

Physical Education

PhD Entrance Exam Syllabus

UNIT – I

Research methodology and statistics

- 1.1** Research Methodology: Meaning of Research, Objectives of Research, Motivations in Research, types of Research, Research Approaches, Significance of Research, Research Methods v/s Methodology, Research and Scientific Methods, Research Process, Criteria of Good Research. Basic principles of Experimental Design, various methods of Research. Survey, Philosophical, Historical, Experimental, Causal Comparative, Genetic, Case Studies.
- 1.2** Concept and Calculation of Measures of Central Tendency, Measures of Variability, t-ratio (Correlated and Uncorrelated). Product moment correlation, Rank order correlation, Partial Correlation, Multiple Correlation, Prediction and Wherry Dolittle method, Chi Square, Contingency Coefficient.
- 1.3** Statistics: Sampling Distribution, Null Hypothesis- Alternative Hypothesis. Testing the Significance of difference between means (z and ‘t’ test), Analysis of Variance (ANOVA) and Analysis of covariance (ANCOVA) - concept and applications only.

UNIT – II

Exercise physiology and anatomy

- 1.1** Meaning, Need and importance of anatomy and physiology in the field of physical education. Introduction of cell and tissues, the arrangement of the skeleton- Axial system & appendicular system - joints of the body and their types.
- 1.2** Heat balance – temperature regulation and heat disorder – physiological responses to cold, Mechanics of Breathing – Respiratory Muscles, Minute Ventilation – Ventilation at Rest and During Exercise.
- 1.3** Training effects – factors influencing training effects, Performance at altitude – Athletic performance at altitude – training and altitude. Exercise and training for health and fitness – causes and risk factors of cardiovascular diseases – the exercise prescription. Environmental aspects.

UNIT – III

Test and measurements

- 1.1** Meaning and Definition of Test and Measurement, Need and Importance of Test and Measurement, Basic principles of Test and Measurement.
- 1.2** Tests of Physical Performance. Speed, Agility, Balance, Strength, Endurance, Flexibility, California, Perceptual Motor abilities, and Generality of components.
- 1.3** Tests of Physical fitness: Basic fitness test, AAHPER Youth fitness test- Physical fitness index -Sargent test-National Physical Efficiency tests- Indiana motor fitness test, -Test for High School and college men- Krausweber Tests.

UNIT – IV

Sports training and sports psychology

- 1.1 Sports training aims, task and characteristics of sports training, Principles of sports training.
- 1.2 Methods of training: weight training – isotonic, isometric, Isokinetic interval training, circuit training – fartlek training. Effects of training on physiological systems- muscle, heart – oxygen consumption, blood lactate-lung capacity, work capacity, body composition.
- 1.3 Sport Psychology- Areas of Research in Sport Psychology: Psychophysiology- Psychomotor- Socio Psychology-Psychometrics. Meaning and Definition, law of learning, types and methods of psychological relaxation. Psychological Tests: Types of Psychological Test: Instrument based tests: Pass-along test – Tachistoscope – Reaction timer – Finger dexterity board – Depth perception box – Kinesthesiometer board.

UNIT – V

Yoga and mediation

- 1.1 Yoga -Meaning – need and importance of Yoga, Historical background of yoga.
- 1.2 Types of yoga- Bhakti yoga- Kriya Yoga- karma yoga- Gnana yoga-Raja yoga- Hatha Yoga Ashtanga yoga.
- 1.3 Asanas - Definition, Aim and Objectives of Asanas- Muscular and neural Macular and neural mechanisms involved in asanas.
- 1.4 Meditation: Meaning, Techniques and Benefits of Meditation – Passive and active, Saguna Meditation and Nirguna Meditation, Neurophysiologic and psycho-physiological mechanisms involved in Meditation.

Reference Books

1. Design of Experience: Statistical Principles of Research Design and Analysis, by Robert O. Kuehl Brooks/cole.
2. Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis.
3. Wilmore, J.H. and Costell, D.L. (1999) Physiology and Sports and Exercise. Champaign IL:Human Kinetics.
- 4 David H Clarke, "Exercise Physiology" Prentice Hall Inc., Englewood cliffs, New Jersuy.
- 5 Cureton, Thomas K. `PHYSICAL FITNESS APPRAISAL AND GUIDANCE" St. Louis, the Mosby Company, 1947.
- 6 Bovard John F., Frederich W., Hagman, Parclcia E., "TEST AND MEASUREMENT IN PHYSICAL EDUCATION ", Philadelphia, W.B.,Sounders Company, 1949.
- 7 Driska, A. (2011). A brief history of sport psychology.
- 8 Kamlesh, M. L. (Jan 12, 2011). Psychology in Physical Education and Sport.
- 9 Swami Digamberji. Yoga and Physical Education, Kavivalyadhama. Konavla, India.
- 10 Dr.M.L.Gharota, Science of Yoga, Kaivalayadhama, Lonavla, India.
