

DIPLOMA IN PHYSIOTHERAPY – SEMESTER TWO

Second Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Fundamental of Exercise Therapy-I	5	100
2	Fundamental of Electrotherapy-I	5	100
3	Practical (Electrotherapy, Exercise Therapy)	5	100
4	Environment Science	5	100
5	English	4	100
Total		24	

Subject Name: FUNDAMENTAL OF EXERCISE THERAPY-I

1. Bio-mechanics i) Axes / planes, laws of inertia & motion, mechanics of Forces, levers, pendulum, equilibrium, Torque ii) Types of muscle work angle of pull – Mechanical advantage – applied mechanics in the Therapeutic Gymnasium.
2. Starting & derived positions, stability, base of support.
3. Classification of movements, (active, passive, assisted, resisted) / Goniometry – techniques, uses, types.
4. Limb length (only lower limb – apparent, true, Supratrochantric) & girth measurements.
5. Assessment of Sensations / Reflex testing.
6. Assessment of Blood pressure / pulse rate / chest expansion & Respiratory rate.
7. Relaxation – all methods.
8. Massage manipulations – principles effects / merits / demerits – skills on extremities / scalp/ spine / abdomen / face.

Subject Name: FUNDAMENTAL OF ELECTROTHERAPY-I

1. Fundamentals of Low frequency currents: production of electricity, mains supply, A.C. currents & Faradic type current, D.C. currents – Types – fundamentals of electrical charges, static electricity-physic of direct currents Ohm's law Conductors-Capacitors- Rheostats-Potentiometers-ammeters-oscilloscopes. types of electrodes galvanic skin resistance – electrode –gels- types significance.
2. Fundamentals of High frequency currents: Magnetism, E.M.F. Conduction – Lenz's Law-transformers -types, Thermonic valves, Semi – conductors – types –Transistors, Electronic circuits –oscillators,, - pulse generators.
3. E.M. spectrum – Laws of transmission reflection – refraction – absorption – attenuation.
4. Cellular Bio-physics – reception & emission of E.M.F. signals.

Subject Name: PRACTICAL (ELECTROTHERAPY, EXERCISE THERAPY)

Subject Name: FUNDAMENTAL OF ENVIRONMENTAL SCIENCE

Unit 1: The Multidisciplinary nature of environmental studies Definition; Scope and importance, Need for public awareness.

Natural Resources: Renewable and non-renewable resources:

Natural resources and associated problems

- a) Forest resources: Use and Over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
- b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.
- c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, Case studies.
- f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources.

Equitable use of resources for sustainable lifestyles.

Unit 2: Ecosystems:

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession. - Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:
 - a. Forest ecosystem
 - b. Grassland ecosystem
 - c. Desert ecosystem
 - d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Biodiversity and its Conservation

- a. Introduction-Definition: genetic, species and ecosystem diversity.
- b. Biogeographical classification of India.
- c. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
- d. Biodiversity at global, National and local levels.
- e. India as a mega-diversity nation.
- f. Hot-spots of biodiversity.
- g. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.

- h. Endangered and endemic species of India.
- i. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit 3: Environmental Pollution:

- Causes, effects and control measures of: -
 - a. Air pollution
 - b. Water pollution
 - c. Soil pollution
 - d. Marine pollution
 - e. Noise pollution
 - f. Thermal pollution
 - g. Nuclear hazards
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster management: floods, earthquake, cyclone and landslides.

Social Issues and the Environment

- From Unsustainable to Sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act. - Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.

Unit 4: Human Population and the Environment

- Population growth, variation among nations.
- Population explosion-Family welfare Programme.
- Environment and human health.
- Human Rights.
- Value Education.

- HIV/AIDS.
- Women and Child Welfare.
- Role of information Technology in Environment and human health.
- Case Studies.

Unit 5: Field Work (Practical)

- Visit to a local area to document environmental assets-river/forest/grassland/hill/mountain.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slopes, etc.

Subject Name: ENGLISH

Unit 1: English Grammar

- 1. An Introduction to Part of Speech :** Verb, Tenses, Voice, Direct and Indirect Forms of Speech.
2. Prepositions
3. List of Appropriate Preposition Used
4. Sentence
5. Synthesis of Sentences
6. Transformation of Sentences
7. Syntax
8. Punctuation
9. **Vocabulary :** Antonyms and Synonyms, Similar Words Distinguished, One Word Substitutions, More about words, Idioms & Phrases, Idioms.
10. **Common Error :** Some fundamental Rules for Correction, Sentences with error.
11. Comprehension

Unit 2 : Composition

1. Paragraph Writing
2. Letter writing
3. Essay Writing
4. The Essays