

Paper 1 revision list

Paper 1 – Revision List

Skeletal System

Learners must:

- know the name and location of the following bones in the human body:
 - cranium
 - vertebrae
 - ribs
 - sternum
 - clavicle
 - scapula
 - pelvis
 - humerus
 - ulna
 - radius
 - carpals
 - metacarpals
 - phalanges
 - femur
 - patella
 - tibia
 - fibula
 - tarsals
 - metatarsals.
- understand and be able to apply examples of how the skeleton provides or allows:
 - support
 - posture
 - protection
 - movement
 - blood cell production
 - storage of minerals.
- know the definition of a synovial joint
- know the following hinge joints:
 - knee – articulating bones – femur, tibia
 - elbow – articulating bones – humerus, radius, ulna
- know the following ball and socket joints:
 - shoulder – articulating bones – humerus, scapula
 - hip – articulating bones – pelvis, femur.

Learners must:

- know the types of movement at hinge joints and be able to apply them to examples from physical activity/sport:
 - flexion
 - extension
- know the types of movement at ball and socket joints and be able to apply them to examples from physical activity/sport:
 - flexion
 - extension
 - rotation
 - abduction
 - adduction
 - circumduction.
- know the roles of:
 - ligament
 - cartilage
 - tendons.

Muscular System

Learners must:

- know the name and location of the following muscle groups in the human body and be able to apply their use to examples from physical activity/sport:
 - deltoid
 - trapezius
 - latissimus dorsi
 - pectorals
 - biceps
 - triceps
 - abdominals
 - quadriceps
 - hamstrings
 - gluteals
 - gastrocnemius.
- know the definitions and roles of the following and be able to apply them to examples from physical activity/sport:
 - agonist
 - antagonist
 - fixator
 - antagonistic muscle action.

Movement Analysis

Learners must:

- know the three classes of lever and their use in physical activity and sport:
 - 1st class
 - neck
 - 2nd class
 - ankle
 - 3rd class
 - elbow
- know the definition of mechanical advantage.
- know the location of the planes of movement in the body and their application to physical activity and sport:
 - frontal
 - transverse
 - sagittal
- know the location of the axes of rotation in the body and their application to physical activity and sport:
 - frontal
 - transverse
 - longitudinal.

Cardiovascular and Respiratory System:

- know the double-circulatory system (systemic and pulmonary)
- know the different types of blood vessel:
 - arteries
 - capillaries
 - veins
- understand the pathway of blood through the heart:
 - atria
 - ventricles
 - bicuspid, tricuspid and semilunar valves
 - septum and major blood vessels:
 - aorta
 - pulmonary artery
 - vena cava
 - pulmonary vein
- know the definitions of:
 - heart rate
 - stroke volume
 - cardiac output
- know the role of red blood cells.
- understand the pathway of air through the respiratory system:
 - mouth
 - nose
 - trachea
 - bronchi
 - bronchiole
 - alveoli
- know the role of respiratory muscles in breathing:
 - diaphragm
 - intercostals
- know the definitions of:
 - breathing rate
 - tidal volume
 - minute ventilation
- understand about alveoli as the site of gas exchange.
- know the definitions of:
 - aerobic exercise
 - anaerobic exercise
- be able to apply practical examples of aerobic and anaerobic activities in relation to intensity and duration.

Effects of exercise on the body

- understand the short-term effects of exercise on:
 - muscle temperature
 - heart rate, stroke volume, cardiac output
 - redistribution of blood flow during exercise
 - respiratory rate, tidal volume, minute ventilation
 - oxygen to the working muscles
 - lactic acid production
- be able to apply the effects to examples from physical activity/sport
- be able to collect and use data relating to short-term effects of exercise.
- understand the long-term effects of exercise on:
 - bone density
 - hypertrophy of muscle
 - muscular strength
 - muscular endurance
 - resistance to fatigue
 - hypertrophy of the heart
 - resting heart rate and resting stroke volume
 - cardiac output
 - rate of recovery
 - aerobic capacity
 - respiratory muscles
 - tidal volume and minute volume during exercise
 - capillarisation
- be able to apply the effects to examples from physical activity/sport
- be able to collect and use data relating to long-term effects of exercise.

Components of Fitness

Know the following components of fitness:

- cardiovascular endurance/stamina
 - know the definition of cardiovascular endurance/stamina
 - be able to apply practical examples where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - Cooper 12 minute run/walk test
 - multi-stage fitness test
- muscular endurance
 - know the definition of muscular endurance
 - be able to apply practical examples where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - press-up test
 - sit-up test
- speed
 - know the definition of speed
 - be able to apply practical examples where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - 30m sprint test
- strength
 - know the definition of strength
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - grip strength dynamometer test
 - 1 Repetition Maximum (RM)
- power
 - know the definition of power
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - 'standing jump' or 'vertical jump' tests
- flexibility
 - know the definition of flexibility
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - 'sit and reach' test
- agility
 - know the definition of agility
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - Illinois agility test
- balance
 - know the definition of balance
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - 'stork stand' test
- co-ordination
 - know the definition of co-ordination
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - 'wall throw' test
- reaction time
 - know the definition of reaction time
 - be able to apply practical examples of where this component is particularly important in physical activity and sport
 - know suitable tests for this component, including:
 - reaction time ruler test
- be able to collect and use data relating to the components of fitness.

Applying Principles of Training

- know the following definitions of principles of training and be able to apply them to personal exercise/training programmes:
 - specificity
 - overload
 - progression
 - reversibility.
- know the definition of the elements of FITT (Frequency, Intensity, Time, Type) and be able to apply these elements to personal exercise/training programmes
- know different types of training, definitions and examples of:
 - continuous
 - fartlek
 - interval
 - circuit training
 - weight training
 - plyometrics
 - HIIT (High Intensity Interval Training).
- understand the key components of a warm up and be able to apply examples:
 - pulse raising
 - mobility
 - stretching
 - dynamic movements
 - skill rehearsal
- know the physical benefits of a warm up, including effects on:
 - warming up muscles/preparing the body for physical activity
 - body temperature
 - heart rate
 - flexibility of muscles and joints
 - pliability of ligaments and tendons
 - blood flow and oxygen to muscles
 - the speed of muscle contraction
- understand the key components of a cool down and be able to apply examples:
 - low intensity exercise
 - stretching
- know the physical benefits of a cool down, including:
 - helps the body's transition back to a resting state
 - gradually lowers heart rate
 - gradually lowers temperature
 - circulates blood and oxygen
 - gradually reduces breathing rate
 - increases removal of waste products such as lactic acid
 - reduces the risk of muscle soreness and stiffness
 - aids recovery by stretching muscles.

Preventing Injury in and Physical Activity and Training.

- understand how the risk of injury in physical activity and sport can be minimised and be able to apply examples, including:
 - personal protective equipment
 - correct clothing/footwear
 - appropriate level of competition
 - lifting and carrying equipment safely
 - use of warm up and cool down
- know potential hazards in a range of physical activity and sport settings and be able to apply examples, including:
 - sports hall
 - fitness centre
 - playing field
 - artificial outdoor areas
 - swimming pool.