

302. PHYSICAL EDUCATION

PART – A

RESEARCH METHODOLOGY AND STATISTICS

Unit 1 : - Introduction

1. Meaning and definition of Research
2. Need, Nature and Importance of Research
3. Scope of Research
4. Characteristics of good research
5. Qualities of a good research scholar

The Research Problem

1. Locating the Problem and Criteria in selecting the problem
2. Limitation, Delimitation Statement and Significance of the Problem
3. Formulation of Hypothesis.

Review of Related Literature

1. Library Sources
2. Research reviews, Cards catalogue, Indices, Abstracts, Bibliography etc.

Unit II : - Methodology

Methods of Research

1. Historical Research: Primary and Secondary sources, evaluation of Historical material, Criticism and pitfalls in the Historical research.
2. Experimental Method
3. Experimental Design – Single / Parallel groups design, repeated measures design: Static group comparison design, random group design related group design, factorial design.
4. Survey method
5. Data collection procedure
6. Questionnaire method – Interview Method : Opinionnaire method
7. Case study Method.

Unit III : - Research Proposal

1. Design of the study (Schematic Presentation)
2. Tools – available equipments and instruments for research
3. Sample – sampling method (Simple, Stratified, Multiple and Purposive sampling)

Research Report:

1. Mechanics writing the research report
2. Preliminary of front material, Main Body, Back Materials
3. Critical Evaluation of Completed Research, Preparation of Abstract

Unit IV : -

1. Measures of Central Tendency, graphical representation of data,.
2. Probability Curve – “t” test, test of significance, level of significance
3. Variables – dependent, a) Product Movement Correlation
b) Rank difference Correlation
4. Partial and Multiple Correlation and Computation of Partial Multiple Correlation

Prediction and Wherry – Dpp – Little Method

1. Meaning and Prediction
2. Two Variables regression equation
3. Multiple regression equation in Physical Education
4. Wherry – Doo – Little method of Multiple correlation

UNIT – V Analysis of Variance - ANOVA

1. Need and use of ANOVA
 2. Standard Deviation of Combined Samples
 3. One – way analysis of variance
 4. Post – Hoc Tests of Significance
- Analysis of Co – variance – ANACOVA
1. Need and use of analysis of covariance
 2. Problem and control covariance
 3. Use of computer for data analysis

PART B

Sports Psychology

Unit I : - History of Sports Psychology

Meaning , Definition, Nature, and scope of Psychology in sports. Branches of psychology in sports (Experimental, Clinical and Educational Psychology) – Need and importance of Psychological preparation in various games and sports.

Emotional Aspects of Sports:

Emotional - Nature of emotion - types of emotions - factors effecting emotions – control of emotions in sports – adjusting emotions in sports mental activity and sports related goals.

Unit II : - Personality Development and Behavior

Growth & Development of personality - assessment of personality in sports - Types of personality - personality in athletics – intelligence – Theories intelligence – Theories of intelligence – Measurement of Intelligence - theories of play – behavior – Its nature, Meaning Definition and behavioral pattern of sports persons and spectators.

Unit III : - Anxiety - Coaching Interventions

Anxiety - Nature and meaning - cause and effect of Anxiety - Types of anxiety - assessment of anxiety in sports – measures of control anxiety - Dimensions and evaluation of Pre – competition, during competition and post competition anxiety levels.

Aggression and Hostility

Aggression in sports – Degrees of aggression - reasons for aggression in sports - control of aggression - Hostility – Frustration – Models of Frustration.

Unit IV : - Arousal - Activation and Performance

Nature – Need and importance of arousal and activation in sports - Drive Theory - Emotional and cognitive accompaniments to activation recurrent emotions and activation - assessment of activation – anticipation - Levels of anticipation in sports.

Motivation and learning

Motivation in sports – theories of motivation - motivation of children in sports – Achievements motivation – Intrinsic and extrinsic motivation – Levels of aspiration and

participation in sports - Drop outs in sports - Learning – Theories of learning – Laws of learning – Motor learning - Learning Curve – nature and process of Learning and performance.

Unit V : - Socio - Psychological dimensions in sports

Sports performance in groups – team cohesion - attitude formulation - development of attitudes – factors influencing attitudes in sports - Leadership – Qualities of a good sports leader – types of leadership - Theories of leadership – Characteristic of leadership – leadership dimensions in sports.

Guidance and Counseling in sports.

Nature and scope of Guidance and Counseling in sports - Physical Education Teacher /Coach as a guide and counselor - duties and responsibilities - principles and functions of vocational guidance – guidance as a continuous process – levels of adjustment and spans enrichment - counseling for improving Sports performance.

Sports Bio – Mechanics

Unit I :-

Introduction and need of knowledge of Bio – Mechanics in professional preparation. Nature and scope of Bio – Mechanics in Physical Education and Sports.

Unit II : - Movement and Mechanics in the Body

Concept of Application of Mechanics in Sports - Static and Dynamic Balance (Equilibrium) Force – Movement of Force – Centripetal and Centrifugal Force, Force of Gravity, Friction. Impact and Elasticity levers. Newton’s law of motion – Velocity and Acceleration – Types of Motion – Rotary and Linear - Angular Kinetic – Angular Kinetics Motions – Linear Kinetics Kinematics – center of Gravity - Falling bodies - path of Projectiles.

Unit – III : Hydro Dynamic Constructs

Concept and Application of Mechanics in Aqua Media Sports - Flootation – Buoyant Force – Specific Gravity – Center of Buoyancy Rotative motion – Fluid resistance – Gyroscopic Action.

Guiding Principles derived from the application of the above mechanical concepts in the Aqua Media Sports.

Unit IV : - Aero - Dynamic Constructs.

Concepts and applications of Mechanics in the Air Media – Wind resistance – Spin and Gyration – Surface drag – Form drag – lift and the Magnus effect.

Unit V :-

Principles of Cinematographic Analysis – Application of Cinematographic and video analysis – motor ideograms – avoidance of errors of measurements.

Bio – mechanics analysis of the following activities - Running, Jumping, Throwing, Service, Tennis, Basketball, Football, Hockey and Volley ball.

Exercise Physiology and Sports Medicine

Unit I : - Muscular System and Exercise

1. Types of Muscles, Reciprocal innervation – Types of Contraction Muscles tone – Hypertrophy of muscles in relation to Physical Activity.
2. Bio energies, fuel for muscular work, Energy and Metabolism
3. Effect of Exercise on Muscular systems.

Unit II : Respiratory and Exercise.

1. Structure and Properties of lungs – Mechanism of Respiration – Gaseous Exchanges and Pulmonary Ventilation – Transport of Oxygen and Carbon dioxide.
2. Effect of Exercise on respiratory system.

Unit III. Circulatory System and Exercise.

1. Heart – Structure – Circulation of Blood, Arteries, Veins, Capillaries
2. Types of Circulation – Pulmonary Circulation,....Systemic Circulation.
3. Coronary Circulation – Portal Circulation.
4. Effect of Exercise on heart and circulatory system.

Unit IV : Other Physiological aspects of Exercise and Sports.

1. Concept of Physical fitness and Physical Training - warming up and conditioning - physiological aspects of development of strength endurance, skill, Speed, agility and coordination.
2. Sex differences and aging in relation to training methodology
3. Ergogenic Aids in Exercise and Sports.
4. Nutrition aspects.
5. Balanced diet and athletic performance – Effect of Alcohol, Drugs and smoking on Athletic performances.

Unit V : Role of Sports Medicine.

1. Introduction, history and development - Injuries and therapeutic management.
2. Measurement and evaluation
Muscular strength and Endurance, Cardio Vascular Variables, Tests of Cardio Vascular fitness.
