

**Department of Physiotherapy
Punjabi University, Patiala**

**Syllabus for Ph.D. Executive Entrance Test
Session-2026-2027
Section-A
(Research Methodology)**

1. Research –

Scope, characteristics and types of research

Various Research designs in health sciences: epidemiological research-observational studies

(descriptive studies, cross sectional studies, longitudinal studies, case study, case control studies, cohort study – retrospective – prospective), Experimental design

Types of sampling and its advantages and disadvantages

Literature review: need, importance, steps of performing a good literature review identification of types of literature, search strategy, data base, pubmed, cinhal, pedro primary search – types, Secondary search – data search engine

Tools of Data collection: Schedule, Questionnaire, Interview, content analysis

Observation, case study, use of instruments, case study, others

Ethics in research, publication misconduct, databases and research metrics

2. Biostatistics –

Introduction, origin & development, scope, and functions, central tendencies Mean Median, Mode, Measures of dispersion, range, Standard deviation, Standard error, skewness, kurtosis, Organization and presentation of data- Classification, tabulation- classification, tabulation, graphical and diagrammatic presentations.

Types of Correlation, regression analysis linear - nonlinear, frequency distribution: normal, binomial and poisson, parametric test Z-test, t-test, F test, analysis of variance(ANOVA) and analysis of covariance (ANCOVA) and non-parametric tests

Data analysis with SPSS: various types of data and data input into data editor, linear regression and correlation, analysis of variance using SPSS

Section- B
(Subect)

1. Basic Medical Sciences

Organization and regulation of motor system, control system of body (Motor and sensory) structure and function of cardio vascular, respiratory and endocrinal system

2. Applied Basic Sciences

Basics of radiology with respect to imaging of musculoskeletal system, pathology and pharmacological management of the disorders of Musculoskeletal, Nervous, Cardiovascular and Respiratory systems

3. Biomechanics

Principle, methods and role of Biomechanics and kinesiology in Physiotherapy, biomechanics of upper limb, lower limb, spine, gait analysis

4. Exercise Physiology

Bioenergetics of exercise, nutrition and metabolism, response of exercise to cardio respiratory system, hormonal response to exercise, acid base balance, exercise in metabolic disorders

5. Therapeutics

Principles and methods and advances in exercise therapy, Principles and methods and advances in electrotherapy, Principles, methods and advances in manual therapy, Principles and methods of orthotics and prosthetics

6. Evaluation

Principles and methods of examination of Musculoskeletal, Nervous, Cardiovascular and Respiratory systems, assessment and documentation, disability evaluation, advanced evaluations tools

7. Treatment Methods

Physiotherapy management of disorders of Musculoskeletal, Nervous, Cardiovascular and Respiratory systems

