

## **Physical Education**

### **Unit –I:**

Meaning, definitions and Objectives of Physical education and adapted physical education, Philosophies of education as applied to physical education

Historical Development of Physical education in Greece, Rome and Germany

Historical Development of physical education in India before and after Independence

Meaning, definitions and Objectives of Recreation, principles and characteristics of Recreation. Modern trends in recreation. Indoor and outdoor recreational programmes applicable in Schools and Colleges. Recreational programmes for various categories of people.

Ancient Olympics Games: The significant stages in the development of the Ancient Olympic movement, Politics and Religion of Ancient Olympics, Opening ceremony, Different Events of Ancient Olympics, Participants of Various events, Prizes for winners, Decline and Termination of the ancient Olympics.

Modern Olympics games: Revival of Olympic Games, Olympic Symbols: Motto, Rings, Flag, Medals, Flame, Torch Relay and Anthem, Opening ceremony, Closing ceremony, medal ceremony, Structure and Functions of International Olympic Committee.

Historical development and participating countries of Asian and Commonwealth games

Structure and functions of international and national bodies controlling various games and sports, Prominent honours and awards for athletes and coaches in games and sports in India and International level.

### **Unit -II:**

Meaning and Definitions of Exercise physiology, Scope and importance of Exercise Physiology in the field of physical education and sports.

Anatomy and Physiology of various Systems of Human Body: Skeletal, Muscular, Nervous, Endocrine, Cardiovascular, Respiratory, Digestive and Excretory systems.

Long- term and short-term effects of various types of physical activities and sports on the Skeletal, Muscular, Nervous, Endocrine, Cardiovascular, Respiratory, Digestive and Excretory systems.

Microscopic structure of muscle fiber. Sliding filament theory of muscular contraction. Types of muscle fibers and sports performance. Muscular adaptations to exercise.

Aerobic and anaerobic metabolism systems during rest and exercise. Direct and indirect methods of measuring energy cost of exercise.

Recovery process - Physiological aspects of fatigue. Restoration of energy stores.

Physiological effects of doing exercise in Hot, Cold and Humid environment. Effect of Hot, Cold and Humid environment on the sports performance.

### **Unit- III:**

Meaning and Definitions of Kinesiology and biomechanics. Modern trends in biomechanics. Various Axis and Planes of human body. Fundamental movements of human body with their axis and planes.

Various types of joints present in human body, Basic Structure of Synovial Joint. Structure, ligaments and muscles of Shoulder, Elbow, Hip and knee joint. Origins and insertions of various major muscles of Upper and lower extremities.

Motion: its laws and their application in sports. Characteristics of Projectile and principles of projections.

Levers: Meaning, Types, Concept of Mechanical Advantage and Application levers system in Human Body and sports

Meaning of Force, Types of Forces, Newtons Law of Universal Gravitation. Meaning and application of Friction Force, Centripetal Force, Centrifugal Force, Torque and Impulse in sports

Meaning and application of Concept of Centre of Gravity, Line of Gravity, Stability and Equilibrium in sports

Meaning of Spin, Types of Spin, Effect of various types of Spin on Movement ball in Air, Angle of rebound, velocity of rebound, Magnus Effect and Bernoulli's effect.

Principle of Floatation, Concept of Drag and Lift.

Kinesiological, Muscular and mechanical analyses of fundamental movements. Mechanical analyses of Running and Walking

### **Unit – IV:**

Sports psychology- its importance in the field of physical education and sports.

Motivation in sports- Meaning, types, theories of Motivation and their application in sports

Meaning of Learning, Learning Curve, Theories of Learning: Classical Conditioning, Operant Conditioning, Trial and Error Learning, application learning theories in sports.

Personality- Meaning, Dimensions of Personality, Theories of personality: Psychodynamic, Behavioral Theory, Trait Theory and Phenomenological Theory, Measurement of personality.

Psychological factors affecting sports performance- Emotions, Anxiety, Aggression, Stress, Self Confidence, Concentration, Mental Toughness and Goal Setting.

Meaning and Principles of Group dynamics and Group Cohesion.

Meaning and Application of Cognitive process- memory and thinking in sports.

Transfer of training and its types with its implication in sports.

Long-term and short-term psychological preparation for performance/ competition.

Psychological skill training for activation and relaxation

## **Unit -V:**

Development of teacher education for physical education in India. Comparative study of professional preparation in physical education of India with those of USA, Russia, Germany, Australia and UK.

Professional and other courses of physical education in India. Role of Government agencies monitoring professional courses in physical education.

Qualities, qualifications and responsibilities of physical education personnel at primary, secondary and higher education levels. Scope of physical education personnel in the promotion of health, fitness and wellness.

Recent Government policies for promoting physical education and sports in India. Hierarchy of organizational set-up in physical education at schools, colleges and university level.

Role of public & private sectors in the promotion of physical education and sports in the country.

Curriculum development- Concepts and principles of curriculum planning. Subject matter for different levels of education - primary, secondary and higher education.

Curriculum design and content- importance, selection and classification of subject matter with reference to age, sex and differently abled pupils. Integrated programme for boys and girls.

Various teaching aids used in the Physical Education and sports, Principles of Time-table applicable to Physical Education and Sports.

Concepts of credit system, It's application on Theory and Practical's of Physical education and Sports. Impact of teaching technology in physical education and sports,

Curriculum evaluation: Concepts and purpose; procedure and appraisal.

## **Unit -VI:**

Health- its objectives and dimensions. Health education: its importance and principles. Role of genetics and environment in achieving health. Health-related physical fitness.

Community health programme- Health appraisal & health instructions. International and national health promoting government & private agencies.

Communicable and non-communicable diseases: causes, symptoms, prevention through other means and Immunization.

Obesity and its related health problems. Body weight control and its significance on health. Role of exercise, dieting and combination of exercise & dieting on weight control.

First-aid: objectives and principles. First-aid: Objectives and principles. First Aid for Shock, poisoning, burns, drowning, bleeding, electric shock and common sports injuries.

Pollution: Air, water, sound and radiation. Effects of pollution on health, Preventive and safety measures from pollution.

Nutrition: Balanced diet and its components. Balance diet for various categories of sports with special reference to the training.

Posture: Various Posture deformities and their corrective exercises.

Ergogenic aids: Meaning and types of Ergogenic aids used in sports.

Doping: Prohibited Substances and Methods during and out of competitions. Side effects of doping.

## **Unit -VII :**

Sports training- its characteristics and principles. Training load: features, principles and adaptation process. Means and methods of executing training load. Overload: Causes, symptoms and remedial measures.

Strength: Meaning, types, factors determining strength and Methods of strength development.

Endurance: Meaning, types, factors determining Endurance and Methods of Endurance development.

Speed: Meaning, types, factors determining speed and Various Methods of speed development.

Flexibility: Meaning, types, factors determining flexibility and Methods of flexibility development.

Coordinative abilities: Meaning, types of coordinative abilities, factors determining coordinative abilities and development of coordinative abilities.

Technique and skill: its characteristics and importance. Different stages of technique development and technique training.

Tactics and strategy: its characteristics and importance. Different stages of Tactical training.

Planning: its importance and principles. Types of planning.

Periodization: its importance, objectives and types of periodization. Objectives and Significance of different periods: Preparatory, competition and transitional.

Talent identification: process and procedure

## **Unit -VIII:**

Research in physical education: its importance and classification. Ethical issues in research.

Methods of research: Descriptive, historical and experimental. Experimental research designs used in Physical Education.

Identification and formulation of research problem. Types of research hypotheses and their formulation. Hypotheses testing.

Tools of research- Questionnaires, opinionnaires, interviews and observation.

Sources and steps of literature search: library, research data bases, internet- search engines, online journals. Note taking and critical reading.

of Research Proposal and Research report.

Sampling Techniques: Probability and non-probability.

Normal probability curve: Characteristics and Measures for deviation from normality. Various Standard Scores.

Statistical processes, their importance and uses in research. Application of parametric and non-parametric statistical techniques in research.

Computer applications- statistical packages for data analyses- SPSS, e-mail, search engines and Microsoft office.

Structure and Contents of research proposal, research report, abstract, paper for publication and paper for presentation.

## **Unit - IX:**

Test, measurement and evaluation: their types and importance in physical education and sports. Principles and processes of evaluation in physical education.

Technical and Practical Criteria of selecting an appropriate test.

Procedure for construction of standard knowledge and skill tests.

Tests for fitness: Physical fitness, Motor fitness, Motor ability and Motor educability. Health related fitness tests.

Test for fitness components: strength, endurance, speed, flexibility and coordinative abilities.

Sports skill tests: Badminton, Basketball, Football, Hockey, Tennis, and Volleyball.

Anthropometric Measurements: land marks and measurement of various body segments ,height, sitting-height, weight, diameters, circumferences, skinfolds, body mass index, ponderal index.

Somatotype and Posture evaluating techniques.

Tests for psychological variables- Anxiety, aggression, team cohesion, achievement motivation, mental-toughness, and self-efficacy.

## **Unit - X:**

Management: Concept, Principles and Theories applicable in Physical Education and sports. Scope of management in physical education and sports. Guiding principles for organizing physical education & sports programmes in institutions.

Personnel management: objectives and principles. Self-appraisal, communication skills and time management. Essential skills of administration.

Financial management: objectives, purposes, principles and scope. Planning and preparation of budget. Mechanics of purchase and auditing.

Supervision: Concept, objectives, principles and importance of supervision. Techniques of supervision. Duties and responsibilities of a supervisor.

Facility management: planning, procuring and maintenance of facilities. Planning, Construction and management of sports infrastructure. Management of records.

Role of sports manager: interpersonal, informational and decision making. Managerial skills: technical, human and conceptual. Qualities and qualification of sports manager.

Event management: its principles, planning, check list, rehearsal, itinerary, execution, reporting and follow-up procedures of an event.

Public relation: principles of public relations in physical education and sports. Mass Media-communication and publicity, qualifications of Public relation officer.

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