DEPARTMENT OF PHYSIOTHERAPY

PUNJABI UNIVERSITY PATIALA
(Established under Punjab Act No 35 of 1961)

Syllabus for Ph. D. Entrance Test for Session 2026-27

SECTION-A
(RESEARCH METHODOLOGY)

Research Methodology and Biostatistics

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-A

(SUBJECT)

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