



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్  
भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

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## **SYLLABUS FOR THE POST OF PHYSICAL TRAINING INSTRUCTOR WRITTEN EXAMINATION**

### 1. History and principles of physical education.

Objectives, principles and components of physical education; Indian Olympic Association and International Olympic Committee; role of different agencies in promoting health (WHO, UNICEF, Local Bodies).

### 2. Anatomy and physiology

Benefits of physical activities, concepts and components of total fitness, principles of physical fitness, warming up, conditioning, and cooling down, methods to develop and measure health and skill related components of physical fitness. Calorie Intake and expenditure, energy balance equation, role of personal hygiene, mental hygiene, sleep hygienic, occupational hygiene in physical education and sports.

Definition and description of cell, tissue, organs and body systems, brief introduction to skeletal system, muscular system, circulatory system, respiratory system, digestive system, excretory system, nervous system and endocrine system, with respect to sports.

Physiological factors affecting the development of physical fitness components. Concepts of fatigue, stitch, cramp, oxygen debt, second wind. Maximum heart rate, vital capacity, stroke volume, temperature regulation.

Kinematics of human motion.

### 3. Health education

Concept of nutrition, balanced diet, Dietary Aids.

Types and causes of scoliosis, lordosis, knock knees, bow knees, flat foot, and corrective exercises.

Concepts and significance of, and factors causing injuries, and their general principles of prevention. example, common sport injuries include strain and muscle and ligament sprain, frozen shoulder, lower back strain, tennis and golfer's elbow, runner's knee, shin pain, blister, concussion, laceration, abrasion, hematoma, fracture, dislocation.

Management of injuries (strain and muscle and ligament sprain, frozen shoulder, lower back strain, Tennis and Golfer's elbow, Runner's knee, shin pain, blister, concussion, laceration, abrasion, fracture, dislocation). Sport injuries and first aid.

Aims and objectives of rehabilitation; recovery methods (ice bath, contrast bath, hot fomentation). Therapeutic modalities (e.g. but not exclusive to therapeutic ultrasound, inferential therapy unit, TENS infrared lamp, short wave diathermy).

4. Educational methods and coaching