management
10. Osteoporosis- causes, predisposing factors, investigations and treatment.
11. Orthopedic surgeries: Pre and post operative PT assessment, goals, precautions and PT management of following surgeries such as : Arthrodesis, Osteotomy, Arthroplasty-partial and total - Excision arthroplasty, excision arthroplasty with implant, interpositional arthroplasty and total replacement; Tendon transplant, Soft tissue release- tenotomy, myotomy, lengthening; Arthroscopy, Spinal stabilization, Re-attachment of limbs, External fixators, Synovectomy.
12. Shoulder joint : Shoulder instabilities, TOS, RSD, Impingement syndrome - conservative and Post operative PT management. Total shoulder replacement and Hemi replacement. - Post operative PT management. AC joint injuries - rehabilitation. Rotator cuff tears- conservative and surgical repair. Subacromial decompression - Post operative PT management.
13. Knee: Lateral retinacular release, chondroplasty- Post operative management. Realignment of extensor mechanism. ACL and PCL reconstruction surgeries - Post operative rehabilitation. Meniscectomy and meniscal repair - Post operative management. Plica syndrome, patellar dysfunction and Hoffa's syndrome-conservative management. TKR- rehabilitation protocol. Patellar tendon ruptures and Patellectomy-rehabilitation.

Suggested Reading:

1. Thomson, "Tidy's Physiotherapy".
2. Kolby Kisner, "Theraputic Exercise".
3. Joshi & Kotwal. "Essential of Orthopaedics".

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PHYSIOTHERAPEUTIC IN ORTHOPAEDIC-II

Course Code: BPT – 751 **L – 0** **T/P – 7** **CREDITS – 7**

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of application of physical therapy treatment of orthopaedic conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SEVENTH SEMESTER

PHYSIOTHERAPEUTIC IN NEUROLOGY-II

Course Code: BPT – 702

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Course objectives:

a) To identify various neurological dysfunction clinically

b) To set goals and apply therapeutic skills in different neurological conditions.

Contents:

A) Developmental programs, reeducation and retraining techniques in neurological conditions, approaches like: Bobath's, Rood's, PNF, Vojta techniques, biofeedback, Brunnstorm, Motor Relearning programming

B) Evaluation and Management of Brain and Spinal Cord Disorders : History, Observation, Palpation, Higher mental function, Cranial nerve examination, Motor & Sensory examination, Reflex testing, differential Diagnosis, Balance & Coordination examination, Gait analysis, Functional analysis, List of Problems & Complications, short & Long Term goals, Management of systemic complications, Management of Mechanical Complications, Use of various Neurophysiological approaches& Modalities in Cerebro vascular Accident, Meningitis, Encephalitis, Head Injury, Brain Tumors, Perceptual disorders, Amyotrophic lateral sclerosis, and Multiple sclerosis. . Evaluation and Management of Cerebellar, Spinal Cord and Muscle Disorders : History, Observation, Palpation, Motor & Sensory examination, Reflex testing, differential Diagnosis, Balance & Coordination examination, Gait analysis, Functional analysis, List of Problems & Complications, short & Long Term goals, Management of systemic complications, Management of Mechanical Complications, Use of various Neurophysiological approaches& Modalities in Ataxia, Sensory Ataxia, Parkinson's disease, Muscular dystrophy (DMD), Myasthenia Gravis, Eaton-Lambert Syndrome, Spinal tumors, Spinal cord injury, Transverse myelitis, Bladder & Bowel Dysfunction, Spinal muscular atrophies, Poliomyelitis, Post Polio Syndrome C) Traumatic brain injury:

- Types and Mechanisms of head injury
- Clinical features, potential complications
- Physiotherapy principles of immediate and postoperative therapeutic management

D) Neurosurgery: Post surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgical treatment of spasticity, cervical cord decompression

Suggested Readings:

1. Thomson, "Tidy's Physiotherapy".
2. Berta Bobath, "Adult Hemiplegia".
3. Patrica Downe, "Cash's Textbook of Neurology".
4. Sawner, "Brunnstom's Movement Therapy in Hemi".
5. Ida Bromely, "Tetraplegia & Paraplegia".

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PHYSIOTHERAPEUTIC IN NEUROLOGY-I

Course Code: BPT – 752

Curricular Hours: 140
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of physical therapy in treatment of neurological conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SEVENTH SEMESTER

PHYSIOTHERAPEUTIC IN CARDIOTHORACIC

Course Code: BPT – 703

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

SYLLABUS

A) Review of basic cardio-thoracic anatomy and Haemodynamics

B) Principles of physiotherapeutic treatment in following conditions:

1. Bronchitis, asthma & bronchiectasis

2. Pulmonary embolism, tuberculosis, emphysema, atelectasis, pneumothorax, haemothorax.

3. Pulmonary rehabilitation – aims & objectives, principles, techniques including biofeedback.

C) Clinical examination in cardiovascular and Pulmonary conditions with lung function test.

D) Principles of physiotherapeutic treatment in following conditions:

1. CHF, MI, HT

2. Valve anomalies (MR, MS, AR, AS, TR, TS), congenital heart disorders (TOF, PDA, ASD, VSD.)

3. Cardio-thoracic trauma/surgery:

a) . Physiotherapy following Lung surgeries

. Physiotherapy management following cardiac surgeries

b) Principles of chest physiotherapy in ICU & ICCU.

E) Physiotherapy techniques to increase lung volume – positioning, breathing exercises, Neurophysiological Facilitation of Respiration, Mechanical aids - Incentive Spirometry, CPAP,IPPB

F) Physiotherapy techniques to decrease the work of breathing , positioning, Breathing re-education – Breathing control techniques, mechanical aids – IPPB, CPAP, BiPAP

G) Physiotherapy techniques to clear secretions – Hydration, Humidification & Nebulisation, Mobilisation and Breathing exercises, Postural Drainage, Manual techniques – Percussion, Vibration and Shaking, Mechanical Aids – PEP, Flutter, IPPB, Facilitation of Cough and Huff, Nasopharyngeal Suctioning

Suggested Reading:

1. Patrica Downie, "Cash's Textbook of Chest".
2. Frownfelter, "Pr. & Pr : Of Cardiopulmonary PT".
3. Irwin & Tecklin, "Cardiopulmonary Physical Th."

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PHYSIOTHERAPEUTIC IN GENERAL & CARDIOTHORACIC

Course Code: BPT – 753

Curricular Hours: 120
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of application of physiotherapy assessment, functional assessment and application of physical therapy of general & cardio thoracic conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

SEVENTH SEMESTER

OBSTETRICS AND GYNECOLOGY

Course Code: BPT – 704

Curricular Hours: 40
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Objective-at the end of the course, the candidate will

1] -Be able to describe the normal & abnormal physiological events during the Puberty, pregnancy, labor, puerperium, post-natal stage, & menopause

2] -Be able to discuss various complications during pregnancy, labour, puerperium & postnatal stage, peri & post menopausal stage & various aspects of urogenital dysfunction & the management in brief

3] -acquire the skill of clinical examination of the pelvic floor

4] -acquire the skill of the clinical examination of a pregnant woman

Syllabus-

1] -Physiology of menstruation-abnormalities & common problems

2] -Pregnancy-Fertilization-Development of the fetus-normal /abnormal-multiple gestations-Complications during pregnancy

3] -Labor-normal-Events of I st II nd & III rd Stages of labor-complications-managementconservative/ Caesarian section-

4] -Puerperium / postnatal recovery/ lactation/complications of repeated child bearing with small gaps

5] -sterility-management

6] -methods of family planning

7] -Uro-genital dysfunction- prolapse-classification-management

8] -Neoplasm of Female reproductive organs-surgical management

9] -Menopause- management-

CLINICAL-

1] -independent clinical examination, presentation & recording of

a] -5 pelvic floors,

b] -3 pregnant uteri

c] -2 mothers during puerparium

OBSERVATION- minimum one normal & one caesarian delivery, one case of tubectomy & one Hysterectomy/repair of the uro-genital prolapse

Text Books -

1] -Text book of Gynecology- by Dutta- New Central book agency

2] -Text book of Obstetrics by Dutta ——————————do——————————

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SYLLABUS

OF

BPT EIGHTH SEMESTER

VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

EIGHT SEMESTER

PHYSIOTHERAPEUTIC IN SPORTS

Course Code: BPT – 801

Curricular Hours: 160
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

Course Objectives:

To acquire concepts of evaluation of sports and sports injuries

To learn concepts of sports training and physiotherapy for prevention and rehabilitation

A) pre exercise evaluation

B) Diet and nutrition

C) Measurement of fitness components and sports skills

- Measurement of muscular strength
- Measurement of muscular endurance
- Measurement of flexibility
- Determination exercise endurance

D) Physiological effects of exercise on body systems

- Muscular system
- Endocrine system
- Cardio-respiratory system
- Nervous system

E) Sports injuries

- Sports Physiotherapy : Physical fitness. Stages of soft tissue healing. Treatment guidelines for soft tissue injuries- Acute, Sub acute and chronic stages. Repair of soft tissues- rupture of muscle, tendon and Ligamen.tous tears. Soft tissue injuries- prevention and rehabilitation of, Lateral ligament sprain of ankle. Rotator cuff injuries. Collateral and Cruciate injuries of knee. Meniscal injuries of knee. Supraspinatus and Bicipital tendonitis . Pre patellar and Subacromial bursitis.

Tennis and Golfer's elbow. Hamstring strains, Quadriceps contusion, TA rupture. Dequervain's tenosynovitis. Trigger and Mallet finger. Plantar fasciitis. Wrist sprains.

F) Principles of injury prevention

G) Principles of training & Rehabilitation in sports injuries

Suggested Readings:

1. Starkey, "Evaluation of Ortho. & Atheletic Injuries".
2. Mclathie. "Soft Tissues Trau. & Sports Injuries".
3. Norris, "Sports Injuries Diag. & Management".
4. Garrick "Sports Injuries Diag. & Management".

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PHYSIOTHERAPEUTIC IN SPORTS

Course Code: BPT – 851

Curricular Hours: 240
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of sports physiotherapy

PRACTICAL EXAMINATION

Students will be assessed by viva based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

EIGHT SEMESTER

PHYSIOTHERAPEUTIC IN GENERAL CONDITION

Course Code: BPT – 802

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Marks distribution: Paper carrying 70 marks of End semester will have question in two sections – A and B

Section A: (Short answer question) Altogether 9 question will be set, each carrying 5 marks. The examines will have to answer 05 question (5 ×5 = 25)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 15 marks. The examinees will have to answer 3 questions. (15 × 3 = 45)

Paper carrying 30 marks of mid semester will have two sections – A and B

Section A: (Short answer question) Altogether 8 question will be set, each carrying 2 marks. The examinees will have to answer 05 questions (5 × 2 = 10)

Section B: (Long Answer Question) altogether of 6 questions will be set, each carrying 5 marks. The examinees will have to answer 2 questions (2 × 5 = 10). 10 marks for attendance, behaviour, seminar etc.

SECTION-I (GENERAL)

A) Principle of post surgical physical therapy management under following:
   1. Abdominal wall care
   2. Scar management
   3. Pelvic Floor Care

B) Dermatology: Physical therapy in:
   Chronic Ulcers,
   Leprosy (including Neuro-muscular complications)
   Other dermatological conditions:, burns and skin grafting

C) ENT: Physiotherapy management in- Maxillary Sinusitis, otitis media, rhinorrhoea

D) Obs. & Gynaecology: Principles of physical therapy management in an Obs. Gynae patient:
   Incontinence, Prolapse Uterus,
   Pelvic Inflammatory disease,
   Muscular - skeletal and other problems associated with pregnancy & labour, caesarean section.
   Anti natal preparatory and post natal care

E) Thrombosis, Phlebitis, Thrombo angitis obliterans, varicose veins, ulcers v l v

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PHYSIOTHERAPEUTIC IN GENERAL CONDITION

Course Code: BPT – 852

Curricular Hours: 120
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

PRACTICAL

Practical demonstration of basic principles of application of physical therapy treatment of General conditions

PRACTICAL EXAMINATION

Students will be assessed by viva & practical demonstration of application of Physical therapy based upon learning in theory.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

EIGHT SEMESTER

RESEARCH METHODOLOGY & BIO-STATISTICS

Course Code: BPT – 803

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions(1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SECTION – A

(BIOSTATISTICS)

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1) Definition – Statistics, Biostatistics
2) Applications of Biostatistics
3) Data collection from experiments & surveys.
4) Variable – Qualitative & Quantitative, Discrete and continuous.
5) Presentation of Data: -
   a) Tabular Presentation of Data – Statistical Table, Format of a Table.
   b) Frequency Distribution – construction of Frequency Distribution, cumulative and relative frequency distribution, Exclusive and inclusive method of classification of Data.
   c) Diagrammatic Presentation of Data: - Bar Diagrams, Pie Diagram, Line Diagram, Pictogram, Cartogram or Statistical map.
   d) Graphical representation of a Frequency distribution – Histogram, Frequency Polygon, Frequency curve, ogives or cumulative frequency curves.
6) Measures of central tendency or measures of Location – Mean, Median Mode in ungrouped & grouped series. Partition Values – Quartiles, Deciles, Percentiles in ungrouped & grouped series. Graphical Determination of Median, Mode & partition values.
7) Measures of Dispersion or Variation – Range, Mean Deviation, Standard Deviation.
8) Normal Distribution & Characteristics of Normal curve.

9) Correlation – Bivariate distribution, scatter diagram, coefficient of correlation, calculation & interpretation of correlation coefficient.

10) Sampling – Methods of Sampling.

11) Sampling Variability & significance – Sampling Distribution, Standard error, null hypothesis, alternative hypothesis, Type I & Type II errors, tests of significance, acceptance 7 rejection of null hypothesis, level of significance, Z test, t test (paired & unpaired), chi-square test.

12) Vital Statistics

1) Rates & ratios of vital events.

2) Measures of Mortality: - Crude Death Rate, Specific Death Rate, Age Specific Death Rate, Standardized Death Rates, Infant Mortality Rate.

3) Measures of Fertility: - Crude Birth Rate, General Fertility Rate, Specific Fertility Rate, Age Specific Fertility Rate, And Total Fertility Rate.

4) Measurement of Population Growth: - Crude Rate of Natural Increase & Pearli's Vital Index, Gross Reproduction Rate, Net Reproduction Rate.

5) Measures of Morbidity: - Morbidity Incidence Rate, Morbidity Prevalence Rate.

6) Life Tables or Mortality Table.

13) Sampling techniques: Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors, Sampling variation and tests of significance.

14). Analysis of variance & covariance: Analysis of variance (ANOVA), what is ANOVA? Basic principle of ANOVA, ANOVA technique, Analysis of Co variance(ANACOVA)

SECTION-B
(RESEARCH METHODOLOGY)

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objectives:

a) To develop skills of critical thinking and selection of research strategy.

b) To acquire skills to review literature, formulate problems, research writing and publishing.

Clinical Research for physiotherapist:

Why? How? And When?

A) Research in physiotherapy:

1. Introduction
2. Research – types, concept, definition.

3. Selection of aim and objectives.
4. Principles of methodology, analysis and report writing.

B) Concepts of Measurements:

1. Direct and indirect measurement variables.
2. Reliability and validity.
3. Application of physiotherapeutic tests and measurements.

C) Research Design:

1. Principles of designing.
2. Methods – Descriptive, Exploratory, single subject, others.
3. Design models utilized in physiotherapy.

D) Interpretation of experimental findings:

1. Collection and interpretation data theory.
2. Data review.
3. Interpretation of fundamental and clinical research.

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VINOBA BHAVE UNIVERSITY, HAZARIBAG

BACHELOR OF PHYSIOTHERAPY (BPT)

EIGHT SEMESTER

COMMUNITY REHABILITATION & DISABILITY PREVENTION

Curricular Hours: 80
Total Marks: 100
Mid Sem: 30 Marks (Time -1 ½ hours)
End Sem: 70 Marks (Time 3 hours)

Course Code: BPT – 804

Course objectives:

a) To understand the concept of Rehabilitation and team approach.

b) Principles of Physiotherapy in Rehabilitation.

c) Disability evaluation & management.

d) Application of Physiotherapy at community level.

Paper carrying 30 marks of mid semester will have two sections – A and B for each subject.

Section A: (Short answer question) Altogether 5 question will be set, each carrying 2 marks. The examines will have to answer 03 question (3 ×2 = 6)

Section B: (Long Answer Question) altogether of 3 questions will be set, each carrying 4 marks. The examinees will have to answer 1 questions(1×4=4). 10 marks for attendance, behaviour, seminar etc for whole paper.

Course Contents: All sections carry equal weightage

SECTION – A

(REHABILITATION)

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

1. Introduction of Rehabilitation & History
2. Epidemiology of disability (Impairment, disability, phases of disability process, etc.).
3. Principles of Rehabilitation & concept of team approach with rolls of each individual participant.
4. Organization of Rehabilitation unit.
5. Disability prevention evaluation & principles of Rehabilitation Management.
6. Role of Physiotherapy in Rehabilitation (Preventive, treatment & restoration)
7. Brief outline of Communication disorder & its implications on Rehabilitation process.
8. Brief outline of psychosocial & vocational aspects of Rehabilitation.
9. Introduction to Occupational therapy.
10. Activities of daily living, functional assessment & training for functional independence.
11. Brief outline of basic community medicine with special reference to community based Rehabilitation, infrastructure and role of CBR
12. Assessment of disability in rural & urban setups. Health care delivery system & preventive measures with specific reference to disabling conditions. Community education programme.

13. Application of Physiotherapy skills at community level with special reference to the need at rural level.

PRINCIPLES OF BIOENGINEERING

Full Marks -35 marks Time: – 1 ½ hours

Section A: (short question): Altogether 7 question will be set, each carrying 5 marks. The examines will have to answer 04 question (5 ×4 = 20)

Section B: (Long question): Altogether 3 question will be set, each carrying 15 marks. The examines will have to answer 01 question (1 ×15 = 15)

Objectives-at the end of the course, the candidate shall

1] -acquire knowledge about biomechanical principles, of application of variety of aids & appliances used for ambulation, protection & prevention

2] -acquire in brief knowledge about various material used for splints/orthoses & prostheses— selection criteria

3] -acquire the skill of fabrication of simple splints made out of low cost material

SYLLABUS

1] -Classification of Aids & appliances-

2] -Biomechanical principles in designing of appliances & assessment Procedures for static & dynamic alignment of the following—Aids & appliances /Splints /Orthoses -for spine-upper & lower limbProstheses- for Lower limbs,Upper limb

Project -Temporary splints –to fabricate ONE splint each - [to use P.O.P, aluminum strips sheets/wires rubber bands, rexine, Orfit etc] -1]-cock up [dorsal/volar, 2]-outrigger, 3] Opponance splint

3] -Anterior and posterior guard splints for gait training,6]- Foot drop splint 7]-Facial splint 9] Mallet Finger, Splint , 10]-C bar for 1st web space of hand

4] Introduction to Bio-Engineering; Classisfication of Orthoses and prostheses; Biomechanical principles of orthotic and prosthetic application; Designing of upper extremeity, lower extremity and spinal orthosis, indications and check out; Designing of upper extremity and lower extremity prostheses, indications and check out; Psychological aspects of orthotic and prosthetic application; prescription and designing of footwear and modifications; Designing and construction of adaptive devises.

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PROJECT WORK*

Course Code: BPT – 853

Curricular Hours: 240
Total Marks: 100
Mid Sem: 30 Marks
End Sem: 70 Marks

Course objective:

The student will be doing specific case studies allotted by their teacher/guide. Subject is for Case Presentations and evaluations.

Minimum 5- 10 cases are to be documented for discussion.

EXAMINATION

***There will be no university examination.** Students will be assessed on the basis of Viva on his/her project work and the awards so secured by them will be sent to University.