**Syllabus for Ph.D Entrance Test in Physical Education for the session -2020.**

**Note 1: 10 questions to be set from unit-I and 90 questions to be set from Unit-II**

**Note 2:The Entrance Test Paper will consists of Objective Type questions (MCQ)as per following scheme.**

|  |  |  |
| --- | --- | --- |
|  **Number of Questions(MCQ)** | **Marks** | **Total duration** |
| **100** | **200** | **02 hours**  |

**Note 3: For each correct response the candidate will get 02 marks. There shall be no negative marks for incorrect response. No marks will be given for unanswered questions.**

**Unit-I RESEARCH PROCESS IN PHYSICAL EDUCATION**

**Research:** Meaning, Need, Importance, types and scope of Research in physical Education and characteristics of research in physical education.

**Research problem**: Meaning, location and Criteria in selecting the research Problem. Delimitations & limitations.

**Sampling:** Meaning of sample and population, types of sampling.

**Review of related literature**: Meaning and types, sources of literature(Primary & Secondary).

**Historical & Philosophical Research:** Meaning and sources of historical research, primary and secondary data, meaning and tools of philosophical research, Scope of Historical Research in Physical Education, Historical evidence, Validity of Historical data. Philosophical Research: Brief introduction.

**Experimental Research:** Meaning, Scope and Nature, experimental research, experimental design Control of Experimental factors.

**Experimental Designs**: Research proposal and preparation of research report.

**Survey, Study:**  Tools of Survey Research. Questionnaire and Interviews & appearance & development of questionnaire and conductive interviews.

**Case Studies:** Definition and Importance and Characteristics of Case Studies.

**Research Proposal:** Meaning and significant of research proposal/synopsis, format of a synopsis.

**Research Report:** Meaning of research report, chapterisation of thesis, title page, preliminary documents.

**Abstract :** Methods of writing full paper to present and publish, footnotes and bibliography.

**Unit-II APPLIED STATISTICS IN PHYSICAL EDUCATION**

**Statistics:** Definition of Statistics, importance of Statistics in Physical Education and Sports,

**Data:** methods of organizing data through Frequency Distribution**,** measures of Central Tendency i.e. mean median and mode.

**Variability:** Meaning,Computation of SD from Ungrouped and Grouped data. Definition and Principles of Normal curve. Properties of Normal Curve. Skewness, Kurtosis. Standard scales - Percentile scale, Z scale, T scale, 6 Sigma scale, Hull scale and Standard scores.

**Correlation:** Magnitude of Correlation. Computation of Correlation from Product Moment and Rank Difference Method. Factors affecting Reliability. t – ratio. Type I and Type II errors. One Tailed and Two Tailed Tests, One - way Analysis of Variance with equal and unequal sample size. L.S.D. and Scheffe’s Test and analysis in Physical Education and Sports.

**Graphical Representation of Data:** Meaning and advantage of graphical representation of data and principle of presentation of data, types of bar diagram, methods of preparing histogram, frequency polygon, cumulative- frequency graph, bar & Pie diagram.

 **EXERCISE PHYSIOLOGY**

**Skeletal Muscles:** Meaning, its macro and micro structure, types of muscle fibre, short and long term effects of exercise on skeletal system.

**Cardiovascular system**: Cardiac conduction system, blood circulation and its classification, cardiac cycle, factor affecting stroke volume and cardiac output, E.C.G. and effect of exercise on cardiovascular system.

 **Metabolism:** Meaning and types (aerobic & anaerobic metabolism).

**Body composition:** Meaning and techniques of assessing body composition (skin fold measurement and bio-electric impedance).

**Respiratory System:-** Meaning of respiration, respiratory muscle and their function, mechanism of breathing, mechanism of exchange of gases in the lungs and tissues, ventilation at rest and during exercise and effect of exercise on respiratory volumes.

**Environment and exercise:** Sports performance in hot climate, physiological changes while exposing to hot climate, sports performance in cold climate, physiological changes while exposing to cold climate, and exercising at high altitude with its effects on body.

 **SPORTS TRAINING**

**Sport Training:** Definition, Aims, tasks and Characteristics of Sports Training, Principles of Sports Training, meaning of training load and its types, Important features of Training load, its components and its principles,

 **Adaptation & Over load**: Meaning and conditions for adaptation, meaning, causes, Symptoms and tackling of over load.

**Strength & Speed**: Meaning and forms of strength and speed, factors affecting strength, speed and methods of improving Strength and speed.

**Flexibility & Endurance:**, Meaning and forms of flexibility and endurance, factors affecting flexibility and endurance and methods of improving of flexibility and endurance.

**Technical Training:** Meaning of technique, Skill and style, meaning of motor learning, different phases of technique training, their Characteristics and implications, methods of technique training, causes and correction of technical errors.

**Periodisation:** Meaning, factors effecting periodisation, contents of periodisation, types of periodisation.

**Competition:** Meaning and importance of competition, direct and indirect preparation with psychological preparation for competition.

 **SPORT PSYCHOLOGY**

**Sport psychology:** Meaning, importance, nature and scope of sport psychology for physical educators and Coaches.

**Motor Learning:** Meaning, and factors affecting motor learning, motor development in various periods of childhood and adolescence.

**Motivation and Stress:** Meaning of motivation & strategies for motivating sports persons, meaning, causes and symptoms of stress and methods of stress management.

**Personality and its theory:** Meaning and structure of personality, Sigmund Freud, Psychoanalytic theory of personality, types theories of personality (Hippocrate’s classification, Kretschmer’s classification, Sheldon’s and Jung), trait theories of personality (Allport, cattell, & Eysenck Personality).

  **EDUCATION TECHNOLOGY IN PHYSICAL EDUCATION**

**Education Technology:-** Meaning, characteristics, types and scope of education technology in physical education & sport.

**Communication:** Meaning, features and need of communication, its process, principles and barriers in communication.

**Lesson planning:** Meaning, types and need of lesson planning, essentials and pre-requisite of lesson plan.

**Audio Visual Media:** Meaning classification and characteristics of audio visual media aids, procedure of teleconferencing/interactive video experiences in educational institution, telecast and video recording its strength and limitations.

 **SPORTS BIO-MECHANICS**

**Bio-Mechanics:** Meaning and scope of bio-mechanics in physical education, definition of terms such as displacement, velocity, speed, acceleration, mass and weight.

**Motion;** Meaning and types of motion and Newton’s law of motion and their application in sport.

**Lever, force & friction:** Meaning and types of lever, mechanical advantages of lever, meaning, factor, types and properties of force, meaning and factor affection friction.

**Equilibrium & Projectile:** meaning, types and principles of stability, meaning and charactertics of projectile with its range, height and time.

Mechanical analysis of gait cycle, walking and running, Long Jump (take off and landing) and Shot put (power position and delivery Phase).