

**Department of Sports Science**  
**Punjabi University, Patiala**  
**Syllabus for Ph.D. Entrance Test- 2023-24**  
**Section A**  
**(Research Methodology)**

**1. Research Methodology and Publication Ethics**

Meaning of Research, Need, Importance and scope of Research in physical Education. Types of Research. Survey of Related Literature, Need for Library search, Library Sources, Preparation of Bibliography and Abstracts. Formulation and Development of Research Problem: Location of Research problem, Criteria in selecting the research Problem. Formulation of Hypothesis, Null and Alternate Hypothesis, Assumptions and Limitations, Delimitations. Historical Research, Scope of Historical Research in Physical Education, Historical evidence, Validity of Historical data. Philosophical Research: Brief introduction. Survey Studies: Places of survey Research, Tools of Survey Research. Questionnaire and Interviews, Case Studies: Definition of Case Studies, Importance of Case Studies, Characteristics of Case Studies. Experimental Research: Meaning, Scope and Nature, Control of Experimental factors. Experimental Designs. Research proposal and preparation of research report. Publication ethics: definition, Introduction and importance. Publications misconduct : definition, concept, problems that lead to unethical behavior and vice versa, types.

**Section-B**  
**(Subject)**

**2. Philosophy of Physical Activity**

Philosophy its need in Physical education, Idealism, Naturalism and Pragmatism in Physical Education. Physical Education in Ancient Greek, Rome, India and Modern India History of Olympic games, Asian Games, SAARC games and SAF games, National Sports Awards.

**3. Fundamental Nutrition**

Nutrition General introduction, nutritional requirements of body. Nutrients and other constituents of food. Macronutrients & micronutrients . Concept of balanced diet. Nutrition & Health related fitness. Digestion & absorption of carbohydrates, fats & protein.

**4. Basics of Kinesiology**

Importance of biomechanics. Introduction to various mechanicals terms. Lever, classes of levers, and application of levers in sports.

**5. Body Joint**

Definition of Joints, classification of joints. Structure and function of different joints of the upper & lower limb. Basic structure of synovial joint. Classification of synovial joints.

**6. Blood**

Red blood cells, production, White blood corpuscles-general characteristics and function. Physiology of coagulation.

**7. Introduction of Sports Science & Physical Education**

Brief history of Sports events for men & women. Sports Science and Physical Education, Health related and motor fitness, health & wellness (Physical mental, psychological, social and spiritual) and athletics.

**8. Applied Sports Science**

Effect of high altitude on Sports performance, effect of exercise on carbohydrate metabolism, sports training, Meso & Micro cycles, load & periodization, Fatigue, warm up, cool down..

**9. Sports Injuries**

Definition & classification of sports injuries, first Aid, Medical concerns of Athlete, protective equipment, prevention through fitness, Environmental factors of sports injuries, injury Assessment, Sports medicine team. Importance of Physical fitness

**10. Sports Injury Management**

Cryotherapy: what is Cryotherapy? Ice massage, Ice Packs & contoured cry cuffs commercial gel & chemical packs. Thermotherapy: What is Thermotherapy? whirlpool and immersion Baths, Hydro collateral Packs, Paraffin baths, contrast baths, Diathermy, Ultrasound. Phonopheresis, Iontopheresis, Intermittent compression Units, continuous passive motion (CPM)

**11. Yoga**

Yoga, exercise and Asanas, meditation, pranayam, yoga & stress, yogic techniques for mental and Physical Relaxation.