

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

Effective From: 2005-2006

AIMS AND OBJECTIVES OF THE COURSE

To educate and train the candidate to INDEPENDENTLY evaluate, assess, diagnose, prescribe, plan, and practice Physical Therapy at the end of the course.

B. Physio. 1. A candidate for the Degree of B.Physio for being eligible for admission to the College affiliated to this University must have:

- (i) Passed the Higher Secondary Examination of XII Standard in Science Stream conducted by the Gujarat Secondary Education Board or its equivalent examination conducted by recognized Board with minimum 50% marks.

OR

As prescribed by the Govt. of Gujarat from time to time.

- (ii) Completed the age of 17 Years at the time of admission or will complete 17 by 31st December of the year of his admission to the course.

B.Physio.2 The candidates for the degree of B.PHYSIO shall be required to undergo a period of certified study extending over four academic years. After a period of study extending over one academic year, a candidate on the production of necessary certificate would be entitled to appear for the First B.Physio, Examination. After passing the First B.Physio Examination a candidate can appear at the Second B.Physio Examination and so on. Only after completing the Course prescribed under relevant regulation and after completing one year. The Degree of B.Physio will not be confirmed upon a candidate unless he / she undergoes internship for a period of six months in the manner prescribed in relevant regulation, subsequent to his/ her passing the Final Examination.

B.Physio.3. Candidates desirous of appearing at any examination must forward their applications in the prescribed form to the Registrar through the Principal/ Dean of the Institution on or before the date prescribed for the purpose under the relevant ordinances.

B.Physio.4. No Candidates will be allowed to reappear at any examination in which he / she has already passed.

B.Physio.5. For the purpose of deciding Final University results at the First, Second, Third and Fourth B.Physio examination the ratio between internal and external assessment will be the same as indicated in the scheme of Examination.

B.Physio.6. RULES REGARDING INTERNAL EVALUATION FOR FIRST, SECOND , THIRD AND FOURTH B.PHYSIO EXAMINATION :

Theory: Two terminal examinations and one preliminary examination will be held for theory and practical for computing credit marks, the averaged marks of the two terminal examinations will be added to the marks of the preliminary examination.

Practical: Day-to-Day same as theory practical or viva voce marks will be used for computing credit marks.

1. (a) The result of each test shall be displayed on the Notice Board within one month after it is held.
(b) The answer – scripts of the candidate in the various tests shall be duly examined and assessed by the Examiners concerned in the college and shall be marked in ink and no marking shall be erased or defaced and no correction of marking made without corresponding initialing by the examiners to whom the work is assigned, in support of the correction.
2. (a) The result of the internal evaluation shall be placed on the college Notice Board at least 15 days before the date on which University examination commences, and any candidate who has any doubt or dispute relating this should apply to the Principal / Dean of the college within two days of the declaration of the result for internal evaluation in the subject concerned. If a mistake is found, the Principal / Dean shall communicate the amended result within three days, no amendment shall be entertained by the university, if it is received after the University Examination commences.

(b) The decision of the Principal / Dean in the internal evaluation in case of any doubt or dispute relating thereto shall, subject to the time-limit mentioned in {1} above, be final and no appeal shall be entertained thereon.
3. It shall be the duty of the college to communicate the result of internal evaluation of all the candidates whether fresh or repeaters by the prescribed date and in the prescribed manner to the University.

B.Physio 7 Standard of Passing

1. To pass the first, second, third and fourth B.Physio examination a student must obtain at least 50% marks in each of the subjects separately with a minimum of 50% theory and 50% in practical in medical and physiotherapy subjects while 36% marks in the subjects of humanity.
2. Those who have failed in THREE PAPER or less, will be allowed to take supplementary exam to be conducted 2 month after the declaration of result. Those who failed in more than THREE PAPERS are not eligible for supplementary exam and will have to take next regular exam. The student is eligible to take two regular and subsequent two supplementary exams only. There after he/she is not eligible to continue further.

3. ATKT AND SUPPLEMENTARY EXAMINATION

- (A) Those who have failed in three or less than three papers will be allowed to take supplementary examination only in those paper(s) in which he/she has failed.
- (B) Those candidates who have failed in more than three papers are allowed to take next annual examination along with subsequent batch of students only in failed papers and marks of passed papers will be retained as such.
- (C) Those candidates who have kept the term but could not take annual examination due to ill health, accident or any other extreme reason can appear for supplementary examination along with ATKT examination provided that candidate has cleared in internal examination and has necessary 80% attendance.

4. DETERMINATION OF CLASS

- (A) Those who secure less than 60% in aggregate, will be classified as Pass class.
- (B) Those who secure 60% or more in aggregate and pass all the subjects in first attempt will be classified as First class.
- (C) Those who secure 75% or more in aggregate and have passed all the subjects in first attempt will be classified as First class with Distinction.
- (D) Getting 50% marks in internal examination is not mandatory to pass the examination. If the sum of marks in a paper in internal plus external marks secured is 50% or more, the candidate shall be declared passed in that paper, i.e. in medical and physiotherapy subjects.

Similarly, 36% aggregate is also sufficient to pass in humanity subjects i.e. Psychology, Sociology, English.

- (E) Classification of pass class, first class and distinction class shall be done every year in annual regular examination.
- (F) If a candidate takes more than one attempt to pass any of the papers of a particular academic year, he/she shall be classified only as Pass class.
- (G) Psychology, Sociology and English are Humanity subjects in the first year, in which 36% marks are required to be declared passed and marks of these subjects will not be taken in to account to calculate the Percentage or class.
- (H) The grace marks up to a maximum of five marks may be awarded by The University to a student, who has failed in a subject/subjects of a single paper (section I/II), five marks may be divided in two subjects either in theory or practical but has passed in all other papers.

B.PHYSIO.8.The paper(s) in which successful candidates may have got a distinction will be shown on the list. In order to obtain distinction in any year, the candidates should pass the examination at the first attempt in all the paper(s). Only those candidates who have passed the whole examination at the first attempt will be eligible for distinction or for any prize or scholarship to be awarded at the examination.

B.PHYSIO.9.

Carry over system

1. A candidate can carry over maximum of three papers to next academic year.
2. If a candidate passes in one or two paper in supplementary examination of three failed papers of an academic year or fails in all three papers again, he/she can take up the failed paper(s) again along with next academic year examination; that means one can take –
 - (a) Maximum three first year paper(s) along with second year annual examination.
 - (b) Maximum three second year paper(s) along with third year annual examination.
 - (c) Maximum three third year paper(s) along with fourth year annual examination.
3. A candidate can not carry over first year paper(s) to third year; and 2nd year paper(s) to 4th year.

B. PHYSIO .10. GUIDELINES FOR INTERNSHIP

After the successful completion of first year, second year, third year and final year the student has to undergo a compulsory rotating internship for a period of six months. The concerned college authority shall do the posting of successful candidates for internship within fifteen days of declaration of results of final year exams. During the internship period the student is entitled to six casual leaves.

If a student wants to do internship outside Surat in Gujarat; or in some other state in India; or abroad, he/she has to obtain an NO OBJECTION CERTIFICATE from the VNSG University, Surat after getting the recommendation from the PRINCIPAL and Dean (Medical) and NOC from that hospital where he/she wants to do the internship.

Hospital, where the candidate wants to do the internship must have at least 100 beds and it should be a multi-specialty hospital.

Note: This syllabus will be applicable from academic year 2005-2006.

This syllabus is not applicable for previous batches of B. Physio of this university.

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Subjects during the four-year study of B. Physiotherapy:

First year:

- (1) Human Anatomy
- (2) Human Physiology
- (3) Psychology & Sociology
- (4) Fundamentals of Bio- Medical physics
- (5) Exercise Therapy - I & Soft tissue manipulations
- (6) English

Second year:

- (1) Pathology & Microbiology
- (2) Pharmacology & Biochemistry
- (3) Exercise Therapy II & Exercise Physiology
- (4) Electro Therapy I
- (5) Electro Therapy II
- (6) BioMechanics & Kinesiology

Third year:

- (1) Medicine I (General Medicine, Pediatrics and Dermatology)
- (2) Medicine II (Neurology, Obstetrics and Gynecology)
- (3) Surgery I (General Surgery, Plastic Surgery and Cardio thoracic)
- (4) Surgery II (Orthopedics – Traumatology and Non Traumatology)
- (5) Biostatistics and Research methodology

Fourth Year:

1. Physiotherapy in Neuromuscular Conditions
2. Physiotherapy in Cardiopulmonary Conditions
3. Physiotherapy in General Medical & Surgical Conditions
4. Physiotherapy in Rehabilitation
5. Physiotherapy in Musculoskeletal conditions

Following subjects are not university exam going but must be included in the curriculum and taught:

1. Radiology & ENT (3rd year)
2. Ophthalmology and Psychiatry (3rd year)
3. Ethics, Administration and Management (4th year)
4. Computer science (internship)

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BACHELOR OF PHYSIOTHERAPY (B. Physio)

First Year

2005-2006

Structure of Question paper for subject Human Physiology, Anatomy, Psychology (section 1) & Sociology (section 2), Bio Medical Physics, Exercise Therapy-I & STM.

Examination Weight age: 70 marks

Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question	8
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	8
QUESTION:4: Very Short notes (3 out of 5)	9

TOTAL: 35

SECTION – II

QUESTION: 1: Full Question	8
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	8
QUESTION:4: Very Short notes (3 out of 5)	9

TOTAL: 35

Structure of question paper for English

Examination Weight age: 35 marks

Internal Assessment: 15 marks

TOTAL MARKS 70

QUESTION: 1: Full Question	17
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Notes (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	08

TOTAL: 35

VEER NARMAD SOUTH GUJARAT UNIVERSITY

**BACHELOR OF PHYSIOTHERAPY
(EFFECTIVE FROM ACADEMIC YEAR-2005-2006)**

F.Y.B.PHYSIO

1. **Human Anatomy**

Theory	70 (3hrs.)
Internal Assessment	30
Practical	70
Internal Assessment	30

2. **Human Physiology**

Theory	70 (3hrs.)
Internal Assessment	30
Practical	70
Internal Assessment	30

3. **Psychology & Sociology**

Psychology	Theory	35
	Internal Assessment	15
Sociology	Theory	35
	Internal Assessment	15

(Combined Psychology & Sociology 70 marks, duration 3 hrs.)

4. **Fundamentals of Bio-Medical Physics**

Theory	70 (3hrs.)
Internal Assessment	30

5. **Exercise Therapy-I & Soft tissue Manipulations**

Theory	70 (3hrs.)
Internal Assessment	30
Practical	70
Internal Assessment	30

6. **English**

Theory	35 (1&1/2 hrs.)
Internal Assessment	15

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FIRST YEAR

RECOMMENDED LIST OF BOOKS FOR ALL FOUR YEAR OF B.PHYSIOTHERAPY

SUBJECT: HUMAN ANATOMY

<u>No.</u>	<u>Name of books</u>	<u>Name of author</u>	<u>Type</u>
1.	Human Anatomy	B.D.Chaurasia	Text
2.	Practical Human Anatomy	Cunningham	Text
3.	Grays Anatomy		Reference
4.	ELBS atlas of human anatomy		Reference

SUBJECT: HUMAN PHYSIOLOGY

1.	Concise Medical Physiology	S.Chaudhary	Text
2.	Guyton's Physiology		Reference
3.	Ganong's Physiology		Reference

SUBJECT: PSYCHOLOGY & SOCIOLOGY

1.	Text book of Psychology	Mann & Morgan	Text
2.	Psychology	Atkinson	
3.	Psychology for physiotherapists	Ramalingam A. T. & Bid D. N.	
1.	Text book of Sociology	Vidhya Bhushan	Text
2.	Sociology For Physiotherapists	Bid Dibyendunaryan	Text

SUBJECT: FUNDAMENTALS OF BIO MEDICAL PHYSICS

1.	College Physics (3 rd edition)	Sears Lewansky	Text
2.	Physics Part 1 & 2	Robert Resnik & David Halliday	Text

SUBJECT: EXERCISE THERAPY-I AND SOFT TISSUE MANIPULATION

1.	Exercise therapy	Dena Gardiner	Text
2.	Practical Exercise therapy	Margaret Hollis	Text
3.	Tidy's Physiotherapy	Porter	Reference
4.	Aids to Physiotherapy	Lee	Reference
5.	Massage Manipulation	Margaret Hollis	Text
6.	Bird's Massage		Reference
7.	Measurement to joint motion. Guide to Goniometry	Norkins & White	Text

SUBJECT: ENGLISH

<u>No.</u>	<u>Name of books</u>	<u>Name of author</u>	<u>Type</u>
1.	Current Prose for better learning	Vimala Rama Rao	Text
2.	Living English Grammar And Composition	M.L.Tickoo, A.E.Subramaniam P.R.Subramaniam	Text

HUMAN ANATOMY

Note : Emphasis to be placed on topographical, Skeletal, Neuromuscular and functional aspects of anatomy, Students must take part in dissections to identify various structures.

General Introduction:

1. Definitions, terms and Subdivisions.
2. Plan of the human body.
3. System of the body.
4. The unit of structure and function – the cell.

Osteology:

1. Terminology: Anatomical position, planes, surface relationship of parts of the body- proximal, distal etc.
2. Bones: Type of bones, formation, function, growth and repair, structure of long bone, vertebral, column, types of vertebrae, bones of extremities and bony landmarks.

Arthology :

1. Classification of joints.
2. Construction of joints.
3. Motions of joints.
4. Articulation – Articular Surfaces, types of joints, motions of upper of and lower extremities, trunk & head.

Myology :

1. Types of muscle tissue.
2. Muscles of upper extremity, lower extremity, trunk, eye, face etc. Origin, Insertion, nerve supply and actions (in detail).

Cardiovascular System:

1. Blood, lymph, tissue fluid – characteristics, composition, function.
2. The heart- main arteries, Veins, capillaries.
3. Lymph circulation.

Nervous System:

1. Division and function of the nervous system.
2. Nerve tissue – neuron, nerve fiber, synapse, end organs etc.
3. Spinal cord, Brain – their structures, divisions.
4. Peripheral and cranial nerves and their distribution, special emphasis on nerve supply to voluntary muscles, segmental distribution.
5. Cerebrospinal fluid.
6. Sensory end organs and sensation.
7. Autonomic nervous system – sympathetic, parasympathetic.

Respiratory System :

1. Anatomy of respiratory organs – air passages, lungs, bronchial tree etc. Relation with diaphragm and thoracic cage.

Digestive System :

1. Anatomy of digestive organs- esophagus, stomach, intestine, rectum etc.
2. The digestive glands.

Urinary System :

1. Anatomy of urinary organs- kidneys, ureter, urinary bladder etc. Emphasis on types of bladder in paraplegics.

Endocrine System :

1. Glands, secretion, enzymes, hormones.

Reproductive System :

1. Outline of reproductive system-male and female reproductive organs.

Special sensory organs and sensations:

1. Emphasis on Skin, ear and eyes, less detail on smell and taste.

Histology :

1. Cell, tissues of the body epithelium, connective tissue, cartilage, bone, blood, lymph, muscles and nerves.

General Embryology :

1. Ovum, spermatozoa, fertilization, differentiation, development of musculoskeletal system, central nervous system.

Practical Work:

Dissection: Dissection of upper and lower extremities, back, anterolateral abdominal wall. Identification and description of all anatomical structures surface marking.

HUMAN PHYSIOLOGY

General Physiology :

1. Cell Structure and organelle.
2. General Principles of Biophysics.
3. Body Fluid compartments.

Blood :

1. Composition of blood, plasma, protein formation and their function.
2. Structure formation and functions of R.B.C.
3. Structure formation and functions W. B. Cs. and platelets.
4. Coagulation and its defects - bleeding & clotting time.
5. Blood groups and their significance Rh. Factor.
6. Reticulo endothelial system, Jaundice, Structure and functions of spleen.
7. Hemoglobin and E.S.R.

Cardiovascular System :

1. Structure ,properties of Heart muscle and nerve supply of heart, structure and function of arteries, capillaries and veins.
2. Cardiac cycle and heart sounds.
3. Cardiac output measurement, factors affecting it.
4. Heart rate and its regulation, cardio vascular regulation.
5. Blood pressure its regulations and physiological variations.
6. Peripheral resistance, factors controlling, role in B.P.
7. Hemorrhage.
8. Changes in muscular exercise.

Respiratory System:

1. Mechanism of respiration, Intra-pleural and intra pulmonary pressure.
2. Lung volumes and capacities.
3. O₂ and CO₂ carriage and their exchange in tissues and lungs.
4. Nervous & chemical regulation of respiration – Respiratory centers, Respiratory state – Anoxia, Asphyxia, Cyanosis, Acclimatization.

Digestive System :

1. General outline and salivary digestion.
2. Gastric secretion and its mechanism of secretion and functions.
3. Mechanism of secretion of succus entericus and pancreatic juice and its functions.
4. Structure, Secretions and Functions of liver.

Nutrition :

1. Digestion, absorption and metabolism of carbohydrates.
2. Digestion, absorption and metabolism of fats.
3. Digestion, absorption and metabolism of proteins.
4. Vitamins, sources, functions and resources.
5. Balanced diet in different age group and occupation.

Endocrine system :

1. Anterior pituitary
2. Post Pituitary and parathyroid.
3. Thyroid.
4. Adrenal Cortex.
5. Adrenal Medulla, Thymus.
6. Pancreas and Blood sugar Regulation.

Reproductive System :

1. Sex determination and development, puberty.
2. Male sex hormones and their functions, spermatogenesis.
3. Female sex hormones and functions, menstrual cycle, ovulation and contraceptives.
4. Pregnancy, functions of placenta and lactation.

Excretory System :

1. Gross and minute structure of kidney and features of renal circulation.
2. Mechanism of formation of Urine, G.F.R. and Tubular function.
3. Renal function tests.
4. Physiology of micturition.

Neuro Muscular Physiology :

Muscle and Nerve :

1. Structure of neurons, membrane potential and generation of action potential.
2. Nerve impulse conduction, saltatory conduction.
3. Neuromuscular junction and drugs acting on it – Myasthenia gravis.
4. Degeneration and regeneration in peripheral nerves – Wallerian degeneration, electro tonus and flagers law.

Muscle:

1. Type of muscles and their gross structure, stimulus, Chronaxie, strength duration curve.
2. Structure of Sarcomere – basis of muscle contraction, Starlings law, changes during muscle contraction.
3. Electrical – Biphasic and monophasic action potentials.
4. Chemical, Thermal and physical changes isometric & isotonic contraction.
5. Motor units and its properties. Clonus, tetanus, all or none law, beneficial effect.
6. Nature of voluntary contraction ,fatigue.

Nervous System:

1. Types and properties of receptors, types of sensations.
2. Structure of synapse, reflex arc and its properties, occlusion summation, sub minimal fringe etc.
3. Tracts of spinal cord.
4. Descending tracts, pyramidal and extra pyramidal tracts.
5. Hemi section and complete section of spinal cord. Upper and lower motor neuron paralysis.
6. Cerebral Cortex, areas and functions – E.E.G.

7. Structure, connections and functions of cerebellum.
8. Basal ganglia and thalamus, connections and functions.
9. Reticular formation, tone, posture and equilibrium.
10. Autonomic Nervous System.

Special Senses:

1. Broad features of eye, errors of refraction, lesions of visual pathways.
2. Speech and its disorders.
3. Ear and vestibular apparatus.

Practical & Demonstrations:

- A.**
1. Haemoglobinometer and total R.B.C. Count.
 2. Total W.B.C.Count.
 3. Preparation and staining of Blood smears, determination of differential W.B.C.Count.
 4. Blood Grouping.
 5. Erythrocyte Sedimentation rate.
 6. Bleeding and clotting time.
- B.**
1. Artificial Respiration.
 2. Pulmonary function tests.
- C.**
1. Heart Sounds.
 2. Arterial Blood pressure in man.
 3. Cardiac Efficiency tests.
 4. Recording and study of Electrocardiogram.
- D.**
1. Testing of peripheral sensations and cranial nerves.
 2. Superficial and deep reflexes.
 3. Tests of Cerebral and Cerebellar functions.
- E.** Varieties of stimuli, electrical apparatus for physiological experiment.

Frogs Nerve- muscle preparation and demonstration of the following experiments on it

:

Simple muscle twitch .

Effect of load, temperature and fatigue on muscular contraction
Frog's normal cardiogram.

Effect of following on normal cardiogram of Frog :

1. Temperature.
2. Extra systole.
3. Stimulation of vagosympathetic trunk.
4. Radial pulse tracing.
5. Basal metabolic rate.
6. Work physiology.

PSYCHOLOGY

1. Introduction to psychology – definition application – schools of psychology – methods of psychology – scope of psychology
2. Heredity and environment – sex determination – twins- mechanism – influences on the individual
3. Developmental Psychology – Definition – stages of life span- behavioral changes during development
4. Sensation, attention and perception- Basic senses – factors determining attention – principles of perception – errors in perception
5. Motivation – definition – motivational cycle- types of motives – theories of motivation – frustration and conflicts
6. Emotion and stress – definition- psychological and physiological changes during emotion – theories of emotion – management of stress (in Brief)
7. Thinking – Definition – types- steps in creative thinking – concept formation
8. Intelligence – Definition – theories of intelligence – intelligence tests
9. Memory – theories of memory – forgetting process – methods to improve memory
10. Learning – Definition – theories of learning methods of learning
11. Personality – Definition – personality development – classification – theories of personality – personality assessment – defense mechanisms
12. Social psychology – Definition – nature and scope of social psychology – attitude and attitude change – leadership styles
13. Communication – types – effective ways of communication / teaching
14. Pain psychology – define pain – physiology of pain- psycho – social factors of pain – pain management (Psychological methods)
15. Abnormal psychology – definition – classify psychological disorders (in brief) psycho somatic disorders – psycho therapy and counseling.

SOCIOLOGY

The subject will introduce the student to the basic sociological concepts, principles and social processes, social concepts, principles and social processes, social institutions in relation to the individual, family and community, and the individual, family and community, and the various social factors affecting the family in rural and urban communities.

Introduction:

1. Meaning - Definition and scope of sociology.
2. Its relation with anthropology, psychology,
3. Methods of sociology - Case study, social survey, questionnaire, interview and opinion poll methods.
4. Importance of its study with special reference to health care professionals.

Social factors in Health and disease:

1. The meaning of social factors.
2. The role of social factors in health and illness.

Socialization:

1. Meaning and nature of socialization.
2. Primary, secondary and anticipatory socialization.
3. Agencies of Socialization.

Social Groups:

1. Concepts of social groups , influence of formal and informal groups on health and sickness. The role of primary groups and secondary groups in the hospital and rehabilitation settings.

Family:

1. The family.
2. Meaning and Definition.
3. Functions.
4. Types
5. Changing family patterns.
6. Influence of family on the individual's health, family and nutrition, the effects of sickness on family and psychosomatic disease and their importance to physiotherapy.

Community:

1. Rural community - Meaning and features - Health hazards of ruralites.
2. Urban community - Meaning and features - Health hazards of Urbanites.

Culture and Health:

1. Concept of culture.
2. Culture and behavior.
3. Culture meaning of sickness.
4. Culture and Health Disorders.

Social Change:

1. Meaning of social changes.
2. Factors of social change.
3. Human adaptation and social change.
4. Social change and stress.
5. Social change and deviance.
6. Social change and health programme.
7. The role of social planning in the improvement of health and in rehabilitation.

Social Problems of Disabled:

Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems.

1. Population explosion.
2. Poverty and unemployment.
3. Beggary.
4. Juvenile delinquency.
5. Prostitution.
6. Alcoholism.
7. Problems of women in employment.

Social security:

Social security and social legislation in relation to disabled.

Social Worker:

Meaning of social work. The role of a medical social worker.

EXERCISE THERAPY – I

SECTION-I

1. Introduction to exercise therapy.
2. Physiological effects and uses of exercise.
3. Psychogenic aspects of exercises.
4. Pharmacological aspects of exercises.
5. Use of apparatus in exercise therapy.
6. Fundamental starting Positions derived position- effects and uses, pelvic tilt.
7. Muscle work for all positions.
8. Joint movement - terminology and range, axes and planes of movement, levers, measurement of joint movements, goniometry, types of goniometers- bubble and gravity goniometers.
9. Classification of movements.
10. Active movements- Definition, types, techniques, effects and uses.
11. Passive movement - Definition, types, techniques of relaxed passive movement and uses, comparison of both movements.
12. Causes of restriction of range of movement - Distinguish between skin, muscle, and capsular contractures.
13. Group work - Criteria of selection of patients, advantages and disadvantages of group class exercises.
14. Home exercise - trick movements.
15. Suspension therapy - definitions of suspension and point of suspension, type of suspension, pulleys and use of pulley in suspension therapy, application of suspension therapy either to increase the joint range or to increase muscle power.
16. Breathing - Mechanism of breathing (normal), muscles of respiration, changes in thoracic cage during process of respiration, types of breathing exercise, training programme- diaphragmatic and segmental breathing.
17. Pursed lip breathing - significance.
18. Crutch walking - Types of crutch walking, use of parallel bars in pre - crutch walking stage, balance exercises, phases of walking, gait training, group of muscles responsible during crutch walking.
19. Progression in crutch walking, measurement of crutches, other walking aids- canes, crutch-walking on even surface, slope, climbing up the stair-case.

SECTION-II

20. Measurement of limb length, methods of measurements.
21. Application of resistance to develop endurance and power, progression of exercises, angle of pull, types of muscle work, exercises-free, resisted, assisted-use of gadget apparatus.
22. Resisted Exercises: Techniques and types of resistance, SET system (Heavy resisted exercises) Oxford Method, Delorme Method, McQueen's Method).
23. Free Exercises - Classification, technique, and effects of free exercises-application for shoulder, neck, hip and knee joints, techniques of mobilization for stiff joints.
24. Mat exercises re-education of balance, strength, and endurance.
25. Posture - definition, types, factors influencing posture, postural training.
26. Maintenance of record - volume, range of motion, resistance, limb length.

SOFT TISSUE MANIPULATION

27. Introduction- brief history, definition, classification. Physiological effects and therapeutic uses, contraindications.
28. Preparation of patient, basic points to be considered before and during massage procedure.
29. Technique, effects and uses of each manipulation.
30. Massage for arm, leg, neck, and upper back & face.
31. Massage for edema, scar, tendinitis, fibrosis (tight fascias)
32. Mobilization of soft tissues, joints and fluid collection.

English

(I) "Current Prose for Better Learning" : Edited by Vimala Rama Raw Macmillan India Limited (1982) All lessons (Except lesson No. 12) of above text should be exclusively taught as an intensive course during the first term.

(II) " Living English Grammar and Composition "M.L.Tickoo, A.E.Subramanian, P.R.Subramanian, Orient Longman (1998)

Following parts of the above text should be taught in the second term:

Articles: (Ch-2) Primary Auxiliaries and Model Auxiliaries (Ch-6) The tenses form and use (Ch-10) Negative and interrogative Sentences (Ch-11), The passive Voice (Ch-12): Direct and indirect speech (Ch-14)

Composition: Letter Writing & Essay Writing.

Note: Distribution of marks for the University Examination will be as under:

1. Short Answer type Questions	6 Marks.
2.General Questions	7 "
3. Short notes	5 "
4. Comprehension & Précis	3 "
5. Letter Writing: Formal Letter of request complaints, inquiries	5 "
6. Essay	4 "
7. Grammar	5 "

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

Second Year

2005-2006

Structure of question paper for Electrotherapy I, Electro therapy II, Pharmacology (section 1) & Biochemistry (section 2), Pathology (section 1) & Microbiology (section 2)., Biomechanics & Kinesiology, Exercise therapy -II & Exercise Physiology.

Examination Weight age: 70 marks

Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question	8
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	8
QUESTION:4: Very Short notes (3 out of 5)	9

TOTAL: 35

SECTION – II

QUESTION: 1: Full Question	8
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	8
QUESTION:4: Very Short notes (3 out of 5)	9

TOTAL: 35

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

SECOND YEAR B. PHYSIO

1. **Pathology & Microbiology**

Pathology	Theory	35
	Internal Assessment	15
Microbiology	Theory	35
	Internal Assessment	15

(Combined paper Pathology & Microbiology 70 marks, 3 hrs. duration)

2. **Pharmacology & Biochemistry**

Pharmacology	Theory	35
	Internal Assessment	15
Biochemistry	Theory	35
	Internal Assessment	15

(Combined paper Pharmacology & Biochemistry 70 marks, 3 hrs. duration)

3. **Exercise-Therapy II & Exercise Physiology**

	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30

4. **Electrotherapy-I**

	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30

5. **Electrotherapy-II**

	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30

6. **Biomechanics & Kinesiology**

	Theory	70 (3 hrs.)
	Internal Assessment	30

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

SECOND YEAR

SUBJECT: PATHOLOGY & MICROBIOLOGY

<u>No.</u>	<u>Name of books</u>	<u>Name of author</u>	<u>Type</u>
1.	Text book of Pathology	Harsh Mohan	Text
2.	Text book of Pathology	S.K.Biswas	Text
3.	Basics of Pathology	Robbins and Kumar	Text
4.	Clinical Pathology & Clinical Bacteriology	K.N.Sachdev	Reference
5.	Medical Parasitology	Rajesh Bhatia	Reference
6.	Modern Immunology	A.Dasgupta	Reference
1.	Medical Microbiology	Cruik Shank	Text
2.	Essentials of Microbiology	Jochu Panicker & Rajesh Bhatia	Reference

SUBJECT: PHARMACOLOGY & BIO CHEMISTRY

1.	Essential of Medical Pharmacology	K.D. Tripathi	Text
2.	Text book of Medical Bio-Chemistry	Chatterjee and Shinde	Text

SUBJECT: EXERCISE THERAPY II AND EXERCISE PHYSIOLOGY

1.	Therapeutic Exercise	Kisner and Colby	Text
2.	Goniometry Practice	Norkin and white	Text
3.	Manual of muscle testing	Daniel	Text
4.	Manual of muscle testing	Kendall	Text
5.	Exercise Physiology	MacArdle	Text

SUBJECT: BIOMECHANICS & KINESIOLOGY

1.	Joint structure and function	C.Norkin	Text
2.	Clinical Kinesiology	Wells and Lutgens	Text
3.	Clinical Kinesiology	Smith and Weiss	Text
4.	Brunnstorms Clinical Kinesiology	Smith and Weiss	Text

SUBJECT: ELECTROTHERAPY I & II

1.	Electro therapy explained	Low and Reed	Text
2.	Electro therapy practice	Joseph Khan	Text
3.	Claytons Electrotherapy	Clayton	Text
4.	Treatment with interferential current	Nikolova	Reference
5.	Practice of Laser therapy in PT	Dexter	Reference
6.	Clinical Electro therapy	Nelson	Reference

BIO- MEDICAL PHYSICS

Physics and properties of Matter:

Machines - Principle of work, Definition, Mechanical advantage,. Lever, pulley and three systems of pulley, wheel and axle. Fluid mechanics- viscosity, definition, co-efficient of viscosity, poise critical velocity, principle of Archimedes, law of floatation Hydrostatic pressure- surface tension, buoyancy, streamline flow and turbulent flow, effect of temperature and pressure on viscosity, surface tension, excess pressure in spherical liquid drop. Friction - Limiting friction, laws of static and dynamic friction, friction - necessity and evil, physical properties of water. Elasticity- only definition.

Heat:

Emissive and absorptive power-properties of thermal radiation, perfectly black body, kichoff's law, Newton's law of cooling and specific heat by cooling and specific heat by cooling, first law of thermodynamics and its application, second law of thermodynamics, Grothus law, joule's law of heat production.

Sound:

Newton's formula for velocity of sound, Medle's experiment, resonance and velocity of sound by resonance method, Ultrasonic- production and its application, recording and reproduction of sound.

Light:

Absorption and Emission spectra, classification of emission spectra sole spectrum and Fraunhoffer lines, infrared spectrum and ultra violet spectrum. Interference ,laser and its application.

Electricity:

Different types of capacitors, biological cell as capacitor, ohm's law, thermo electricity chemical effect of current and electromagnetic induction - faraday's law, Fleming right hand rule, self induction, mutual induction, induction coil, induced E.M.F. in the coil rotating in magnetic field, transformer long distance transmission, measurement of A.C./D.C., Modified current, milliammeter, voltmeter, Jack coil, variable rheostat.

Modern physics:

Structure of atom (Bohr model), infra red rays, ultra violet rays and lamp short wave diathermy, electric shock, radio active isotopes and medical applications of isotopes,

Electronics:

Semi conductor, diode as rectifier, amplifier, production of high frequency of current (micro-wave) by klystron magnetron. Amplifier C.R.O. triode as amplifier, triode as oscillator,

PATHOLOGY

1. Introduction: Aims and objects of study of pathology .Definitions of health, disease, causes of disease, methods of study of disease.
2. Reversible and Irreversible Cell Injury: Cellular adaptation - hypertrophy, hyperplasia, and atrophy.
3. Acute Inflammation: General morphology, phenomenon of acute inflammation.
4. Repair of wound, fractures, skin, nerves, and muscles.
5. Chronic inflammation: Osteomyelitis, tuberculosis (lung, bone), leprosy, and syphilis.
6. Fluid and hemodynamic disturbances: edema, thrombosis embolism infarction.
7. Neoplasia: General outline, classification, characteristics of benign and malignant tumors, and spread of tumors, systemic effects.
8. Disorders of joints: Rheumatoid arthritis, osteoarthritis, hemarthrosis, gout.
9. Immunity and hypersensitivity.
10. Hematological disorders: Anemias, hemophilia.
11. Respiratory disorders: Suppurative lung diseases, bronchial asthma, and emphysema.
12. Diseases of nervous system: Poliomyelitis, cerebrovascular accidents, and hydrocephalous
13. Diseases of muscles: Myasthenia gravis, myopathies, amyotonia congenita, the genetically determined neuromuscular diseases.
14. Diseases of C.V.S.: A brief outline of heart diseases, infective endocarditis, ischemic heart disease, Diseases of blood vessels - Buerger's disease, T.A.O., Thrombophlebitis, atherosclerosis.

MICROBIOLOGY

General Bacteriology:

1. Introduction, historical Background, classification of micro-organisms.
2. Morphology of bacteria.
3. Staining of bacteria.
4. Sterilization.
5. Culture media.

Systemic Bacteriology:

1. Gram positive cocci-strepto cocci, staphylococci.
2. Gram negative cocci – gonococci and meningococci.
3. Gram positive bacilli.
4. Gram negative bacilli- typhoid, cholera, dysentery.
5. Aerobic – diphtheria, tuberculosis, leprosy.
6. Anaerobic – tetanus, gas gangrene, botulism.

Immunology:

1. Immunity, antigens. antibodies
2. Antigen - antibody reactions.
3. Agglutination, precipitation.
4. Hypersensitivity reactions.

General virology:

1. Poliomyelitis
2. Rabies.
3. Demonstration of tests in:
 - Diagnosis of AIDS.
 - Diagnosis of hepatitis.
 - Diagnosis of syphilis.

Parasitology:

1. Malaria.
2. Amoebiasis.
3. Round worm and Hookworm.

Mycology:

1. Candidiasis, Ringworm, scabies.

BIO-MECHANICS AND KINESIOLOGY

SECTION-A

Unit -I Basic concept in Biomechanics

Unit -II- Joint structure & function

Unit -III- Muscle structure and function

Unit -IV- The vertebral column

Unit -V- The thorax and chest wall

Unit -VI- The temporo-mandibular joint

Unit -VII- The shoulder complex

Unit -VIII- The elbow complex

Unit -IX- The wrist and hand complex

SECTION- B

Unit-X- The hip complex

Unit -XI- The knee complex

Unit -XII- The ankle and foot complex

Unit -XIII- Posture

Unit- XIV- Gait

ELECTRO THERAPY – I

Electromagnetic Waves:

Electromagnetic spectrum, physical properties of electromagnetic radiations of reflection, refraction, absorption, penetration, grothus law, inverse square law and its practical application.

Infra Red Rays:

Production of infra red rays, luminous and non luminous generators, penetration, technique of application, physiological effects and therapeutic uses of infra red rays, duration and frequency of treatment, indications and contraindications, dangers and precautions.

Ultra Violet Rays:

Production of U.V.R., mercury vapor lamps (Kromayer lamp). Fluorescent tubes for U.V.R. production (Alpinesun lamp), Theraktin tunnel and PUVA apparatus.

Physiological effects of U.V.R. (Chemical reactions with skin).

Structure of skin, penetration and absorption of U.V.R. Erythema, different degrees of erythema, test dose, technique to find out the test dose and its importance.

Technique of application of U.V.R. in local and general irradiation, specific conditions like psoriasis, acne, alopecia, and indolent wounds.

Technique of applications using accessories.

Filters, sensitizers.

Dangers and contraindications.

Cold Therapy:

Physiological effects and therapeutic uses of ice therapy, techniques of application, contra-indications to ice treatment.

Hydrotherapy:

Properties of Water. Buoyancy, effects of buoyancy on movement, Hubbard tank, contrast bath.

Paraffin Wax Bath: Structure of the bath, composition of wax and mineral oils, physiological effects and therapeutic uses of wax bath.

Other Heating Modalities: Heating pad, Moist Heat.

High Frequency Current:

Short wave Diathermy: Introduction, Physiological effects and Therapeutic effects of SWD, Methods of application (capacitor field method and cable method etc.), Techniques of application, indications, contra-indications and dangers.

Pulsed SWD: Definition, characteristics, mechanism of work, physiological effects & Therapeutic effects, Indications, Technique of application, principles of treatment and contra-indications.

Microwave Diathermy: Introduction and characteristics, physiological effects,

Therapeutic effects, Techniques of application and principles of treatment, Dangers & contraindications of microwave diathermy.

LASERS: Introduction and characteristics, effects on tissue, Therapeutic effects, principles of application, indications, contraindications and dangers.

Ultrasonic Therapy: Introduction and characteristics, U.S.therapy parameters, Coupling media, Therapeutic effects, Indications, contra-indications and dangers, Testing of apparatus, Techniques of application & dosage.

ELECTRO THERAPY – II

Low Frequency currents:

Nerve muscle physiology: resting potential, action potential, motor unit, synapse and synaptic transmission of impulse. Effect of negative and positive electrodes on nerve & accommodation.

Faradic Current: Definition, characteristic and modified faradic current, sinusoidal current, Parameters of faradic stimulation, physiological and therapeutic effects of faradic-stimulation, Indications, contraindications and precautions, Techniques of stimulation, Group muscle stimulation, faradic foot bath, faradism under pressure and pelvic floor muscle re-education.

Galvanic Current: Introduction & Characteristics, Parameters of stimulation, Physiological and therapeutic effects of stimulation, Indications and Contraindications, Principles of treatment and techniques of stimulation, precautions.

Iontophoresis: Definition, principles of iontophoresis, physiological and therapeutic effects, indications, techniques of iontophoresis, principles of treatment, contra-indications and dangers.

TENS: Definition, pain gate theory, Theories of pain modulation, principle of TENS treatment, Techniques of treatment, indications and contraindications.

Medium Frequency Current:

Interferential Current: Definition, characteristics, physiological & therapeutic effects of I.F. current, Indications, Techniques of application, Contraindications and Precautions.

Bio-Feed Back:

Introduction, principles of Bio-feed back, Therapeutic effects of bio-feed back, Indications and contraindications, Techniques of treatment.

Advanced Electrotherapy:

Computerization in electrotherapy, programming of parameters of treatment appropriate selections of parameters and combination in therapy combined therapy – Principles, therapeutic uses and indications like, U.S. therapy with simulation or TENS etc.

EXERCISE THERAPY – II

SECTION-I

1. **Passive Movements:** Definition, types, technique, effects and uses, CPM unit, comparison of passive movements with active movements, practice of passive movements for all joints of extremities, neck and trunk.

Stretching: Definitions related to stretching, types of contra cures and differentiation, properties of soft tissues affecting elongation, mechanical characteristics of non contractile soft tissues, stress-strain curve, therapeutic methods of stretching - manual and mechanical stretching, cyclic mechanical stretching, indication and aims of stretching, principles of stretching and contra-indications.

Traction: Types, effects, principles of application for cervical and lumbar spine, traction to soft tissues of joints- gliding movements.

2. **Mobilization:** Causes of restriction of range of movements, prevention of restrictions, techniques of mobilization of various joints of limbs, assistance to mobilize joints. ROM through functional diagonal, patterns. Joint mobilization manipulations definition, types, joint shapes, types of motion arc stretching, glide stretching, compression, traction, indications, contra-indications and precautions, conditions for special precautions.

3. **Manual muscle testing:** Need of MMT, Fundamental principles, anatomical and physiological bases of muscle testing, oxford scale of muscle gradation, principles of isolation, substitution, stabilization, grading procedure for muscles of arm, leg, neck and truck.

4. **Breathing exercise and Postural drainage:** Breathing mechanisms and postural drainage, normal mechanism of respiratory diseases, control of breathing, pursed lip breathing, postural drainage assistive measures, techniques, indications, and contra-indications.

5. **Posture:** Types, factors influencing posture, regulation of postural reflex mechanism, pelvic tilt, and postural deviations of spine and treatment.

6. **Strengthening of muscles:** Principles involved to prevent muscle wasting, Rood's techniques, initiating of muscle contraction, progressive strengthening of muscles, (Load assisted and load resisted exercise) use of equipments, re-education of muscles and restoration of limbs, neck, truck and face. Emphasis on hand and foot muscles, quadriceps, glutei, calf,

triceps, deltoid and face muscles. Use of manual and mechanical resistance, contra-indications to resisted exercises. Isometric- isokinetic regime.

7. **Proprioceptive Neuromuscular facilitation:** Introduction, response of neuromuscular mechanism, basic techniques of PNF Patterns of arm, leg, head, neck and trunk (Emphasis on straight patterns). Specific techniques of emphasis. Repeated contraction-slow reversal, contract - relax, hold-relax, rhythmic stabilization. Inhibitory techniques. Kabat-Bobath-Rood's.

8. **Hydrotherapy:** Physiological properties of water and hydrodynamics, physiological and therapeutic effects of exercises in warm water, progression of hydro-exercise, theory and application of Badragaz technique, Indications and contra-indications of hydrotherapy.

9. **Relaxation:** Muscle tone, postural tone, general and local relaxation, techniques of relaxation.

10. **Neuromuscular coordination & in coordination,** factors governing coordination, principle of re-education of coordination, Frenkel's exercises and its techniques.

11. **Functional re-education,** mat activities for re-education of hemiplegics, paraplegics and cerebral palsy. Walking re-education in neurological conditions and in orthopedic cases.

12. **Aerobic exercises:** Physiological effects and therapeutic uses of aerobic exercises, fitness testing, stress testing for healthy and convalescent individuals.

13. **Exercise programme** to test-strength, flexibility, endurance, and skill.

SECTION-II **EXERCISE PHYSIOLOGY**

1. Nutrition – Carbohydrates, proteins, fats, vitamins, minerals, water; Optimal nutrition for exercise.
2. Strength, power, endurance, speed, flexibility, agility, skill, aerobic and anaerobic activity.
3. Energy for physical activity, energy value of food, energy transfer in the body, energy release for food.
4. Energy transfer in exercise
Human energy expenditure during rest & physical activities (including walking, jogging, running, swimming)
5. Measurement of energy expenditure
Metabolic consideration – VO₂, Lactate threshold, RQ, energy expenditure in terms of Calorimetry

6. Acute effects of exercise on – Cardiovascular, Respiratory, Metabolic (aerobic & anaerobic), Thermo-regulatory, Buffer (pH), Neuro-musculoskeletal, Endocrine, Immune systems.
7. Fatigue – causes and management;
8. Conditioning effects (adaptations) of exercise on – Cardiovascular, Respiratory, Metabolic (aerobic & anaerobic), Thermo-regulatory, Buffer (pH), Neuro-Musculo-skeletal (strength, power, endurance, speed, flexibility, agility, skill), Endocrine, Immune systems, Body composition
9. Measurement of aerobic & anaerobic power and other adaptations (Exercise tolerance test-types-walk test, step test, bicycle ergometry, treadmill test etc; basic parameters; pre-/post-/during-exercise studies)
10. Training – aerobic & anaerobic (strength, power, endurance, speed, flexibility, agility, skill)
11. Exercise at medium & high altitude; Sport diving; Space/micro gravity
12. Effects of prolonged Bed rest/Immobilization
13. Exercise prescription for special groups – children, adolescent, female, elderly

BIOCHEMISTRY

1. Biochemical characteristics of living matter.
2. Biochemistry morphology of cell.
3. Nucleic acids.
4. Proteins.
5. The enzymes.
6. Metabolism.
7. Hormones.
8. Nutrition.
9. Biochemistry of connective tissues, nerve tissue and muscle.
10. Water, electrolyte and base balance.
11. Chemistry of biology materials.
12. Physical chemistry phenomenon.
13. Common procedures done in biochemistry.

PHARMACOLOGY

1. Chemical character and general action of drugs.
2. Methods of administration.
3. Metabolic fate of drug.
4. Drug toxicity including allergy and idiosyncrasy.
5. Drugs acting on C.N.S., anesthetics, antipyretics; hypnotics,
6. Drugs acting on peripheral nervous system, stimulating and / or inhibiting cholinergic and adrenergic activity.
7. Drugs acting on neuromuscular junction and muscle.
8. Drugs acting on the cardio-vascular system.
9. Chemotherapeutic agents.
10. Drugs acting on the respiratory system.
11. Hormones and drugs affecting endocrine functions.
12. The Vitamins.
13. Immunological agents.
14. Irritants, counterirritants, plasters, paste.
15. Diagnostics.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

Third Year

2005-2006

Structure of question paper for Medicine I (General Medicine + Pediatrics = 50 and Dermatology = 20)

Examination Weight age: 70 marks

Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question	08
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Full Question	08
OR	
QUESTION: 2: Full Question	
QUESTION: 3: Short Question (5 out of 6)	25
QUESTION: 4: Very Short Notes (3 out of 5)	09

TOTAL: 50

SECTION – II

QUESTION: 1: Full Question	08
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Notes (4 out of 5)	12

TOTAL: 20

Structure of question paper for

Medicine II (Neurology=35, Obstetrics & Gynecology=35),
Surgery I (General Surgery + Plastic+Neuro Surgery=35, Cardio thoracic Surgery=35),
SurgeryII (Orthopedics- Traumatology and non traumatology=70) .
(Biostatistics=35 and Research methodology=35)

Examination Weightage: 70 marks

Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question	8
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	8
QUESTION:4: Very Short notes (3 out of 5)	9

TOTAL: 35

SECTION – II

QUESTION: 1: Full Question	08
OR	
QUESTION: 1: Full Question	
QUESTION: 2: Short Question (2 out of 3)	10
QUESTION: 3: Short Notes (2 out of 3)	08
QUESTION:4: Very Short notes (3 out of 5)	09

TOTAL: 35

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

THIRD YEAR B.PHYSIO

1. Medicine-I

General Medicine & Pediatrics

Theory 50

Internal Assessment 20

Dermatology

Theory 20

Internal Assessment 10

(Combined paper General medicine, Pediatrics and dermatology 70 marks, duration 3hrs.)

2. Medicine-II

Neurology

Theory 35

Internal Assessment 15

Obstetrics & Gynecology

Theory 35

Internal Assessment 15

(Combined paper Neurology obstetrics and gynecology 70 marks, duration 3hrs.)

3. Surgery-I

General Surgery, Plastic & Neuro Surgery

Theory 35

Internal Assessment 15

Cardio thoracic Surgery

Theory 35

Internal Assessment 15

(Combined paper General surgery, Plastic & Neuro surgery and Cardio thoracic surgery 70 marks, duration 3hrs.)

4. Surgery-II

Orthopedics- traumatology

Theory 35

Internal Assessment 15

Orthopedics- non-traumatology

Theory 35

Internal Assessment 15

5. Bio-Statistics & Research Methodology

Biostatistics 35

Internal Assessment 15

Research Methodology 35

Internal Assessment 15

SURGERY

Acute infections: Inflammatory fever- bacteriemia, septicemia, pyemia, toxemia.

Specific types: Cellulitis- sites, lymphadenitis, abscess with special reference to hand infection, carbuncle, Tetanus, gas gangrene, hospital infection, cross infection with modes of spread and prevention.

General survey of chronic inflammations: Syphilis (reference to other venereal diseases), Leprosy, actinomycosis.

Surgical tuberculosis.

General survey of trauma, pathology and clinical features of wound repair - primary, secondary and tertiary wound healing.

Clean wounds, contaminated wounds and infectious wounds. Principles of treatment survey of factors, affecting wound healing. Ulcers and gangrene.

Post operative complications of abdominal surgery specifically chest, wound infection, edema.

Breast - Surgery.

Burns as a specific type of severe trauma, classification, early and late complications, management & reconstructive surgery - skin grafting as an example of plastic procedure.

Types of skin grafting - take of grafting - healing of grafting Postoperative care of plastic surgery with specific role of physiotherapy.

Outline of surgical disorders of brain & head injuries.

General survey of surgical disorders of spine and spinal and spinal cord problem of paraplegia.

Malignancy - Spread and its behavior.

Various abdominal incisions, abdominal drainage tubes, catheters and nasogastric tubes.

Ward demonstration for an hour a day for a period of one week.

Anesthesia & O.T. demonstrations.

Skin contractures and correction.

Problems of trauma to hand and their management

Urinary Tract infection.

Plastic Surgery-Principles of cineplasty, tendon transplant, cosmetic surgery, types of grafts, surgery of hands with emphasis on management of leprosy hand.

NEURO SURGERY

Neurophysiology:

Neurophysiology basis of tone, disorders of tone and posture, bladder control, muscle contraction, movement and pain.

Clinical Features and management of the following:

Congenital and childhood disorders-hydrocephalus, spina bifida.

Trauma-Broad localization, first aid management & sequel of head injury and spinal cord injury.

Diseases of the Spinal Cord, Craniovertebral junction anomalies, Syringomyelia, Cervical and lumbar disc disease, tumors, spinal arachnoiditis.

Peripheral nerve disorders - Peripheral nerve injuries, localization & Management, Entrapment neuropathies.

Intracranial tumors - Broad classification, signs and symptoms.

Miscellaneous:

Pre-operative Assessment and indications and contraindications for neurosurgery.
Management of Pain, electrical stimulation of brain and spinal cord.

CARDIOTHORACIC SURGERY

1. Basic anatomy of chest wall, trachea and bronchial tree, lungs and bronchopulmonary segments, pleura and mediastinum.
2. Physiology and mechanics of breathing and use of mechanical breathing ventilators (respirators).
3. Pulmonary function tests.
4. Investigation of lung diseases including endoscopies.
5. Bronchogenic carcinoma.
6. Common suppurative diseases of lung- Bronchiectasis, lung abscess.
7. Chest injury.
8. Common surgeries of chest.
Thoracoplasty, Pulmonary dissections, Thoracotomy.
Pneumothorax, Hydropneumothorax, Empyema.
9. Common diseases of esophagus and related conditions, causing dysphagia.
10. Surgery of portal hypertension.
11. Surgery of pulmonary tuberculosis.

12. Basic anatomy of heart, great vessels.
13. Investigation of patient undergoing cardiac surgery.
14. Surgery of heart and great vessels
15. Cardiac arrest, its management.
16. Basic principles of open-heart surgery.
Heart lung bypass (Extra portal circulation).
17. Common diseases of heart requiring surgery (both congenital and acquired) including open-heart surgery.
18. Common drugs used in cardiac surgery, its uses, and side effects.
19. Common vascular surgeries.: Embolectomy, vascular reconstructive surgery. (Thrombosis, Embolism, atherosclerotic and occlusive vascular diseases) including coronary artery by pass:

Clinical:

1. Examination of patients as regards chest & heart diseases.
2. Demonstration – Acquaintances with C.T. Surgery, Equipments, I.C.C.U. O.T.

Radiology:

X- ray studies – X-ray chest in various lung diseases.

ORTHOPAEDICS

Introduction to Orthopedic Surgery, definition and scope. Brief history.

Traumatic Disorders-

General principles and injuries of the upper limb:

Sprains and dislocation- causes, types, principles of treatment.

Fractures – types, displacement, general symptoms, healing, principles of treatment, union, delayed union, non–union, complications.

Injuries to the hand- types, principles of treatment, Injuries to the phalanges, sprains, dislocation of MP & IP joint, fractures of the phalanges, metacarpals, Bennett’s fracture, mallet finger, stenosis, tenosynovitis, trigger finger.

Wrist- dislocations, sprains, injuries to carpals, scaphoid, ganglion. Colle's fracture, displaced epiphysis.

Fractures of forearm bones-greenstick fracture. Infarction injury, adult forearm fractures, principles of treatment, Monteggia fracture dislocation.

Myositis ossificans. Tennis elbow, principles of treatment of elbow.

Fractures involving the elbow joint-Supracondylar fracture - displacement of lateral humeral epiphysis, medial epicondyle injuries, Y & T shaped fractures, volkmann's Ischemic Contracture.Fracture of the head of the radius, fracture of olecranon. Baby car fracture dislocation and reference to Volkman's contracture.

Fractures of the shaft of humerus, principles of treatment.

Injuries to main nerves - radial, ulnar and median.

Injuries to shoulder- fractures of the upper end of humerus, shoulder cuff lesions, dislocations, fracture dislocation, periarthrits, recurrent dislocation. Fractures of clavicle, acromioclavicular dislocations, fractures of the scapula.

Injuries of the spine and pelvis: Vertebral injuries, Transverse processes, kummel's disease. Neural arch, vertebral body. Injuries to the cervical spine, atlanto-axial injuries, hyperemic dislocations, Brachial plexus injuries. Injuries to pelvis.

Injuries of the lower limb:

Injuries of the legs, epiphyseal injuries, Dislocations of the hip joint. Sciatic nerve injuries,

Fractures of the neck femur. Coxa vara, fracture of the shaft of femur supracondylar fracture.

Injuries to the knee joint, contusion, hemarthrosis, quadriceps mechanisms, ligamentous, injuries, cartilage tear, fractures involving knee joint, dislocations. Epiphyseal injuries to the knee, fractures of upper and of tibia and fibula. Lateral popliteal nerve injuries.

Principles of treatment of fractures of tibia and fibula.

Injuries to the ankle- sprain, subluxation, dislocation, recurrent dislocations, dislocation of peroneal tendons. Pott's fracture. Injuries to the talus, calcaneum and tarsal bones. Injuries to the foot.

Miscellaneous:

Amputations - types, sites, ideal stump, complications, general principles, upper extremity and lower extremity - prosthesis and prosthetic service.

Nerve injuries, paraplegia, hemiplegia ,quadriplegia, orthopaedic splint ,orthopaedic appliances Injuries to muscles and tendons.

Non - Traumatic Disorders:

1. Congenital disorders:

Congenital deformities, congenital elevation of scapula, torticollis, caudocranial dystosis

superior radio - ulnar symostosis, Mede lung's deformity, sternocleidomastoid tumor, congenital wryneck.

Kyphosis, lordosis, scoliosis - primary and secondary idiopathic etc., spinabifida, myelomeningocele. Coxa vara, congenital epiphyseal, congenital dislocation of hip
Deportation varus osteotomy, salter operation, Dennis brown splint, Lorenz position for plaster immobilization of C.D.H.

Genuvalgum, genu varum, genu recurvatum.

Quadriceps contracture, talipes equino varus.

Flat foot and foot wear.

Hallux valgus, rigidus, metatarsalgia etc, Dupuytren's contracture.

2. Infections of bones, joints and arthritis:

Infections of Bones- acute and chronic diseases of joints, Rheumatoid arthritis, Osteoarthritis, Skeletal tuberculosis, Principles of treatment , T.B. of shoulder, elbow and wrist, T.B. of hip, knee, ankle and foot.

3. Neurological disorders:

Poliomyelitis - recovering and late stages. Rehabilitation in recovery phase, charting, tendon lengthening, tenodesis, tendon transplants, stabilization problems, short limb and equalization.

4. Miscellaneous:

Backache, Disc- lesions, cervical spondylosis, metabolic diseases, rickets, osteomalacia, osteoporosis, parathyroid - osteodystrophy, scurvy etc.

GENERAL MEDICINE

1. Respiratory Diseases: Lung function tests, pneumonia, lung abscess, bronchiectasis, asthma, emphysema, Pleural effusion, pneumothorax, empyema, chronic bronchiectasis.

2. Cardio Vascular diseases: Rheumatic fever, valvular lesions, congestive cardiac failure, ischemic heart diseases (Angina pectoris and myocardial infarction) stress test, hypertension, peripheral vascular diseases (TAO, Raynauds disease).

3. Endocrinal Disorders: Diabetes mellitus, thyrotoxicosis, myxedema.

4. Gastro - intestinal Disorders: Peptic ulcer, pancreatitis, dysentery and diarrhea, inflammatory bowel diseases, jaundice, cirrhosis of liver.

5. Infectious Disease: Tuberculosis, malaria, typhoid, infective hepatitis, tetanus.

6. Nutritional Disorders: Vitamins and its deficiencies, disorders including rickets and osteomalacia, anemia.

7. Urogenital System: Structure and functions of kidneys including physiology of micturition, acute renal failure.

8. Rheumatology: Rheumatoid arthritis, ankylosing spondylitis, gout, osteoarthritis (Spondyloarthritis, systemic lupus erythematousus, polyarteritis nodosa, mixed connective

tissue disorders, sclerodermas.

PAEDIATRICS

1. **Growth and development** of a child from birth to 12 years, including physical, social, adaptive development.
2. **The maternal and neonatal factors** contributing to high risk pregnancy to the neonate, inherited diseases, maternal infections- viral and bacterial maternal diseases, pregnancy induced hypertension, chronic maternal diseases such as heart diseases, renal failure tuberculosis, diabetes, epilepsy, bleeding in the mother at any trimester.
3. **Community Programmes:** International (WHO), national and local, for prevention of poliomyelitis, blindness, deafness, mental retardation and hypothyroidism, the immunization schedule for children.
4. **Cerebral Palsy:** Etiology- prenatal, perinatal and postnatal causes, pathogenesis, types of cerebral palsy (classification), findings on examination, general examination, examination of C.N.S. musculoskeletal system, respiratory system, GI tract and nutritional status.
5. **Associated defect:** Mental retardation, Microcephaly, blindness, hearing and speech impairment, squint and convulsions.
6. **Prevention:** Appropriate management of high-risk pregnancies, prevention of neonatal and postnatal infections metabolic problems.
7. **Muscular Dystrophy:** Various forms, modes of inheritance and clinical manifestation, physical findings in relation to disabilities, progression of various forms and prognosis, treatment goals in forms which are and are not fatal.
8. **Spinabifida, Menigomyelocele:** Development, clinical features - lower limbs, bladder and bowel control, complications - U.T.I. and hydrocephalus, medical treatment and surgical treatment.
9. **Still's Disease:** Classification, Pathology in brief, physical findings, course and prognosis, treatment prevention and correction of deformity.
10. **Acute C.N.S. Infections:** Classification (Bacterial and Viral), the acute illness, C.N.S. sequel leading to mental retardation, blindness, deafness, speech defect, motor paralysis, bladder and bowel problems, seizure disorder and specific problems such as subdural effusion, hydrocephalus, pressure sores, feeding difficulties.
11. **Normal diet of newborn and child:** List dietary calories, carbohydrate fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition, Etiology, findings and treatment of rickets. Vitamin D deficiency and resistant rickets.
12. **Lung infections:** Clinical findings, complications and medical treatment of

bronchiectasis, lung abscess and bronchial asthma.

SKIN V.D. (DERMATOLOGY)

1. Structure and functions of normal skin, primary and secondary skin lesions.
2. Scabies and pediculosis.
3. Fungal infections of skin:
 - Dermatophytosis.
 - Tinea versicolor.
 - Candidiasis.
4. Bacterial infections of skin- Impetigo / Boil.
5. Viral infections of skin- Herpes zoster.
6. Eczema / Dermatitis / Allergies.
7. Psoriasis / Acne / Alopecia / Vitiligo and Leucoderma.
8. Leprosy / Lepra-reaction / Physiotherapy in leprosy.
9. Sexually transmitted diseases.
 - Syphilis - primary & secondary.
 - Gonorrhoea. AIDS.

NEUROLOGY

1. **Anatomy, Physiology, Lesions and diseases of:** Pyramidal system, extra-Pyramidal system, cerebellar system, spinal cord, upper and lower motor neuron, cranial nerves, brachial plexus, lumbosacral plexus and peripheral nerves.
2. **Causes, Clinical features and management of:** Unconscious patient, hemiplegia, paraplegia, quadriplegia, cerebral diplegia, spastic child, foot drop and wrist drop.
3. **Disorders of cerebral circulation.**
4. **Infections:** Encephalitis, meningitis. Poliomyelitis, transverse myelitis, slow viral diseases.
5. **Diseases of Peripheral Nerves:** peripheral neuropathy.
6. **Muscle disorders:** Myositis, Polymyositis, and Muscular dystrophies.
7. **Degenerative diseases:** Parkinsonism, motor neuron diseases, spinocerebellar degenerations and diseases of anterior horn cell, dementia.
8. **Costoclavicular syndrome.**
9. **Demyelinating disorders** including multiple sclerosis.

10. **Basis concept of electro physiology and electromyography.**

OBSTETRICS AND GYNAECOLOGY

Anatomy and physiology of the female reproductive organs.

Puberty dynamics.

Physiology of menstrual Cycle- Ovulation cycle, Uterine cycle, duration, amount, Hormonal regulation of menstruation.

Diagnosis of pregnancy.

Abortion.

Physiological changes during pregnancy.

Antenatal care/ exercises.

High-risk pregnancy.

Normal labor.

Normal puerperium and postnatal exercises, family planning

Medical Termination of pregnancy (MTP)

Infections of female genital tract including sexually transmitted diseases.

Low backache.

Prolapse of uterus and vagina.

Principles of common gynecological operations -Hysterectomy

D & C / D & E - PAP smear.

BIO- STATISTICS & RESEARCH METHODOLOGY
SECTION-I

RESEARCH METHODOLOGY

1. Research and Physical Therapy
2. The Research Problem
3. Literature Review
4. The Proposal and Ethics
5. Quantification in Research
6. Non-experimental Research
7. Confidence in Research and Instruments
8. Experimental Research
9. Experimental Design
10. Parametric tests
11. Non-parametric Tests
12. Reporting Research

**Ref: Elements of Research in Physical Therapy: Dean P Currier;
Williams & Wilkins, 1990.**

SECTION-II **BIO-STATISTICS**

1. Definition and meaning of statistics.
2. Method of collection of data – primary data, secondary data – statistical unit, questionnaire.
3. Classification of data – Construction of frequency distribution table.
4. Tabulation of data – various types of calculation – rules of tabulation –seriation.
5. Presentation of data, diagrammatic and graphical presentation. One dimensional diagram, two dimensional diagram, three dimensional diagram, pie diagrams, histogram – frequency polygon, frequency curve-ogive.
6. Measure of central tendency – meaning, objective, requisites, various methods of measure of central tendency – mean, median and mode. Calculation of mean, median and mode in individual, discrete and continuous series. Calculation of quartiles, deciles and percentiles in individual, discrete and continuous series.
7. Measure of dispersion – Meaning, requisites, various methods of dispersion – range, inter quartile range, quartile deviation, mean deviation, standard deviation, coefficient deviation.
8. Correlation – meaning, types of correlation, Scatter diagram, Karl Pearson's coefficient of correlation (ungrouped data only), Spearman's rank correlation, Coefficient (ungrouped data only).
9. Regression – Linear regression – lines of regression – estimation using lines of regression (using deviation for mean) (ungrouped data only).
10. Sampling technique – Random sampling – stratified sampling, systematic sampling, quota sampling, cluster sampling, laws of statistical regularity, inertia of large numbers, errors in sampling.
11. Probability – applied, conditional
12. Probability distribution.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

Final Year

2005-2006

Structure of question paper for Physiotherapy in neuromuscular conditions, Physiotherapy in Cardiopulmonary conditions, Physiotherapy in General Medical & Surgical conditions, Physiotherapy in Musculoskeletal conditions, Physiotherapy in Rehabilitation

Examination Weightage: 70 marks

Internal Assessment: 30 marks

TOTAL MARKS 70

SECTION – I

QUESTION: 1: Full Question 8

OR

QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10

QUESTION: 3: Short Notes (2 out of 3) 8

QUESTION:4: Very Short notes (3 out of 5) 9

TOTAL: 35

SECTION – II

QUESTION: 1: Full Question 8

OR

QUESTION: 1: Full Question

QUESTION: 2: Short Question (2 out of 3) 10

QUESTION: 3: Short Notes (2 out of 3) 8

QUESTION:4: Very Short notes (3 out of 5) 9

TOTAL: 35

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

FOURTH YEAR B.PHYSIO (FINAL B.PHYSIO)

1.	<u>Physiotherapy in Musculoskeletal Conditions</u>	
	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30
2.	<u>Physiotherapy in Neuromuscular conditions</u>	
	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30
3.	<u>Physiotherapy in Cardiopulmonary conditions</u>	
	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30
4.	<u>Physiotherapy in General Medical & Surgical conditions</u>	
	Theory	70 (3 hrs.)
	Internal Assessment	30
	Practical	70
	Internal Assessment	30
5.	<u>Physiotherapy in Rehabilitation</u>	
	Theory	70 (3hrs.)
	Internal Assessment	30

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

FINAL YEAR

SUBJECT: PHYSIOTHERAPY IN REHABILITATION

<u>No.</u>	<u>Name of books</u>	<u>Name of author</u>	<u>Type</u>
1.	Rehabilitation surgery for deformities due to Poliomyelitis	KROL	Reference
2.	Lecture note on Rehabilitation	Saunders	Reference
3.	Disability management and physical Rehabilitation	Clifton	Reference
4.	Neuro-Rehabilitation	S.D.Farber	Reference

PHYSIOTHERAPY IN CARDIOPULMONARY CONDITIONS

1.	Cardiopulmonary Physical Therapy	Irwin & Tecklin
2.	Essentials of Cardiopulmonary Physical Therapy	Hillegass
3.	Cardiopulmonary Physical Therapy	Frownfelter
4.	Cardiopulmonary Physical Therapy	Pryor and Prasad

PHYSIOTHERAPY IN NEUROMUSCULAR CONDITIONS

1.	Neurological Rehabilitation	Carr & Shepherd
2.	Steps to Follow	Sophie Davis
4.	Right in the Middle	Sophie Davis
5.	Cerebral Palsy	Sophie Levitt
6.	Neurological rehabilitation	Umphred

PHYSIOTHERAPY IN MUSCULOSKELETAL CONDITIONS

1.	Treatment and rehabilitation of fracture	Hoppenfield	Reference
2.	Orthopaedic Physical Therapy	Donatelli	
3.	Tidy's Physiotherapy	Porter	
4.	Orthopedic Physical Diagnosis	S. Pandey	
5.	Orthopedic Physical assessment	Magee	
6.	Clinical Orthopedic Rehabilitation	Brotzmann	
7.	Orthopedics For Physiotherapists	Ebenazar	

PHYSIOTHERAPY IN GENERAL MEDICAL & SURGICAL CONDITIONS

1.	Cash's General Medical and Surgical conditions	Downie
2.	Physical Medicine and Rehabilitation	DeLisa
3.	Women's Health	Sapsford

Books List Reference Book

- | | |
|--|--------------------|
| 1. Neurological Rehabilitation | Cart |
| 2. Physiotherapy in pediatrics | Shepherd |
| 3. Amputations & Prosthetics: a
Case study approach | May |
| 4. Hand secrets | Jebson |
| 5. Physical diagnostic secrets | Mangione |
| 6. Physiotherapy & Growing child | Bums |
| 7. Rehabilitation of movement | Pitt-broke |
| 8. Hand-splinting | Wilton |
| 9. Women-Health AT.B.for
Physiotherapist | Sapsford |
| 10. Orthotics in Rehab. Spinting
Hand & body | McKee |
| 11. Management in Rehab. A Case
Study | Schuch |
| 12. Movement disorder | Marsden |
| 13. Hand-splinting | Wilton |
| 14. Cailliet Pain Series | |
| a) Knee Pain & disability | Cailliet |
| b) Low back pain | “ |
| c) Shoulder pain | “ |
| d) Hand pain & impairment | “ |
| e) Neck pain & Arm pain | “ |
| f) Foot & ankle pain | “ |
| g) Head & face pain | “ |
| 15. Orthopaedic Physical therapy | Placzet |
| 16. Human Movement | Trew Everett |
| 17. Rehabilitation of spine | Liebansan |
| 18. Dynamics of clinical
Rehabilitation exercise | Ordel & Expand |
| 19. Rehab of early Rheumatoid
Arthritis | Leang & Logigean |
| 20. Gait in Rehabilitation | Samidt |
| 21. Gait analysis | Whittle |
| 22. Physical agent in Rehab. | Livingstone |
| 23. Orthotics | Redford & Trautman |
| 24. Traction & Orthopaedic
appuomeas | |
| 25. Orthopaedic Physical assement | David j. Maggee |
| 26. Physical therapy for shoulder | Dona Tellei |
| 27. Mannual therapy | B. Mulligan |
| 28. Modern Manual therapy | Grieve |

29. Assessment through Touch & Palpation skill	Leon Chaitow
30. Positional release technique	“
31. Pain – Diagnosis management	J. Mennel
32. Mobilization of Nervous System	D. Butler
33. Lifting, Moving and transferring Patient	Couhal
34. Therapy & amputees	Barbara
35. Impairment rating & disability	Handinelli/ Katz
36. Work related upper limb Disorders	Haston
37. Myofascial pain and Dysfunction (Vol1,2)	Barvara & Travell Simons
38. Low back pain	Bernard
39. Managing of Low back pain	Churchill
40. Preventing Low back pain	Hooper
41. Hand book of Low back pain	Herrony
42. Rehabilitation (Physical) Management	Saunders
43. Real concept in stroke	Bangal
44. Stroke patient: Cause, prevention & Rehabilitation	A.L.Saha
45. Stroke Pain Principles & Management Of Rehab	Johnstone
46. Management of minor head injury	Jennet & Yat's
47. The practical Management of head injury	Palter & Briggs
48. Athletic injury	Arnheim & Freutie
49. Sports medicine secrets	Hauleyl & Belfas
50. Sports injury	Hyoc Caenmu lave
51. Hand injury in athletics	Stnickland & Retling
52. Fundamentals of Sports injury Management	Malessea/ Norton.
53. Human sexuality & Rehabilitation	Ann Shaker
54. Physically handicapped children	Black Magel
55. The care of Geriatric population	Sherman
56. Sports Physiotherapy approved Science & practice	Zuluaga et al
57. Limb amputation	Hanl cotton
58. Rehabilitation surgery for Deformities due to polio	Krol
59. Backache	Meallode/ Transfied
60. Revision: Total hip replacement	Bons McCarthy
61. Relaxation technique	Payne
62. Pediatric Physical therapy	Teeklin
63. Introduction of exercise science	Howarth

64. Exercise testing & exercise Prescription	Skinner
65. Clinical Pediatric Physical Therapy	Ratliffe
66. Abnormal postural Activity	Berta bobath
67. Motor development in C.P.	Berta bobath
68. Physical therapy Management Of lower ext. Amputation	Menchs/ Cih
69. Physical therapy for sports	Werner Kuprium
70. Physiotherapy in obstetrics & Gynecology	Marget Polden
71. Cash's Textbook of chest, Heart & Vascular diseases	Patricia A Orwine
72. Cash's Text book of orthopedic & Rheumatology	“
73. Neurology for Physiotherapy	“
74. Cash's Text book of medical & Surgical conditions	“
75. Clinical Neurophysiology	U.K.Mishra/ J. Kalita
76. Clinical decision making In rehabilitation	Basmajian Banerjee

PHYSIOTHERAPY IN MUSCULO SKELETAL CONDITIONS

Assessment & treatment planning strategies. Documentation for orthopedic cases based on SOAP

1. Traumatology: Fractures and Complications: Definitions, healing process of fractures, causes, signs and symptoms of fractures, Methods of reduction, means of immobilization, duration of immobilization, fractures in children, epiphyseal injury, principles of physiotherapy in fractures of upper, lower extremity bones, scapula, ribs, vertebrae, spine and pelvis.

2. Physiotherapy for Puttiplats operation.

3. Rehabilitation of patients- Arthroplasties- excision arthroplasty, total / partial hip and knee replacement, Mc Murray's osteotomy, reconstructive surgery ,mechanical changes-tendon transfer, peripheral nerve injuries.

4. Dislocations: Causes, types, principles of treatment of shoulder, elbow, wrist, MP, IP, hip, knee, ankle dislocations, perthes' disease, acromio-clavicular and sternoclavicular joints.

5. Deformities: Mallet finger, trigger finger, deQuervain's disease, metatarsalgia, hallux valgus, dupuytren's contracture.

6. Pathological changes in inflammation, edema, pyogenic conditions, osteomyelitis.

7. Soft Tissue Injury: Contusion, sprains, strains, ruptures of muscles and ligaments, knee injuries, arthroscopy.

8. Rheumatology and arthritis: Still's disease, ankylosing spondylitis, bursitis, capsulitis, synovitis, tendinitis, infective arthritis, osteoarthritis, cervical spondylosis, gout, peri arthritis, fasciitis, tennis elbow, ganglions, tenosynovitis, chondromalacia patella, Osgood Schlatters disease, causalgia.

9. Congenital Deformities: Coxa vara, coxa valgus, C.D.H., Sprengel's scapula, torticollis, Madelung's deformity, Wry neck, kyphosis, lordosis, scoliosis, PID. Sprain back, spina bifida, spondylosis, spondylolesthesis, tuberculous spine, CV anomalies. CTEV

10. Foot conditions: Valgus and Varus feet, Mortons' neuroma, flat foot

11. Amputations of lower and upper extremity – physiotherapy management, Calipers, prosthesis and splints.

PHYSIOTHERAPY IN NEUROMUSCULAR CONDITIONS

SECTION-I

Physical therapy assessment, management strategies & documentation of the following conditions:

1. Neurological examination (Protocol):
includes detailed evaluation of sensory, motor, perceptual and higher functions.
2. Paediatric Neurology:
Cerebral palsy, Hydrocephalus and myelo-meningocele - Definition, classification, clinical features etc.
3. CNS infections (Bacterial & Viral):
Meningitis and encephalitis, Myelitis (Transverse myelitis, Poliomyelitis & Post-polio Syndrome), Post Viral Syndromes (GBS)- Causes, Clinical features
4. Cerebellar disorders:
Causes, Clinical features of cerebellar dysfunction
5. Extra pyramidal syndromes:
Parkinson's disease- Definition, aetiopathogenesis, Clinical features & Prognosis.
6. Demyelinating diseases of the nervous system:

SECTION-II

1. Vascular disorders of the brain:
Definition, classification, clinical features of cerebrovascular stroke (CVS) & Transient Ischemic Attacks (TIA), Brainstem stroke- lateral medullary Syndrome, Medial medullary syndrome and Benedicts syndrome.
2. Traumatic brain injuries:
Causes, types, complications & clinical features.
3. Motor system disorders:
Motor neuron disease and spinal muscular atrophy - Types, aetiopathogenesis, Clinical features.
Muscular dystrophy: DMD, Becker's, Facio-scapulo-humeral muscular dystrophy & Peroneal muscular dystrophy - Types, aetiopathogenesis, Clinical features.
Myopathies: Types, aetiopathogenesis, Clinical features.
Myesthenia Gravis: definition, classification clinical features.
4. Multiple Sclerosis:
Types, aetiopathogenesis, Clinical features.
5. Peripheral Neuropathies:
Focal Mononeuropathy, Polyneuropathy, (Alcoholic, Diabetic, Metabolic, Toxic, Inflammatory & infective neuropathy) Plexopathy, Entrapment Neuropathy -Causes, clinical features, complications.
6. Basics of EMG & NCVs

PHYSIOTHERAPY IN CARDIO PULMONARY CONDITIONS

SECTION - I

1. Reviews of basic cardio respiratory anatomy and physiology
2. Cardiac and respiratory rehabilitation
 - definitions – assessment – aims and objectives- principles of rehabilitation
3. symptomatology of cardio respiratory disorders, investigations, diagnosis and differential diagnosis
4. Principles and techniques of physiotherapy in diseases of respiratory system : postural drainage, active cycle of breathing techniques, PEP mask, flutters and other chest clearance techniques, Breathing exercises and thoracic mobility exercises etc.
5. Physiotherapy assessment and treatment in cardio respiratory conditions – acute respiratory infections – pneumonia, lung abscess, pleurisy, emphysema, pulmonary tuberculosis
 - chronic respiratory conditions- chronic bronchitis, emphysema, bronchial asthma, Bronchiectasis, cystic fibrosis, Pneumothorax, hydro-pneumothorax, pyothorax , atelectasis.
 - Cardiac Conditions- congestive cardiac failure, myocardial infarction, Rheumatic heart disease.

SECTION – II

1. Pre and post operative evaluation and physiotherapy management of cardio thoracic surgical conditions & incisions
 - a. Thoracoplasty, lobectomy, segmentectomy, pneumonectomy, tracheostomy, pleurodesis, valve replacement and valve repair surgeries CABG (coronary artery bypass grafting), heart transplant, peri- cardiectomy, septal defects, co-arcuation of aorta, Fallot's tetralogy,
2. Principles of chest physiotherapy in ICU & ICCU with effect of anesthesia on cardio respiratory system. Knowledge of equipments in ICU, ventilators, suction apparatus, nebulizer, humidifiers, O₂ therapy
3. Significance of following to physiotherapist – laboratory investigation, creatin phosphokinase level, SGOT, SGPT, Sputum culture, , blood test- chest X- rays- Arterial blood gas analysis- basics of ECG- lung function test- Cardiopulmonary stress test
4. Documentation and communication skills for physiotherapists – referral letters, daily records and discharge summary
5. Cardiopulmonary resuscitation - demonstration

PHYSIOTHERAPY IN GENERAL MEDICAL AND SURGICAL CONDITIONS

SECTION – I

1. Physiotherapy in mother and child care _ Antenatal and post natal management, early intervention and stimulation therapy in childcare (Movement Therapy)
2. Physical Fitness- Endurance, aerobic exercises
3. Skin conditions- Acne, Psoriasis, alopecia, Leucoderma
Carbuncles and boils, STD – AIDS, syphilis, gonorrhoea
4. Geriatrics – Handling of old patients and their problems
5. Psychiatry – Physiotherapy in psychiatric conditions
6. Wounds, local infections, ulcers, pressure sores, Inflammation & Edema - UVR and other electrotherapeutics for healing of wounds, prevention of hyper granulated scars relief of pain and mobilizations
7. Peripheral vascular diseases & amputation
8. Role of physiotherapy in diabetes mellitus hypertension, vertigo, leprosy, myofascial pain, acute and chronic pain syndromes, obesity, hemophilia.

SECTION II

1. Complications – common to all operations
2. Physiotherapy during pre operative and post operative stages
3. Abdominal incisions
4. Operations on upper gastrointestinal tract oesophagus, stomach, duodenum
5. operation on large and small intestine :- appendicectomy, cholecystectomy, partial colectomy, ileostomy, hernias, herniotomy, herniorrhaphy
6. Hysterectomy, prostatectomy, nephrectomy, pelvis repair, caesarian
7. other gynecological operations
8. Mastectomy – simple, radical
9. Burns and its treatment – Physiotherapy in burns, skin grafts and reconstructive surgeries and rehabilitation
10. ENT : physiotherapy in facial palsy, sinusitis, laryngectomy, pharyngo – laryngectomy

PHYSIOTHERAPY IN REHABILITATION

Section - I

1. *Introduction to rehabilitation* – Basic principles – administration and prescription writing – Rehabilitation team.
2. *Clinical decision making* – planning an effective treatment.
3. Reservation and legislation for rehabilitation services for the disabled.
4. Contribution of social worker in Rehabilitation.
5. *Rural Rehabilitation*—Primary Health Centres.
6. *Principles of Rehabilitation*
 - (a) Communication Problems-evaluation and treatment
 - (b) Social Problems-social needs-Rehabilitation Environment-Community Resources
 - (c) Vocational Problems-evaluation –rehabilitation
7. *Community Based Rehabilitation*-Introduction-aspects of CBR-Role Of Physiotherapy
8. *Occupational Health*-Definition-scope-Occupational Diseases and Hazards

Section - II

1. *Geriatric Problems*
 - a. Physiology of Aging process/degenerative changes-Musculoskeletal-cardiorespiratory-metabolic
 - b. Role of Physiotherapy in graceful aging-evaluation and management.
2. *Prosthesis and Orthosis*
 - i. *Prosthesis*
 - Purpose of prosthetics, Types
 - Upper Limb Prosthesis components-terminal devices-hooks-wrist units-forearm, shoulder harness-suspension control system(In Brief)
 - Lower Limb Prosthesis-A.K. and B.K. prosthetic components-Check out procedure-Gait analysis and deviations following B.K. and A.K. prosthesis-Symes and Partial foot prosthesis
 - ii. *Orthosis*
 - Purpose of orthosis,types
 - Lower limb orthosis-AFO,KAFO,HKAFO –components-check out procedure and training with orthosis
 - Upper limb orthosis-principles of wrist,finger,thumb orthosis,opponens splint
 - Introductory demonstration of methods of construction of temporary orthosis for Hand and fingers.
 - Spinal Orthosis-cervical collar-thoracolumbar orthosis-Taylor-Boston-Milwaukee orthosis.
3. *Ergonomics*-
Definitions-principles-evaluation and application
4. Environmental assessment of modifications
5. Functional assessment
6. *Rehabilitation of Pain Syndromes*-
Definitions-acute and chronic pain syndromes
7. Wheelchair Management.

NOT FOR EXAMINATION

PSYCHIATRY

Mental Health:

Normal Mental Health
Criteria of normality or natural personality.
Factors contributing to normal mental health.
Self-actualizing individual.

Study of Abnormal Personality:

Neurotic.
Hysterical.
Psychotic.
Paranoid.
Schizoid.
Psychopathic etc.

General Etiological Factors:

Hereditary.
Genetically Constitutional.
Acquired.
Traumatic.
Infective.
Toxic.
Degenerative.
Social and Environmental including pathogenic family patterns.
Precipitating causes.
Frustration and conflicts.

Symptomatology and Treatment of:

Psychoses: (I) Functional - Functional Schizophrenic, reaction group, simple, paranoid, catatonic, hebephrenic paranoid state, paranoid state, paranoia, juvenile, schizophrenia autistic thinking, dementia.

(II) Organic - Toxic confused states, senile psychoses, arteriosclerosis, degenerative, G.P.I.

Affective Disorders: Dynamics of Mania, hypomanias, chronic mania, M.P.D., involuntal depression, senile depression, postpartum depressive reactions, reactive and neurotic depression, endogenous depression, suicide (Egoistic, Altruistic, Anomic).

Epileptic Disorders: Epileptic Psychoses.

Neurosis:

Symptomatology, diagnosis and treatment and psycho-dynamics of anxiety state, hysteria, conversion reaction, dissociative reaction, dual personality, obsessional neurosis, phobias, hypochondriasis, neurasthenia and mental fatigue.

Mental retardation- Definition, Etiological factors, Prenatal, postnatal, infective hormonal congenital, type of mental retardation clinical types- microcephaly, hydrocephalus, Mongol, family idiocy, phenylketonuria etc.

Symptomatology of various grades of retardation, differential diagnosis and treatment.

Child Psychology:

Behavior disorders - Nail biting, Enuresis, Stealing, Truancy Thumbsucking, Speech difficulties, Pica, Vomiting, Anorexia, delinquency.

Introduction to dynamics of Psychophysical disorders:

Asthma, skin rashes, hypertension, bowel disorders Introduction to treatment in psychiatry - E.C.T., Insulin, Coma therapy

Drug therapy - Tranquilizer, Mood elevators, hypnotics and sedatives.

Psychotherapy - Deep and superficial, individual and group, expressive suppressive, environmental manipulation, re-educative.

Psychodrama.

Psychoanalysis.

Play Therapy.

Physiotherapy.

Occupational Therapy.

OPHTHALMOLOGY

1. Common eye diseases including Refractory errors, Conjunctivitis and trachoma.
2. Cataract and glaucoma
3. Squint and Ptosis.
4. Eye lesions in leprosy, including cases, treatment and complications of lagophthalmos.
5. Causes, clinical features and treatment of disorders of ocular movement occurring in diseases such as myasthenia gravis, progressive supranuclear palsy and lower motor neuron diseases.
6. Causes, clinical features treatment and prognosis in inflammatory disorders, vitamin A deficiency emphasis on preventable causes and prophylactic measures.
7. Definition of blindness, and visual disability evaluation, investigative procedures used for testing visual failures.

E.N.T.

1. Anatomy and physiology of hearing and the use of audiometer in assessment of hearing - outline only.
2. General introduction to diseases of E.N.T., emphasis on otitis media, bell's palsy, sinusitis, rhinitis.
3. Mastoid surgery.
4. Larynx and associated functional paralysis with tracheostomy and care of tracheostomy.
5. Causes of hearing loss, Conservative and surgery intervention including types and availability of hearing aids.

COMPUTER APPLICATIONS

- 1. ROLE OF COMPUTER IN PHYSIOTHERAPY**
- 2. MS OFFICE**
- 3. MS EXCEL**
- 4. MS WORD**
- 5. MS POWER POINT**
- 6. INTERNET APPLICATION**
- 7. LITERATURE SEARCH ON THE INTERNET**

BPT-IV

MANAGEMENT

Course Objectives:

The course is designed to provide basic management knowledge and skills essential for effective functioning; and to be conversant with planning, organization, work scheduling, cost, control of quality in relation to Physiotherapy Care and Service.

Course Contents:

- 1. Introduction, Branches of Management, Nature and Scope of management process.**
- 2. General Principles of Management – Theories of management; Principles of Health Sector Management; its application to Physiotherapy.**
- 3. Personnel Management – Policies, Procedures, Basic concepts including performance appraisal.**
- 4. Planning & Organization: Planning Cycle, Principles of Organizational Charts, resource and quality management, Planning change.**
- 5. Financial issues including budget and income generation.**
- 6. Hospital Management: Hospital Organization, Staffing, information, Communication and co-ordination with other services of hospital, Cost of services, Monitoring and evaluation.**
- 7. Self Management**
 - **Preparing for first job**
 - **Time Management**
 - **Career development**
- 8. National Health Policy and health care system in India**
- 9. Organization of Physiotherapy department: Planning, Space, Manpower and other basic resources.**

BPT-IV

ETHICS

- 1. History of Physiotherapy**
- 2. Ethical Principles in Health Care**
- 3. Ethical Principles Related to Physiotherapy**
- 4. Scope of Practice**
- 5. Rules of Professional Conduct**
 - (a) Physiotherapy as profession**
 - (b) Relationship with patients**
 - (c) Relationship at Health care institution i.e. Hospitals, Clinics etc.**
 - (d) Relationship with Colleagues and Peers**
 - (e) Relationship with Medical and other Professionals.**
- 6. Confidentiality and Responsibility**
- 7. Malpractice and Negligence.**
- 8. Provision of Services and Advertising**
- 9. Sale of Goods : Personal and Professional Standards**
- 10. Legal Aspects**
 - (a) Legal responsibility of Physiotherapists for their action in the professional context and understanding liability and obligations in case of medico legal action.**
 - (b) Consumer protection act.**

VEER NARMAD SOUTH GUJARAT UNIVERSITY

BACHELOR OF PHYSIOTHERAPY (B. Physio)

2005-2006

Practical Marks Distribution: This is the general guideline for marks distribution and examination pattern for FY, SY, TY and Fourth Year B. Physio.

Total: 70 Marks

Practical (50 marks)	Viva-voce (20 marks)
Long case (30 marks)	
Short case (10 marks)	
Short case (10 marks)	

General Instruction for University Practical Examination:

- 1) Practical Examination should be taken & marks should be given by pair of Examiners only & not by single examiner.**
- 2) Marks should be put directly to the mark sheet. No rough mark sheet should be used.**
- 3) Sealed Original and Duplicate mark sheets should be submitted at the end of each session to the special Supervisor or coordinator of examination.**
- 4) Examiner shall not keep any kind of rough or fair copy of any mark sheet with him/her.**

SUBJECT TRANSCRIPT

SR.NO	SUBJECT	TOTAL HOURS OF TEACHING
1.	Human Anatomy	250
2.	HUMAN PHYSIOLOGY (Inclusive of electro-physiology)	200
3.	Psychology & Sociology	80
4.	Bio-medical physics	100
5.	Exercise – therapy I&II & soft tissue Manipulations	300
6.	Electro therapy -I&II	300
7.	Pathology	50
8.	Microbiology	30
9.	Biochemistry	50
10.	Pharmacology	30
11.	Bio-Mechanics & Kinesiology	100
12.	Psychiatry	30
13.	Neurology	50
14.	General Medicine	35
15.	Pediatrics	20
16.	Skin & V.D	20
17.	Cardio-Pulmonary Surgery	35
18.	Obstetrics & Gynecology	30
19.	Orthopedics	80
20.	General Surgery+ Plastic Surgery	35
21.	ENT	10
22.	Ophthalmology	10
23.	Radiology	10
24.	Physiotherapy in conditions	1047
25.	Bio-Statistic & Research Methodology	70
26.	Rehabilitation Therapy (P&O splinting)	35
27.	Ethics, Administration & Management	30
28.	Institutional Visits, Conferences, Educational Tours & others	150
29.	Clinical hours during S.Y., T.Y., & final year	1400
30.	Clinical hours during Internship	1300
31.	Computers	100
32.	English	80
33.	Exercise Physiology	80
	TOTAL	6147