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Physical Education

Last Minute Suggestion

[500 Most Important Key Points]

1. Concept of Plato regarding Physical education

Ans. "lack of activity destroys the good condition of every human being". [Plato]

2. Concept of Nixon and Cozen about Physical Education?

Ans. Physical Education is that phase of the whole process of education which concern with the vigorous muscular activity and related responses. [Nixon & Cozen]

3. Concept of Jay B Nash on Physical Education

Ans. Physical Education is the phase of the whole field of education that deals with big muscle activities and there related response. [Jay B Nash]

4. View of J.P. Thomas on Physical Education

Ans. Physical Education is education through physical activities for the development of total personality of the child and its fulfilment and perfection in the body. [J.P. Thomas]

5. According to Charles A. Bucher, the objectives of Physical Education

Ans. Objectives of [i] Physical development [ii] motor and movement development [iii] Cognitive and mental development [iv] social development. [C A Bucher]

6. Concept of Idealism in the field of Physical Education

Ans. This interprets events and creates reality, truth and values are absolute and universally shared. Idealism emphasizes the mind as a central understanding. Mind is the focus of person's being.

7. Concept of Realism in the field of Physical Education

Ans. [i] Nature is in control and education is for life, [ii] Physical Education and sport is valuable because is contribution to health, [iii] a healthy person can lead a life and be more productive.

8. Golden age of Greece

Ans. The Greeks strove for Physical Education systems and on painting no country has held Physical Education or sports in such high respect as did ancient Greece. They focus on Gymnastic and music. They believe '**exercise for the body and music for the soul**'.

9. Physical education in Rome

Ans. They did not believe in Body beautiful concept they need something bloody, ghastly and cruel activity.

10. Physical education in Sweden

Ans. **Per Henrik Ling (1776-1839)** is the symbolic of the rise of Physical Education to a place of importance in Sweden. They believe Physical Education was necessary for weak persons as well as strong persons.

11. Physical education Russia

Ans. The great legend **V.A. Blyakh** expressed on health, strength, dexterity, boldness presence of mind and quickness of action.

12. Physical Education in China

Ans. In China Sports and physical education policy in transition **(1957–1965)** Sports were officially identified as an important part of school education in the socialist period after the People's Republic of China was founded

13. Basic Factors which affecting human growth and development.

[i] Genetic factors **[ii]** Environmental factors **[ii]** Nutritional factors **[iv]** Specific programmes of Physical Education.

14. What do you mean by Anatomical age

Anatomical age is a measure of **the stage of physical development of an individual**, based on the condition of certain skeletal features as compared with the normal state of the bones for a specified chronological age it can also called physical age.

15. What do you mean by Physiological age

Ans. Physiological changes occur due to aging and conditioning programme in all organ systems of our human body. Like The cardiac output, vital capacity, stroke volume, total lung capacity decreases due to aging and it can be increase or stable due systematic conditioning programme. This all physiological factors indicate the physiological age.

16. Importance of wellness in the field physical education

Ans. Physical mental social all kind of wellness is important in our field, because our body needs to be healthy in all aspects, so we can perform to the best of our ability in all areas of our life, which helps to move us in a positive way.

17. Basic Objectives of teaching aptitude.

Ans. [i] Acquisition of knowledge.

[ii] Development of Understanding.

[iii] Development of Conceptual, intellectual and subject-specific skills.

[iv] Development of values.

18. Most important characteristics of teaching in the field of Physical education

[i] Creativity. teachers must be creative in the classroom.

[ii] Organization and Attention to Detail. [iii] Flexibility. [iv] Curiosity. [v] Compassion.

19. Social values of sports in physical Education.

Sports positively works on Honesty, Commitment, Work ethic, Pursuit of personal excellence, Love of sport, Fun, Respect of self and others, being a good sport like social values.

20. The Olympic flag

Ans. Designed by Baron de Coubertin (1914), first hosted in 1920 (Antwerp, Belgium).

Five colours blue, yellow, black, green, red arranged in 'W' shape.

21. Exercise Physiology

Ans. **Exercise physiology is the study of the body's responses to physical activity.**

These responses include changes in metabolism and in physiology of different areas of the body like the heart, lungs, and muscles, and structural changes in cells.

22. Importance of exercise physiology

Ans. Exercise physiology plays an important role in the practice of clinical sports medicine. Modern Exercise physiology research has identified important effects of exercise on the body's systems, tissues, and also in subcellular, molecular, and chemical processes.

23. Cardiorespiratory adaptation works on

Ans. Heart rate, heart size, stroke volume, cardiac output, blood flow, blood pressure, blood volume.

24. Bradycardia

Ans. Due to systematic exercise when athlete's heart rate reaches 60 or less than 60 bit per minute, then its called Bradycardia. **(60 or below 60 bits/min)**

25. External respiration

Ans. External respiration is the exchange of oxygen carbon dioxide between the lunges and blood in the pulmonary capillaries.

26. Venous Blood and Arterial Blood

Ans. Venous blood low in oxygen and Arterial blood high in oxygen.

27. Internal respiration

Ans. Internal respiration is **the exchange of oxygen and carbon dioxide between blood in the 'Systemic capillaries 'and the cells via the intestinal fluid.**

28. Slow twitch muscle (ST)

Ans. **[I]** Large number of mitochondria and surrounded by more capillaries. **[ii]** more red pigments of myoglobin **[iii]** muscle fibres are comparatively small then fast twist.

29. Number of joints in our body.

There are **360 joints** in the human body. A joint is the point of attachment of two bones.

30. Short term effects of exercise

Ans. The blood carries greater amounts of oxygen and the heart responds to pump more oxygenated blood around the body. After exercising, the muscles need to rest, adapt and recover. There is a risk of injury if the body is not rested for long enough after exercise.

31. long term effects of physical activity on the cardiovascular system

Ans. During exercise, increases in cardiac stroke volume and heart rate raise cardiac output, which coupled with a transient increase in systemic vascular resistance, elevate mean arterial blood pressure.

[However, long-term exercise can promote a net reduction in blood pressure at rest.]

32. Short term effects of physical activity on cardiovascular system

Ans. Increase in stroke volume (SV); increase in heart rate (HR); increase in cardiac output (Q); increase in blood pressure (BP)

33. Short term effects of physical activity on respiratory system

Ans. Increase in breathing rate; increase in tidal volume.

34. Types of physical activity

Ans. The four main types of physical activity are **aerobic, muscle-strengthening, bone-strengthening, and stretching.**

35. Structure of a skeletal muscle fiber

Ans. Skeletal muscle fiber is surrounded by a plasma membrane called the sarcolemma, which contains sarcoplasm, the cytoplasm of muscle cells.

[A muscle fiber is composed of many fibrils, which give the cell its striated appearance.]

36. Characteristics of the three different types of muscle fibres

Ans. The 3 types of skeletal muscle fibres are:

Red / Slow (**Type I fibres**, 'slow twitch fibres')

Red / Fast (**Type IIa fibres**, 'fast oxidative fibres')

White / Fast (**Type IIb fibres**, 'fast glycolytic fibres')

37. Type 1 muscle fibres

Ans. Type I fibres are used in lower-intensity exercises such as very light resistance work aimed at muscular endurance and long-duration aerobic activities, **such as long distance running (5K and 10K runs).**

38. What are muscle fibres made of?

Ans. Muscle fibres are in turn composed of myofibrils and the myofibrils are composed of actin and myosin filaments, repeated in units called sarcomeres, which are the basic functional units of the muscle fiber.

39. Steps of a muscle contraction

Ans. **[i]** Depolarisation and calcium ion release.

[ii] Actin and myosin cross-bridge formation.

[iii] Sliding mechanism of actin and myosin filaments.

[iv] Sarcomere shortening (muscle contraction).

40. The Cross-Bridge Muscle Contraction Cycle

Ans. ATP binds to myosin, actin moves relative to myosin. The **muscle contraction cycle** is triggered by calcium **Ca⁺** ions binding to the protein complex troponin, then exposing the active-binding sites on the actin.

41. Three different types of muscular contractions

Ans. **[i]** Concentric contractions (shorten).

[ii] Eccentric contractions (lengthen).

[iii] Isometric contractions (remain the same).

42. Sliding filament theory in short

Ans. According to this theory, myosin (a motor protein) binds to actin. The myosin then alters its configuration, resulting in a "stroke" that pulls on the actin filament and causes it to slide across the myosin filament.

43. Role of acetylcholine in muscle contraction

Ans. **Acetylcholine** Is Released and Binds to Receptors on the **Muscle** Membrane, The Ca^{+} diffuses into the **muscle** fiber. The relationship between the chains of proteins within the **muscle** cells changes, leading to the **contraction**.

44. Myoneural junction

Ans. A neuromuscular junction or myoneural junction is a chemical synapse formed by the contact between a motor neuron and a muscle fiber in our body.

45. kinesthetic sense

Ans. Kinesthesia is the sense which helps us to detect weight, body position, or the relationship between movements in our body parts such as joints, muscles and tendons. In short, it is the muscle sense.

46. 6 forms of energy

Ans. Chemical, Mechanical, Heat, Light, Electrical, Nuclear.

47. Types of metabolism

Ans. Building up (anabolism) and breaking down (catabolism).

48. End products of carbohydrate metabolism

Ans. The end product of carbohydrate may be glucose, galactose or fructose.

49. End products of protein and fat metabolism

Ans. The end products of protein digestion are **amino acid** and the end product of fat digestion are **triglycerides, free fatty acids and glycerol**.

50. Our body during anaerobic exercise

Ans. Anaerobic exercise or during high-intensity training without oxygen, producing energy quick with the help of **glycolysis** process.

51. Aerobic exercise helps to control

Ans. Obesity, heart disease, high blood pressure, type 2 diabetes, metabolic syndrome, stroke and certain types of cancer, osteoporosis (long distance walking and jogging specially).

52. VO₂ max depends on

Ans **[i]** O₂ transport, **[ii]** O₂ binding capacity of blood, **[iii]** cardiac function, **[iv]** O₂ extraction capabilities, **[v]** muscular oxidative potentials

53. Muscle endurance

Ability of an isolated muscle to perform repeated contractions over a period of time.

54. BEE

Ans. Basal Energy Expenditure (**BEE**), also called basal metabolic rate (**BMR**)

It is an amount of energy used in 24 hours by person who is lying quietly, 12 hours after the last meal in comfortable temperature and environment or resting energy expenditure (**REE**) the amount of energy used by a person in 24 hours when at rest 3-4 hours after a meal.

55. Physiological aspects of fatigue.

Ans. Physiological Fatigue may be defined as physical and/or mental weariness resulting from exertion, that is, an inability to continue exercise at the same intensity with a resultant deterioration in performance.

56. 3 types of fatigue.

[i] Physical- feeling tired, like dragging or just need to rest.

[ii] Psychological /Emotional – lack of motivation to do anything

[iii] Mental fatigue- when mind goes blank.

57. Major cause of muscle fatigue.

Ans. [i] Lactic acid accumulation is the most important cause of skeletal muscle fatigue.

[ii] Inorganic phosphate, which increases fatigue, due to breakdown of creative phosphate this is another major cause of muscle fatigue.

58. Best elements and Vitamins for Less Fatigue

Ans. Vitamin B complex, Vitamin C and Fe, Mg like macro elements.

59. Recovery oxygen

Recovery oxygen (**EPOC**) is used in the processes that restore the body to a resting state and adapt it to the exercise. **EPOC** is to fuel the body's increased metabolism from the increase in body temperature, **BP**, **HR** which occurs during exercise.

60. Oxygen debt repaid

Ans. Lactic acid can only be removed in the presence of oxygen and in the case hard strenuous exercise it is essential that the oxygen debt is repaid. Large amounts of oxygen are needed for this oxygen recovery.

61. Fatty acid

Ans. Activated fatty acid oxidation, Acetyl group, Acetyl co-enzyme (NAD), Kreb's cycle and E.T.S.

62. Energy metabolism during rest

Ans. [i] Oxygen consumption during rest remains constant (approx. 0.25 litres/min)

[ii] Blood lactic acid level remains normal (10mg/100ml)

[iii] Aerobic brake down of fats and glucose all the ATP required for the body during rest.

63. Role of protein for provide energy.

Ans. 5 to 10% of total body energy is produced by protein.

64. Fundamental Axis

- [i] **Sagittal axis**; passing from anterior and posterior direction.
- [ii] **Lateral axis**; passing laterally from one side to other.
- [iii] **Vertical axis**; imaginary line which perpendicular to the ground.

65. Fundamental Plane

- Ans. [i] **Horizontal plane**; divides the body into superior and inferior part.
- [ii] **Sagittal plane**; divides the body into right and left lateral aspects.
- [iii] **Frontal plane**; divides the body in anterior and posterior

66. Arthrology

Ans. The study of joint of the body may be classified according to structure or function.

67. The classification of joints.

- Ans. [i] **Synarthrosis**; immovable joints.
- [ii] **Amphiarthroses**; Slightly movable joint.
- [iii] **Diarthroses**; Freely movable joints.

68. Saddle joints

Ans. Saddle joint is a synovial joint where one of the bones forming the joint is shaped like a saddle with the other bone resting on it like a rider on a horse. Ex. carpometacarpal joint of the thumb.

69. Condylloid joint

Ans. Condylloid joints consist of an oval-shaped end of one bone fitting into a similarly oval-shaped hollow of another bone to allow angular movement along two axes.

[Ex. Metacarpal and phalanges joint.]

70. Gliding joint

A gliding joint or plane joint is a common type of synovial joint formed between bones that meet at flat or nearly flat articular surfaces. Gliding joints allow the bones to glide past one another in any direction along the plane of the joint.

[Ex. Inner carpal inner tarsal joint.]

71. Abduction

Ans. Abduction is a motion that pulls a structure or part away from the midline of the body. In the case of fingers and toes, it is spreading the digits apart, away from the centreline of the hand or foot.

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73. Movements of the Wrist Joint.

Ans. The wrist is an ellipsoidal (condyloid) type synovial joint, allowing for movement along two axes. This means that flexion, extension, adduction and abduction can all occur at the wrist joint.

74. Movement of the shoulder joint.

The human shoulder is the most mobile joint in the body, adduction, abduction, flexion, extension, internal rotation, external rotation, and 360° circumduction in the sagittal plane.

75. Origin of biceps.

Ans. The short head of each biceps brachii originates at the top of the scapula (at the coracoid process). The long head originates just above the shoulder joint (at the supraglenoid tubercle).

76. Insertion of biceps.

Ans. The biceps brachii crosses the inside of the elbow and attaches at the radial tuberosity.

77. Action and leverage principle of muscles.

Ans. *bones act as lever arms

*joints act as pivots

*muscles provide the effort forces to move loads

*load forces are often the weights of the body parts

78. Bones act as levers.

Ans. Most of the bones of the limbs (arms & legs) act as levers. These levers are powered by muscles. A lever is a rigid rod able to rotate about a fixed point known as a fulcrum, formed by the joint. Any force applied to the lever is called the effort.

79. Origin of triceps.

Ans. **The medial head** originates from the back surface of the humours,
The lateral head originates from the back surface of the humours,
The long head originates from the infraglenoid tubercle of the scapula.

80. Incarnation of triceps.

Ans. Insertion: Proximal end of olecranon process of ulna and fascia of forearm.

81. Action of triceps

Ans. Chief Extensor of forearm; long head steadies head of abducted humours.

82. Movement of Knee joint

Ans. Third class lever system, knee movements are involved in running, jumping and kicking. During flexion at the knee, the point of insertion of the hamstrings on the tibia is the effort, the knee joint is the fulcrum and the weight of the leg is the load.

83. 1st class lever in human body

Ans. The joint between **skull and atlas vertebrae**, between **humers and radius and ulna**, in revers movement.

84. Spin

Ans. Spin is turning around axis which passes through the centre of the object.

85. Magnus force

Ans. When a spinning objects generate lift force which is called **Magnus force**.

86. Back spin

Ans. In back spin, the ball rotates around a horizontal Axis, here the top of the ball rotates in the opposite direction to the direction of flight.

87. Back spin can travels.

The top of the ball due to back spin can travel **backward, downward, forward and upward** movement.

88. Effect of back spin.

- [i] High pressure builds up at the bottom.
- [ii] Magnus force acts in the upward direction.
- [iii] Ball comes slowly and higher angle after bounce
- [iv] The ball does not bounce forward, **its used for defensive purpose.**

89. The law of Inertia

Ans. A body will maintain a state of rest or constant velocity unless acted on by an external force that changes the state.

90. The law of acceleration

Ans. **Newton's second law of motion** can be formally stated as follows: The acceleration of an object as produced by a **net force is directly proportional to the magnitude of the net force**, in the same direction as the net force, and inversely proportional to the mass of the object.

91. Law of reaction.

Ans. For every action, there is an equal and opposite reaction. The statement means that in every interaction, there is a pair of forces acting on the two interacting objects.

92. Distance.

Ans. When a body moves from one location to another, the length of the path that the body follows is the distance. **E.g. when a runner completes 2 laps around the distance of the runner is 800m.**

93. Displacement

Ans. Displacement refers to the shortest distance between the object's two positions. Displacement is change in position. **e.g. When a runner completes 2 laps around the displacement of the runner is 0 m.**

94. Top spin

Ans. the ball rotates around the horizontal axis and top of the ball rotates in same direction.

95. Effects of top spin

Ans. [i] high pressure is built top of the ball.

[ii] Magnus force acts downward direction.

[iii] The ball drops to the ground rapidly.

[iv] Its used specially for offensive purpose. After bounce ball comes faster to the court.

96. Friction laws

Ans. **First law of friction:** The amount of friction is proportional to the normal force exerted between the surfaces.

Second law of friction: Friction does not depend on the area of contact between the object and the surface.

Third law of friction: Friction force also depends on the nature of the surfaces in contact.

**97. The muscles are which moves our head.**

Ans. [i] Sternocleidomastoid, [ii] splenius capitis, [iii] longissimus capitis.

98. The muscles which moves our abdominal wall.

Ans. [i] External oblique, [ii] internal oblique, [iii] transversalis, [iv] Rectus abdominis.

99. The muscles are which moves our pelvic

Ans. [i] levator Ani, [ii] Coccygeus.

100. The muscles are which moves our Chest.

Ans. [i] external intercostals, [ii] Internal intercostals, [iii] Diaphragm.

101. The muscles are which moves our Facial expression

Ans. [i] occipio frontalis, [ii] Orbicularis oculi, [iii] Orbicularis oris, [iv] masseter, [v] temporal.

102. The muscles are which moves our Foot

Ans. [i] Tibialis anterior, [ii] Gastrocnemius, [iii] Soleus.

103. Women athletes suffer from specially

Ans. Women athletes may eat a healthy diet yet still skip menstrual periods and be at risk of low bone mass. Disordered eating can cause heart problems, such as an irregular heartbeat, muscle weakness or fatigue, fainting, and loss of concentration with school work and athletics.

104. Healthy lifestyle needed

Ans. Weight vs. body composition. ...

Sleep, Toxins, Eating habits, Stress, Body feedback, Goal setting.

105. Lifestyle

Ans. Lifestyle is the interests, opinions, behaviours, and behavioural orientations of an individual, and lifestyle as a "way or style of living" has been documented since 1961.

106. Physiological changes due to aging

Ans. Physiological changes occur with aging in all organ systems. The cardiac output decreases, blood pressure increases and arteriosclerosis develops. The lungs show impaired gas exchange, a decrease in vital capacity and slower expiratory flow rates.

107. What is a physiological ergogenic aid?

Ans. Ergogenic is defined as, "tending to increase work" An ergogenic aid is defined as –

A physical, mechanical, nutritional, psychological, or. Pharmacological substance or. treatment that either directly improves physiological.

108. Elasticity

Ans. The ability of an object or material to resume its normal shape after being stretched or compressed; stretchiness.

109. Body posture means

Ans. Posture is the way of position your body or arranges your limbs. So stand up straight, put your shoulders back, and lift that chin up. This form describes the way you carry yourself, but can also describe a certain body position you take, like the different postures in yoga.

110. Causes bad posture

Ans. The poor posture causes habits, muscle imbalances and focusing too much on certain exercises.

111. Common Postural Deformities

Ans. Spinal curvature (Kyphosis, lordosis, scoliosis) ▪ Flat foot. ▪ Knock knees. ▪ Bow legs.

112. Types of Scoliosis

Ans. Idiopathic, congenital, and neuromuscular.

113. Idiopathic scoliosis

Ans. Idiopathic scoliosis cause is unknown or that there is no single factor that contributes to the development of the postural deformity.

114. Therapeutic Poses For Kyphosis problem

Ans. [i] Mountain Pose, Stand up straight with your back against a wall, [ii] Shoulder Rolls and Scapular Retraction, [iii] Chest and Shoulder Stretch, with Doorway, [iv] Chin Tucks, Hands-and-Knees Flow, [v] Cobra and Sphinx, Bird Dog, [vi] Supported Fish Pose.

115. Therapeutic Poses For lordosis problem

Ans. lunges, child's pose, cat pose, boat exercise, hamstring stretches.

116. Few yoga poses are good for scoliosis

Ans. Balasana (Child's Pose), Trikonasana (Triangle Pose), Virabhadrasana (Warrior Pose), Ardha Adho Mukha Vrksasana (Half Handstand).

117. Bad for lordosis.

Ans. Ardha Chandrasana, Dhanurasana, Ustrasana. Chakrasana or Urdhva Dhanurasana, Bhungasana yogic exercise can increase lumbar lordosis.

118. Striated muscle

Ans. Skeletal muscle is also called striated muscle, because its composition results in a striped appearance.

119. Troponin

Ans. the globular protein complex called troponin which is able to bind to actin, calcium, and the fibrous protein.

120. Motor endplate

Ans. The point of junction of a motor nerve fibre and a muscle fibre. The motor endplate is a modified area of the muscle fibre membrane at which a synapse occurs. A motor nerve axon ending may have up to 50 synaptic knobs (boutons) but a single muscle fibre has only one endplate.

121. Rigor mortis

Ans. Rigor mortis: Literally, the stiffness of death. The rigidity of a body after death, the biochemical basis of rigor mortis is **hydrolysis in muscle** of ATP, the energy source required for movement. Without ATP, myosin molecules adhere to actin filaments and the muscles become rigid or fixed.

122. Importance of Sports psychology in physical Education

Ans. Sports psychology plays a very important role in controlling the emotions of sportspersons during practice as well as competition, helps to recover quickly from injury, and helps to make strong personality from core. It helps in balancing the arousal of emotions which further improves the performance.

123. Sports psychology all about

Ans. Concerned about psychological factors like **stress, anxiety, excitement** etc.

Concerned about goal settings.

[Imaginary keeping track of our development with proper time management.]

124. Types of Goal

Outcome goal- focus on result of contest. (i.e. beating someone)

Performance goal- focus on improvement in relation to an individual's past performance. (i.e. perform better than past)

125. Imagery mental training tools

Ans. **[i]** Imagery allows athletes to practice sports skills.

[ii] Athletes must use imagery continuous systematic manner.

[ii] Imagery enhance thought and emotion

126. Sports psychological factors of performance

Ans. Awareness, focus/concentration, anxiety, motivation.

127. Psychological goal settings provides

Ans- Motivation, commitment, direction

128. Motivation

Ans. Motivation is derived from the word **mover** which means '**to move**'. Hence motivation stands for movement these needs could be wants or desires that are acquired through influence of culture, practice and individuals goal.

129. Types motivation

Ans. he Two Main Categories of Motivation

Intrinsic Motivation. Intrinsic motivation is a type of motivation in which an individual is being motivated by internal desires.

Extrinsic Motivation. Extrinsic motivation, on the other hand, is a type of motivation in which an individual is being motivated by external desires.

130. Major theories of motivation?

Ans. [i] Maslow's needs hierarchy, [ii] McClelland's achievement motivation and Herzberg's two-factor theory. [iii] Skinner's reinforcement theory, [iv] Victor Vroom's expectancy theory, [v] Adam's equity theory and Locke's goal setting theory, [vi] Alderfer's ERG theory.

131. Maslow's theory of motivation

Ans. Maslow proposed that motivation is the result of a person's attempt at fulfilling five basic needs: **physiological, safety, social, esteem and self-actualization.**

132. McClelland's theory

Ans. McClelland's Human Motivation Theory states that every person has one of three main driving motivators: the needs for achievement, affiliation, or power. These motivators are not inherent; we develop them through our culture and life experiences.

133. Herzberg's theory

Ans. The two-factor theory or Herzberg's motivation-hygiene theory and dual-factor theory states that the Factors for satisfaction include responsibility, job or task satisfaction, recognition, achievement, opportunities for growth, and advancement.

134. Clayton P. Alderfer's ERG theory (1969)

Ans. It condenses Maslow's five human needs into three categories, Existence, Relatedness and Growth.

135. Vroom's expectancy theory

Ans. Vroom realized that performance only based on individual's factors such as personality, skills, knowledge, experience and abilities.

136. Skinner's reinforcement theory of motivation

Ans. B.F. Skinner and his associates state that individual's behavior is a function of its consequences. It is based on 'law of effect'

137. Types of reinforcement

Ans. positive, negative, punishment, and extinction.

138. Emotions effect on performance

Ans. Negative emotions, such as fear, anger, stress, hostility, sadness, and guilt can sometimes positive and negatively affected on performance.

139. Successful performances depends on

Ans. Physical stature, environment, degree of conditioning, personality, level of ability, motivation.

140. Intrinsic motivation

Ans. Intrinsic means belonging naturally or something inherent.

141. Sub categories of Intrinsic motivation

Ans. Intrinsic motivation to know, Intrinsic motivation towards accomplishment,

**142. Extrinsic motivation**

Ans. Means few substance activity like **external pulls, attractions, forces, incentive** etc

143. Dynamics of motivation

Ans. Stared from [i] knowing your athlete [ii] innovative curriculum [iii] teacher act as motivator [iv] goal settings.

144. Transfer of training

Crow and Crow: “The carry-over of habits of thinking, feeling, or working of knowledge or of skills, from one learning area to another usually is referred to as the transfer of training.”

145. Types of transfer of learning

Ans. Positive transfer, Negative transfer, Neutral or Zero transfer.

146. Positive transfer of training

Positive transfer: When learning in one situation facilitates learning in another situation, it is known as positive transfer.

147. Negative transfer of training

Negative transfer: When learning of one task makes the learning of another task harder- it is known as negative transfer.

148. Zero transfer of training

Ans. If new skill to be learned is totally unrelated to the previous skill, transfer neither to be positive and neither to negative. For example learned swimming no effect on tennis strokes.

149. Thinking in psychology

Ans. Thinking is manipulating information, as when we form concepts, engage in problem solving, reason and make decisions.

150. Three Types of Thinking

Ans. insightful (used for problem solving), experiential (focused on the task at hand), and incessant (chatter).

151. Memory in psychology

Ans. Memory is the means by which we draw on our past experiences in order to use this information in the present' (Sternberg, 1999).

152. Laws of learning

According to Edward **Thorndike** developed the first three laws of learning: **[i]** readiness, **[ii]** exercise, **[iii]** effect.

153. Basic principles of motor skill learning

Ans. knowledge of nervous system, maturity, individual differences, needs to learn information regarding objectives, mechanical knowledge of skills, mental rehearsal, repetition etc.

154. Learning curve

Ans. Learning curve is a graphic depiction understanding the acquisition of learning is to examine the course of his growth.

155. Types of learning curves

Ans. [i] learning curves with positive acceleration, [ii] learning curves with negative acceleration, [iii] learning curves with plateau and limits.

156. Implementation of motor learning curve in physical education

Ans. Motor learning curve is a Function of the spacing of the trails and the capability of the performer (**Cratty**).

157. Importance of PST

Ans. Psychological skills training (PST) is as important to the athlete as **physical training and can contribute 50-90% of their performance** and others from PST.

158. Basic methods of PST

Ans. Goal setting, self-talk, mental imagery and mental rehearsal, and relaxation are the four most prominent PST methods used by athletes.

159. Phases of psychological skill training

Ans. **PST** has three phases, including education phase, acquisition phase, and practice/implementation phase.

160. Psychological skills training (PST)

Ans. **Psychological skills training** (PST) is the deliberate, systematic practice of strategies and methods designed to enhance an athlete's performance.

161. Health objectives

Ans. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death. Achieve health equity, eliminate disparities, and improve the health of all groups. **Create social and physical environments that promote good health for all.**

162. Health Education's Objectives

Ans. Health Education's Objectives help people in solving their health problems using their potential.

163. The Goal of Health Education

Ans. The ultimate goal of health education is improve the health of the individual and community level.

164. Principles of health

Ans. The main principles of health are **a healthy diet, regular exercise, work, rest, and positive thinking.**

165. Genes and health

Ans. Genes affect our chances of having several common illnesses, like **heart disease, asthma and diabetes etc.**

166. The environment influence genetic conditions

Ans. Environmental factors such as food, drugs, or exposure to toxins can cause epigenetic changes by altering the way molecules bind to DNA.

167. Diseases from hereditary

Ans. heart disease, high blood pressure, Alzheimer's disease, arthritis, diabetes, cancer and obesity.

168. Types of diseases

Ans. There are four main types of disease: **[i]** infectious diseases, **[ii]** deficiency diseases, **[iii]** hereditary diseases (including both genetic diseases and non-genetic hereditary diseases), and **[iv]** physiological diseases.

169. Types of infection

Ans. Bacterial, fungal, viral, protozoan, parasitic, and prion disease.

170. Causes of genetic problems

Ans. Genetic disorder is an illness caused by changes in a person's DNA, due to an error in DNA replication or due to environmental factors.

171. Component of Health related physical fitness

Ans. [i] Cardiovascular Endurance, [ii] Muscular Strength, [iii] Muscular endurance, [iv] Flexibility, [v] Body Composition.

172. Health Appraisal

Ans. Health appraisal conducted by the School Physician is a screening which provides primary medical check-up.

173. Health instruction

Ans. Health instruction is a formal form of interaction where health concept (content to improve knowledge, attitude and practice) are taught with the aim of influencing these domains of learning positively.

174. Public health

Ans. Public health is concerned with disease prevention and control at the population level, through organized efforts .

175. MOHFW

Ans. The Ministry of Health and Family Welfare (MOHFW).

176. School Health Programme

Ans. School health program is an organized set of policies, procedures, and activities designed to protect and promote the health and well-being of students.

177. Awareness of health

Ans. Promoting awareness of community health issues and preventative action is a vital part of our Foundation's mission and impact of health.

178. Personal hygiene

Ans. Personal hygiene includes bathing, clothing, washing hands and toileting, care of nails, feet, teeth, spitting, coughing, sneezing, personal appearance, etc.

179. Health problems related to obesity

Ans. People who have obese they can increase risk for many serious diseases and health conditions, like Gallbladder disease, breathing problems etc.

180. Osteoarthritis

Ans. Breakdown of cartilage and bone within a joint.

181. Obesity is a disease

Ans. Obesity is related to **genetic, psychological, physical, metabolic, neurological, and hormonal** impairments to its can allow as a disease.

182. American Medical Association declaration about obesity

Ans. Obesity Is Now A Disease, American Medical Association Decides. Obesity has been officially recognized as a disease by the **American Medical Association**.

183. Physical activity and weight control

Ans. Increases people's total energy expenditure, which can help them stay in energy balance or even lose weight, Physical activity decreases fat around the waist and total body fat, slowing the development of abdominal obesity.

184. Role of exercise on calorie balance

Ans. Exercise can help you achieve this by burning off some extra calories and exercise increases hunger in some people, making them eat more calories than they burned during the workout.

185. Aims of first aid

Ans. Preserve life, prevent illness or injury from becoming worse, relieve pain, if possible, promote recovery, protect the unconscious.

186. Main aims and principles of first aid

Preserve life, protect the casualty from further harm, Provide pain relief.

187. First aid treatment for shock

Ans. The best treatment for shock is to keep the injured person comfortable, warm, and dry.

[i] Lay the Person Down, [ii] Begin CPR, if Necessary

[iii] Treat Obvious Injuries, [iv] Keep Person Warm and Comfortable, [v] Follow Up.

188. For First-Degree Burns

Ans. **Cool Burn.** Hold burned skin under cool (not cold) running water

Protect Burn. Cover with sterile, non-adhesive bandage or clean cloth.

189. How Air pollution affect our health

Ans. Respiratory diseases, Cardiovascular damage, Fatigue, headaches and anxiety, Irritation of the eyes, nose and throat, Damage to reproductive organs, Harm to the liver, spleen and blood, Nervous system damage.

190. Effects of water pollution on human health

Ans. Some of these water-borne diseases are Typhoid, Cholera, Paratyphoid Fever, Dysentery, Jaundice, Amoebiasis and Malaria.

191. Health Effect of chemical in polluted water

Ans. Chemicals in the water also have negative effects on our health. Pesticides – can damage the nervous system and cause cancer.

192. Nutrition

Ans. Nutrition is the science that interprets the interaction of nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes food intake, absorption, assimilation, biosynthesis, catabolism and excretion.

193. Balanced diet (WHO)

Ans. A balanced diet provides all the nutrients a person requires, without going over the recommended daily calorie intake. By eating a balanced diet, people can get the nutrients and calories they need and avoid eating junk food, or food without nutritional value.

194. Importance of balanced diet

Ans. A balanced diet is important because our organs and tissues need proper nutrition to work effectively and without good nutrition, our body is more prone to disease, infection, fatigue, and poor performance.

195. Components of a balanced diet

Ans. Carbohydrates, Protein, Fats, Vitamins and Minerals, Water.

196. Most common nutritional deficiency

Ans. Iron deficiency is one of the most common nutrient deficiencies in the world, affecting more than 25% of people worldwide.

197. Boosting way for nutrient absorption

Ans. Eat a variety of foods in one meal, take vitamin C-rich foods with iron, Include healthy fats with each meal, Take a probiotic, Avoid drinking tea or water at mealtimes, Manage stress levels and Hydrate.

198. Effect of smoking cigarette

Ans. Smoking can cause lung disease by damaging our airways and the small air sacs (**alveoli**) found in our lungs.

199. COPD

Ans. Chronic obstructive pulmonary disease (**COPD**) is a common lung disease.

200. Types of COPD

Ans. **[i]** Chronic bronchitis, which involves a long-term cough with mucus.

And **[ii]** Emphysema, which involves damage to the lungs over time.

201. Rehabilitation

Ans. Rehabilitation is the process of combining pharmacological (prescription medications) and psychotherapeutic treatments to address substance abuse disorders.

202. Professional area of physical education in India

Ans. Helps to engage as a Coach or physical educationist in high school, college, professional level. Other career options include fitness trainers, recreation workers, physical education instructors, physical therapists, sports medicine, human kinetics, sports nutritionists, and even sport psychologists

203. Other carrier options of physical education

Ans. Sports law, Research, consulting, officiating, Entrepreneur

204. Sports media carrier in physical education

Ans. Journalism, Photography, writing, art, broadcasting.

205. Career Opportunities after Bachelor of Physical Education

Ans. Sports Journalist, Sport and Leisure Club Manager, Sports Goods Manufacture, Marketing Executive. Physical Education Instructors, Corporate Fitness Instructor, Athletic Coach, Rehabilitation Specialist.

206. Jobs directly related to your Physical education field

Ans. Exercise physiologist, Fitness center manager, Personal trainer, Secondary school teacher, Sports administrator, Sports coach, Sports development officer, Sports therapist.

207. Government policy of physical education

Ans. The Khelo India Scheme was launched in 2016 after the merger of three schemes - Rajiv Gandhi Khel Abhiyan (RGKA), Urban Sports Infrastructure Scheme (USIS) and National Sports Talent Search Scheme (NSTSS).

208. Khelo India Programme.

Ans. It was introduced by Ministry of Sports and Youth affairs to revive sports culture in India at grass-root level. **launched in 2016.**

209. Objectives of khelo India programme

Ans. Its objective is to build strong framework for all sports played in our country and establish India as great sporting nation.

210. Components are included in khelo India Programme

Ans. As many as 16 disciplines were contested in the competition at a U17 level.

211. Events of khelo India programme

Ans. Khelo India events are Archery, Athletics, Badminton, Basketball, Boxing, Football, Gymnastics, Hockey, Judo, Kabaddi, Kho-Kho, Shooting, Swimming, Volleyball, Weightlifting.

212. Rajiv Gandhi Khel Abhiyan

Ans. Rajiv Gandhi Khel Abhiyan (**RGKA**), a centrally sponsored scheme, was **launched**

213. Urban Sports Infrastructure Scheme (USIS)

Ans. Sports is a state subject and while Government of India is satisfied as regards to utilization of funds allotted to Urban Sports Infrastructure Scheme (USIS), **started from the year 2010**

214. National Sports Talent Search Scheme (NSTSS)

Ans. The National Sports Talent Search Scheme (**NSTSS**) has been formulated for talent identification in the age group of 8-12 years and nurturing of identified talented sports persons. The scheme is being implemented by Ministry of Youth Affairs & Sports, Government of India.

215. Principle of curriculum planning

Ans. Principle of Child Centeredness, Highlights, Principle of **Community Centredness**, Principle of **Activity Centredness**, Principle of **Variety**, Principle of **Co-ordination and Integration**, Principles of **Conservation**, Principle of **Creativity**.

216. Subject Matter of education

Ans. Subject matter education is a third-cycle subject where the conditions, processes and results of teaching, learning and education are studied in relation to content.

217. Importance of a curriculum

Ans. The fundamental purpose of curriculum development is to ensure that students receive integrated, coherent learning experiences that contribute towards their personal, academic and professional learning and development.

218. 3 types of curriculum

Ans. Three basic types of curriculum designs are subject-centered, learner-centered, and problem-centered design.

219. Elements of curriculum implementation

Ans. Three important components are [i] the intended outcomes, [ii] what is taught, and [iii] the manner of implementation.

220. Elements of curriculum

Ans. [i] Aims and objectives, [ii] content, [iii] evaluation, [iv] teaching strategies.

221. Subject matter

Ans. Subject matter refers to the scientific study of learning and instruction within

222. Curriculum evaluation

Ans. Curriculum evaluation is a method for determining the worth and effectiveness of any newly implemented curriculum.

223. Concept of curriculum Evaluation

Ans. Evaluation is a process of making value judgments over a level of performance

224. Teaching aids

Ans. Teaching aids are an integral component in any classroom, like helping learners improves reading comprehension skills, illustrating or reinforcing a skill or concept etc.

225. Technology in PE

Ans. Technology in Physical Education helps teachers or coach to improve the environment and class room activity's for students and get them to be more physically active in and outside

226. Sport training

Ans. Sport training is a process of preparation for a sport performance, put simply. It consists of four parts: Conditioning training (strength training, endurance training, flexibility training) ... Psychological training (Mental preparation).

227. Constriction of sports training

Ans. It consists of four parts: **Conditioning training** (strength training, endurance training, flexibility training). **Psychological training** (Mental preparation).

228. Principle of Sports training

Ans. The principles of **specificity, progression, overload, adaptation, and reversibility.**

229. Sport specific training

Ans. The goal of training is to help the athlete improve their ability to play their sport through improving athletic attributes.

230. Definition of sports training

Ans. According **Hardiyal Singh (1993)** sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsman for higher performances in sports competitions.

231. Objectives of sports training.

Ans. The basic objectives of development of personality are **Physical fitness, Skill/Technique, tactical, Mental training.**

232. Characteristics of sports training

Ans. Performance oriented, individual matter, planned and systematic, scientific process, educational process, controlled process, coach as a leader or minter in sports training.

233. Main differences between Training load and training volume

Ans. Training load is different than training volume, which indicates the number of hours or distance we train, Training load can also be the cumulative load if measured over time.

234. The difference between load and adaptation

Ans. The adaptation processes are set in motion only when the load is optimum. For achieving adaptation the load must have certain minimum of intensity and volume.

235. Adaptation phase

Ans. The adaptation phase is when our body is changing to cope with the stress it's gone through so that if the stress was to recur they would be better equipped to handle it.

236. FITT

Ans. FITT means **frequency, intensity, time, and type.**

237. Causes of over load

Ans. [i] High intensity in endurance event training may cause over load. [ii] High volume in sprinting event will also lead to over load. [iii] Participation in too many competitions may also cause over load. [iv] Ignorance of other training means may also cause over load.

238. Strength

Ans. Strength is the ability to exert force against resistance.

239. Types of Strength

Ans. 3 types of Strength, **Maximum Strength, Explosive Strength, Strength endurance.**

240. Maximum Strength

Ans. Maximum Strength is the Ability to exert greatest force that is possible to overcome a resistance in a single maximum contraction.

241. Explosive Strength

Ans. Explosive strength is the Ability to overcome resistance with a fast contraction.

242. Strength endurance

Ans. Strength endurance is the ability to express force over a longer period of time.

243. Maximum strength development process

Ans. Maximum strength developed with Weight training (high intensity).

244. Muscles strength

Ans. Muscle will only strengthen, when it is worked beyond its normal operation, it is overloaded.

245. Explosive strength develop with

Ans. Plyometric Exercise, medicine ball exercise, Conditioning exercise, weight training.

246. Strength Endurance can be developed with.

Ans. Circuit training, Dumbbell exercise, Weight training (low intensity and high repetition), Hill running.

247. Endurance fitness

Ans. Endurance fitness is the ability to sustain the necessary activity level for a specific competitive sport. It includes both cardiovascular and muscular endurance required for the sport.

248. Types of endurance

Ans. Two types of endurance – Cardiovascular and the other is muscular endurance

249. Cardiovascular Endurance

Ans. Cardiovascular endurance is the ability of the body to deliver blood, oxygen and nutrients to working muscles, and the ability of the muscles to use that oxygen to do work.

250. Muscular endurance

Ans. Muscular endurance is the ability of a muscle to do work without fatiguing.

251. Speed

Ans. Speed is the Quickness of the movement of limb, whether this legs of runner or the arm of the shot putter.

252. Types of Speed

Ans. Maximum speed, Explosive strength, Speed endurance

253. Flexibility

Ans. Flexibility is the ability to perform a joint action through a range of motion.

254. Muscles work during flexibility

Ans. [i] Protagonist muscles which causes the movement takes place.

[ii] Opposing the movement and determining the amount of flexibility are the antagonistic muscles.

255. Factors determining flexibility

Ans. Joint structure, Age & Gender, ROM (Range of Motion) and flexibility naturally decreases as you get older, Connective Tissue, Muscle bulk, Proprioceptors.

256. Coordinative abilities

Ans. Coordinative abilities are those abilities which stabilized and generalized pattern of motor control.

257. Coordinative abilities primarily depends upon

Ans. Differential ability, Orientation ability, Coupling ability, Reaction ability, Balance ability.
Rhythm ability.

258. Technique

Ans. Technique is a particular method of doing an activity, usually a method that involves practical skills it's also a way of carrying out a particular task.

259. Skill

Ans. Skill is the ability to do something well, skill is how well you can perform your technique in your event.

260. Tactics

Ans. Tactics are the actions, projects or events, to reach a particular point or the desired end.

261. Strategy

Ans. Strategy is defined as a game plan, which can help the organization to achieve its mission and objectives.

262. Periodization

Ans. Periodization is the systematic planning of athletic or physical training where involves progressive cycling of various aspects of a training program during a specific period.

263. Talent identification.

Ans. Talent identification is the process of recognizing current players that have the potential to explore the field.

264. Stages of Periodization

Ans. Three stages of Periodization are **Preparation Period, Competition Period and Transition Period.**

265. Aim of Periodization.

Ans. The aim of periodization is to peak for a specific competition and develop a specific component of fitness.

266. Three phases of periodization

Ans. Three types of cycles: microcycle (7days), mesocycle (2weeks to few months), and macro cycle (1year to 2 year).

267. Speed

Ans. The quickness of movement of limb, whether this is the leg of a runner or arm of the shot putter.

268. Agility

Ans. The ability to perform a series of explosive power movements in rapid succession in opposing direction (Zigzag running or cutting movements).

269. Power

Ans. The ability to exert maximum muscular contraction instantly an explosive burst of movements (jumping or sprint starting).

270. Strength

Ans. The extent to which muscles can exert force by contracting against resistance (holding restraining an objects or person).

271. Flexibility

Ans. The ability to move joints and use muscles through their full range of motion. (sit and reach test is the good measure of flexibility).

272. Goniometer

Ans. The most accurate tests of flexibility are those in which a goniometer is used to measure the actual degrees of rotation of the various joints.

273. Max strength measure

Ans. Maximum strength is given the name one repetition maximum (1RM). This is a measurement of the greatest load that can be fully moved (lifted, pushed or pulled) once without failure or injury.

274. Explosive strength

Ans. Explosive strength is the ability to overcome a resistance with a fast contraction.

275. Overload can be progressed by increasing

Ans. [i] number of repetition of an exercise, [ii] number of sets of exercise, [iii] reduced recovery time.

276. Factors infusing Speed

Ans. Athletes mobility, special strength, strength endurance and technique.

277. Research work important for

Ans. Central government encourages research and innovation in sport, boosting performance (especially at elite level) and promoting innovation, increasing participation in sport and the importance of sport within the community, promoting vitality and health through sport and physical activity.

278. Sport research

Ans. Sport research is designed to explain the underlying mechanisms about **how athletes function**. It gives coaches and athletes a way to gain **solid information about the athlete and helps in sport performance**.

279. The main duty of researcher or scientist

Ans. The main duty of sports scientists or researcher is **to help athletes optimize their health and performance**. They may develop custom training programs that focus on strengthening specific **muscles in the body which help the body to adapt various environmental conditions**.

280. Classification of research

Ans. Types of the research methods according to the nature of research can be divided into two groups:[i] descriptive and [ii] analytical.

281. Descriptive research

Ans. Descriptive research usually involves surveys and studies that aim to identify the facts. (e.g., case-study, naturalistic observation, survey)

282. Test

Ans. A test or examination (informally, exam or evaluation) is an assessment intended to measure a test-taker's knowledge, skill, aptitude, physical fitness, or classification in many other topics.

283. Importance of test in the field of Physical education

Ans. [i] To frame the objectives – [ii] To evaluate the learners – [iii] To evaluate teaching programme – [iv] To know capacities and capabilities – [v] To discover the needs and requirements of the participants.

284. Measurement

Ans. Measurement is the use of tests and techniques to collect information or data about a specific skill or fitness level of an individual.

285. Evaluation

Ans. Evaluation is a systematic process of determining to what extent instructional objectives has been achieved.

286. Criteria of Test Selection

Ans. Criteria of Test Selection must have -Scientific Authenticity, (Reliability, Validity, objectivity, norms) Administrative Feasibility and Educational application.

287. Type of test

Ans. Mainly 4 types of test like- **diagnostic, formative, benchmark, and summative.**

288. APFT

Ans. The Army Physical Fitness Test (**APFT**).

289. BPESS

Ans. Bureau of Physical Education and School Sports (**BPESS**).

290. Power test tools

Ans. Vertical Jump Test, Standing sideways on to a wall with the arms raised above you, mark the highest point you can reach.

291. Balke 15 minute run — A fitness test to measure aerobic power (VO₂max) indirectly.

292. Cooper 12 minute run — A fitness test to measure aerobic power (VO₂max) indirectly.

293. Multistage shuttle run — Also used to estimate aerobic power but more appropriate for multipoint sports. Also effective for testing large groups at a time.

294. Rockport test — A simple walking test for less active individuals.

295. Sit and reach test — The standard flexibility test that measures lower back and hamstring flexibility.

296. **30m sprint** — A simple fitness test to measure power.
297. **30m sprint fatigue** — Excellent for multisprint sports such as basketball, soccer, hockey etc.
298. **Illinois agility test** — Another great fitness test for multisprint sports.
299. **Illinois agility test** — Another great fitness test for multisprint sports.
300. **Illinois agility test** — Another great fitness test for multisprint sports.
301. **Standing Vertical jump** — The standard fitness test used to measure explosive power. Particularly relevant to basketball and volleyball.
302. **Hexagon drill** — Excellent test to measure quickness, agility and balance.
303. **Motor fitness**
Ans. Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity.
304. **Johnson Basketball Test items**
Ans. [i] Field goal speed test, [ii] Basketball throw for accuracy, [iii] Dribble.
305. **Stroup basketball Test items**
Ans. [i] Goal shooting, [ii] Wall passing, [iii] Dribbling.
306. **Anxiety measuring tools**
Ans. Among the popular early measures, used primarily for research purposes, were the following: [i] Test Anxiety Questionnaire (TAQ; S. B. Sarason & Mandler, 1952), [ii] Test Anxiety Scale for Children (TASC; S. B. Sarason et al., 1960), [iii] Test Anxiety Scale (TAS; I. G. Sarason & Ganzer, 1963).
307. **Achievement motives Scale**
Ans. The Achievement Motives Scale (AMS) focuses on two factors of achievement motivation [i] hope of success and [ii] fear of failure.
308. **Three types of Somatotypes-** Ectomorph, Mesomorph, and Endomorph.
309. **Technique Of Somatotyping**
Ans. [i] The anthropometric method, [ii] The photoscopic method.
310. **Heath-Carter method of somatotyping**
Ans. Uses various anthropometric measurements, including skinfolds, weight, height, upper arm circumference, maximal calf circumference, femur breadth, humerus breadth, triceps skinfold, subscapular skinfold, supraspinal skinfold, and medial calf skinfold.

311. Common Postural Deformities

Ans. Spinal curvature (Kyphosis, lordosis, scoliosis) ▪ Flat foot. ▪ Knock knees. ▪ Bow legs.

312. Scoliosis measurement

Ans. Spinal curvature must be at least 10 degrees to be considered scoliosis. A special level called a "scoliometer" is a tool used to measure the curvature.

313. Measurement of Kyphotic angle

Ans. To measure it, a perpendicular is taken that is extended from a line through superior landmark marking from T4 and an inferior marking of T9. When the angle is between 40-45° we consider it as a thoracic hyperkyphosis.

314. Thoracic hyperkyphosis

Ans. When the angle is between 40-45° we consider it as a thoracic hyperkyphosis.

315. Knox basketball test

Ans. **Robert D. Knox (1947)** for High School Boys purpose to measure basketball playing ability.

316. Test items of Knox basketball test

Ans. Speed Dribble (Dribbling), Wall bounce (passing), Dribble shoot (lay-up), Penny cup (Reaction ability).

317. Johnson Basketball Test

Ans. Designed for high school boys. Test items are- **Field Goal Speed test, Basketball throw for accuracy, dribbling.**

318. Stroup Basketball Test

Ans. Test items are- **Goal shooting, Wall passing, Dribbling.**

319. Ronaldo Speed Test

Ans. The Ronaldo speed test assesses the ability to dribble the ball at pace and with control. This is a timed drill - players can be retested to monitor improvements over time. The focus for the players should be on maintaining control of the ball with close touches - not big touches and chasing the ball.

320. Isotonic strength exercise

Ans. Isotonic Strength exercise: Exercise when a contracting muscle shortens against a constant load, as when lifting a weight. Isotonic exercise is one method of muscular exercise. In contrast, isometric exercise is when muscular contractions occur without movement of the involved parts of the body.

321. Isotonic strength test exercise

Ans. [i] pull up test, [ii] dip test, [iii] bench squat test, [iv] sit up test, [v] bench press test, [vi] standing vertical arm press test.

322. Types of Strength measuring test

Ans. [i] Isotonic strength test, [ii] Spring scale strength test, [iii] Absolute strength test.

323. Harvard step test calculator

Ans. Short Form Equation - Fitness Index = (100 x test duration in seconds) divided by (5.5 x pulse count between 1 and 1.5 minutes).

Long Form Equation - Fitness Index = (100 x test duration in seconds) divided by (2 x sum of heart beats in the recovery periods).

324. Speed test process

Ans. [i] The nelson speed and movement test, **[ii]** 4sec dash test, **[iii]** 50 yards dash test, **[iv]** Nelson choice response movement test.

325. The weight of the Heart

Ans. New born baby heart weight 20 grams, **adult heart weight 250 to 320 grams.**

326. Z-line

Z- line can refer to the borders that separate and link sarcomeres within a skeletal muscle.

327. Process of muscular contraction

Ans. [i] Depolarisation and calcium ion release.

[ii] Actin and myosin cross-bridge formation.

[iii] Sliding mechanism of actin and myosin filaments.

[iv] Sarcomere shortening (muscle contraction)

328. Sliding filament theory proposed by

Ans. Andrew Huxley and Niedergerke introduced it. According to the sliding filament theory, the myosin (thick) filaments of muscle fibers slide past the actin (thin) filaments during muscle contraction, while the two groups of filaments remain at relatively constant length.

329. Flexion and Extension movement

Ans. Flexion and extension are movements that take place within the sagittal plane and involve anterior or posterior movements of the body or limbs.

330. Myoblasts

Ans. Myoblasts are the embryonic precursors of myocytes (also called muscle cells).

331. Functions of skeletal muscle

Ans. [i] Movement. attaches to bones to provide movement.

[ii] Heat and Energy. produces heat and energy for the body.

[iii] Posture. maintains posture.

[iv] Protection. Protects internal organs.

332. ANS

Ans. The autonomic nervous system (ANS), formerly the vegetative nervous system, is a division of the peripheral nervous system that supplies smooth muscle and glands, and thus influences the function of internal organs.

333. Two types of autonomic nervous system

Ans. 1. Sympathetic Nervous System 2. Parasympathetic Nervous System.

334. Reciprocal innervation

Ans. Reciprocal innervation is the domain of Central Nervous System (CNS)

335. Reciprocal innervation

Ans. Reciprocal innervation provides for the control of agonist and antagonist muscles. Reciprocal innervation describes skeletal muscles as existing in antagonistic pairs, with contraction of one muscle producing forces opposite to those generated by contraction of the other.

For example, in the **human arm**, the **triceps** acts to extend the lower arm outward while the **biceps** acts to flex the lower arm inward.

336. PNS

Ans. The peripheral nervous system (PNS) is the division of the nervous system containing all the nerves that lie outside of the central nervous system (CNS). The primary role of the PNS is to connect the CNS to the organs, limbs, and skin.

337. Motor neuron (or motoneuron)

Ans. Motor neuron is a neuron whose cell body is located in the motor cortex, brainstem or the spinal cord, and whose axon (fiber) projects to the spinal cord or outside of the spinal cord to directly or indirectly control effector organs, mainly muscles and glands.

338. Types of Motor neuron

Ans. There are two types of motor neuron – **upper motor neurons** and **lower motor neurons**.

339. Cardio vascular adaptation due to Exercise

Ans. [i] Heart size, Stroke volume, Heart rate, Cardiac output,
[ii] Blood flow, Blood pressure, Blood volume.

340. Changes of Heart size due to training.

Ans. **Heart mass and volume increases** with training due to increase work demand. Cardiac muscle undergoes **hypertrophy** due to chronic endurance training.

341. Resistance training and heart rate

Ans. [i] Training volume, [ii] Training intensity, [iii] Training duration, [iv] Length of rest periods between, [v] Amount of muscle mass.

342. Blood flow and Exercise

Ans. **Blood flow is enhanced due to endurance training**

Factors responsible, [i] capitalization of trained muscle, [ii] Greater opening of existing capillaries [iii] More effective blood redistribution, [iv] increased blood flow.

343. Blood pressure

Ans. Resting BP decrease
 At submax ex rate BP decrease
 At maximal ex rate SBP increase and DBP decrease

344. Blood volume and exercise

Ans. increase Plasma volume and red muscle cell volume

345. Respiratory adaptation

Ans. [i] Pulmonary ventilation, [ii] Pulmonary diffusion, [iii] Arterial venous O₂ difference.

346. Pulmonary Diffusion

Ans. Pulmonary diffusion is the gaseous exchange occurring in the alveoli.

347. Aerobic/cardiorespiratory endurance exercise

Ans. Aerobic/cardiorespiratory endurance the capacity of the muscle fibres to generate greater amount of ATP.

348. Anaerobic training increase

Ans. Anaerobic training increases strength & promotes greater tolerance for acid base imbalances during highly intense effort.

349. Aerobic training

Ans. Muscle fiber type, Capillary supply, Myoglobin content, Mitochondrial function, Oxidative enzymes.

350. Aerobic Exercise and Myoglobin content

Ans. Aerobic training has been shown to increase muscle myoglobin content by **75% to 80%**.

351. Adaptation to anaerobic training

Ans. Adaptation in ATP- PC system, Adaptation in Glycolytic system.

352. Adaptation in ATP- PC system

Ans. E.g. Sprinting & weight lifting events like short time event (6sec to more)

353. Adaptations in Glycolytic system

Ans. Anaerobic exercise Increase the activities of **Phosphorylase, Phosphofructokinase (PFK), Lactate dehydrogenase**. (Nearer 30sec activity).

354. Origin of biceps brachii

Ans. It is a double-headed muscle. The short head of each biceps brachii originates at the top of the scapula (**at the coracoid process of Scapula**). The long head originates just above the shoulder joint (**at the supraglenoid tubercle**).

355. Insertion of biceps brachii

Ans. Both heads converge into one muscle. The biceps brachii crosses the inside of the elbow and attaches at the **Radial tuberosity**.
posterior border of bicipital tuberosity of radius (over bursa) and bicipital aponeurosis to deep fascia and subcutaneous ulna.

356. Origin of triceps brachii

Ans. Head of Triceps Brachii Point of Origin

Medial head

Lateral head -The lateral head originates from the back surface of the humerus, just above the radial groove.

Long head -The long head originates from the infraglenoid tubercle of the scapula. The glenoid cavity is a round, concave portion of the scapula where the head of the humerus meets with the scapula. The infraglenoid tubercle is a small, round prominence just below the glenoid cavity.

357. Cross-Fiber Massage

Ans. **Transverse friction massage** (also known as **cross-friction and cross-fiber massage**) is a technique that promotes optimal collagen healing by increasing circulation and decreasing collagen cross-linking.

358. Petrissage movement in massage

Ans. Petrissage (**from French pétrir, "to knead"**) are massage movements with applied pressure which are deep and compress the underlying muscles. Kneading, wringing, skin rolling and pick-up-and-squeeze are the petrissage movements.

359. Tapotement massage

Ans. It is a rhythmic percussion, most frequently administered with the edge of the hand, a cupped hand or the tips of the fingers. Tapotement is a specific technique used in **Swedish massage**.

360. PNF

Ans. **Proprioceptive Neuromuscular Facilitation (PNF)** is a more advanced form of flexibility training. Which involves both the stretching and contracting of the muscle group being targeted. It helps to improving flexibility and increasing range of motion.

361. Five principle of management

Ans. At the most fundamental level, management is a discipline that consists of a set of five general functions: planning, organizing, staffing, leading and controlling.

362. Management function

Ans. Effective managers understand how planning, organizing, leading, and controlling are used to achieve organizational success.

363. Scope of management

Ans. Scope of management is the process whereby outputs, outcomes and benefits are identified, defined and controlled.

364. Personnel management

Ans. Personnel management is defined as an administrative specialization that focuses on hiring and developing employees to become more valuable to the company.

365. Principles of Personal manager

Ans. The basic principle of Personal Manager are Effectiveness and productivity, Innovativeness and creativity, Openness and trust, Professionalism and quality.

366. Time management principle

Ans. Organization (Staying organized can help you maintain a clear picture of what you need to complete and when), Prioritization, Goal-setting, Communication, Planning, Delegation, Stress management.

367. Purchasing strategies

Ans. Purchasing strategies in order to make cost effective purchasing decisions from a group of efficient vendors who will deliver quality goods on time and at mutually agreeable terms.

368. Goals of purchasing

Ans. Fulfillment of Personal Goals, Value, Quality, Reliability, Strategic Relationships, Efficiency.

369. Role of supervisor

Ans. The five key supervisory roles are **Educator, Sponsor, Coach, Counselor, and Director.**

370. Role of team manager

Ans. Team managers are responsible for the **day-to-day activities** and **guidance of their team** members. A team manager has to ensure that all members **understand the team's objectives** and **work together** to achieve the goal.

371. Qualification of sports manager

Ans. A bachelor's degree will suffice for most jobs in sports finance, sales, public relations, or sports marketing. In upper-level management job, then a master's degree will be required.

372. Principle of event management

Ans. **1.** Event Objectives – **2.** Budget Planning – **3.** Know Your Target Audience – **4.** Timelines – **5.** Venue Selection– **6.** Manage suppliers – **7.** Marketing and communication – **8.** Thinking Sustainably – **9.** Managing risk – **10.** Backup Plan

373. Multiple correlation

Ans. In statistics, the coefficient of multiple correlation is a measure of how well a given variable can be predicted using a linear function of a set of other variables. It is the correlation between the variable's values and the best predictions that can be computed linearly from the predictive variables.

374. Play theories

Ans. Play theories are divided into classical (**Surplus energy theory, Recreation or Relax- ation theory, Practice or Pre-exercise theory, and Recapitulation theory**) and modern theories (**Psychoanalytic theory, Arousal Modulation theory, Bateson's Metacommunicative theory, and Cognitive theories**).

375. The fight-or-flight response or hyperarousal

Ans. The fight-or-flight response (**also called hyperarousal, or the acute stress response**) is a physiological reaction that occurs in response to a perceived harmful event, attack, or threat to survival. It was first described by **Walter Bradford Cannon**.

376. National Trophy in Hockey

Ans. Aga Khan Cup, All India Maharaja Ranjit Singh Gold Cup, Beighton Cup, Mumbai Gold Cup, Rene Frank Trophy, Scindia Gold Cup, Settu Cup, Shani Trophy, Surjeet Singh Cup, Tommy Emar Gold Cup (women) etc.

377. Origin of Deltoid muscle

Ans. [i] **Anterior fibers**- Anterior lateral third of the clavicle, [ii] **Middle fibers**- lateral aspect of acromion, [iii] **Posterior fibers**- Inferior angle of the spine of the scapula.

378. Insertion of Deltoid muscle

Ans. **Deltoid tuberosity on the lateral humerus** is the insertion of the deltoid muscle.

379. Flat back posture

Ans. **A flat back means your pelvis is tucked in and your lower back is straight instead of naturally curved**, causing you to stoop forward.

People with a flat back often find it difficult standing for long periods. This posture is often caused by muscle imbalances, which encourage you to adopt such a position.

380. Correct posture

Ans. Correct posture means the balancing of body in accurate and proper manner while sitting, standing, reading, and writing, walking, running or during any other action.

381. Types of scoliosis

Ans. AANS suggests there are three categories of scoliosis, **idiopathic, congenital, and neuromuscular**. Most types of scoliosis are idiopathic, which means that the cause is unknown or that there is no single factor that contributes to the development of the disease.

382. Pes planus

Ans. **Pes planus** (Flat feet also called or fallen arches) is a postural deformity in which the arches of the foot collapse, with the entire sole of the foot coming into complete or near-complete contact with the ground. An estimated 20–30% of the general populations have an arch that simply never develops in one or both feet.

383. Genu valgum,

Ans. **Genu valgum, commonly called "knock-knee",** is a condition in which the knees angle in and touch each other when the legs are straightened. Individuals with severe valgus deformities are typically unable to touch their feet together while simultaneously straightening the legs.

384. Genu varum

Ans. Bow legs (or genu varum) is when the legs curve outward at the knees while the feet and ankles touch. Infants and toddlers often have bow legs. Sometimes, older kids do too.

It's rarely serious and usually goes away without treatment, often by the time a child is 3–4 years old.

385. Eccentric contraction

Ans. Eccentric contraction is the motion of an active muscle while it is lengthening under load.

386. Cardiopulmonary resuscitation (CPR)

Ans. Cardiopulmonary resuscitation (**CPR**) is an emergency procedure that combines chest compressions often with artificial ventilation in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest.

Few important terms used in Volleyball.

387. Bump : A first hit or pass that is used to set an attack in volleyball.

388. Cross: in volleyball game when the middle hitter jumps for a one, and the weak-side hitter, having moved to the middle of the court, takes an approach for a two at the same location.

389. Dig : A first hit of an attack ball resulting in a successful pass. Often the volleyball is hit low or close to the ground.

390. Double contact : A fault where a player hits the volleyball two times in a row.

391. Dump: When a player hits the volleyball over the net on the second contact. This is generally a surprise play when the setter appears to be setting the ball but then quickly hits it over the net and into an open spot.

392. Kill : A successful spike attack in volleyball.

393. Mis-hit : A bad hit or one that is not hit the way the volleyball player wanted to hit it.

394. Wipe : When one player pushes the volleyball off the opponents block to knock the ball out of bounds off their block and winning the point.

Few important terms used in Badminton

- 395.**Alley** - Extension of the court by 1 1/2 feet on both sides for doubles play.
- 396.**Balk** - Any deceptive movement that disconcerts an opponent before or during the service; often called a "**feint**."
- 397.**Carry** - An illegal tactic, also called a sling or throw, in which the shuttle is caught and held on the racquet and then slung during the execution of a stroke.
- 398.**Clear** - A shot hit deep to the opponent's back. The high clear is a defensive shot, while the flatter attacking clear is used offensively.
- 399.**Drive** - A fast and low shot that makes a horizontal flight over the net.
- 400.**Drop** - A shot hit and with finesse to fall rapidly and close to the net on the opponent's side.
- 401.**Fault** - A violation of the playing rules, either in serving, receiving, or during play.
- 402.**Wood Shot** – Wood Shot that results when the base of the shuttle is hit by the frame of the racquet. Once illegal, this shot was ruled acceptable by the International Badminton Federation in 1963.

403.Viral diseases

Ans. Smallpox, the common cold and different types of flu, measles, mumps, rubella, chicken pox, and shingles, hepatitis, herpes and cold sores, polio, rabies, Ebola and Hanta fever.

404.Carbohydrate loading

Ans. Carbohydrate loading is a systematic and scientific practice that takes course over the weeks and days leading up to competition with the purpose of maximizing the storage of glycogen in muscles. During intense, continuous endurance exercise, your muscles will become depleted of glycogen after about 90 minutes.

405.Gamma motor neuron

Ans. The gamma motor neurons innervate the muscle spindle at each end and at the same time that sensory afferent synapses in the CNS with the AMN, there is also a synapse with GMNs. The firing of the gamma motor neuron carries an efferent signal back to the ends of the intrafusal fiber causing it to contract.

406.Neuron 0.07 volts

Ans. A typical membrane potential for a neuron at rest, the resting potential, is -0.07 volts, or -70 mV. Although this is a rather modest voltage (about five percent of that of an AA battery), consider that this voltage occurs across a miniscule length - that of the cell membrane.

407. General adaptation syndrome (GAS)

Ans. GAS is the three-stage process that describes the physiological changes the body goes through when under stress.

Hans Selye, a medical doctor and researcher, came up with the theory of GAS. Selye identified these stages as **alarm, resistance, and exhaustion**.

408. Pearlman law of heart

Ans. The law states that the stroke volume of the heart increases in response to an increase in the volume of blood in the ventricles, before contraction (the end diastolic volume) during this action all other factors remain constant.

409. The Frank-Starling Law

Ans. The Frank-Starling Law is the description of cardiac hemodynamics as it relates to myocyte stretch and contractility. The Frank-Starling Law states that the stroke volume of the left ventricle will increase as the left ventricular volume increases due to the myocyte stretch causing a more forceful systolic contraction.

410. Preload of the heart

Ans. In cardiac physiology, **preload is the end diastolic volume that stretches the right or left ventricle of the heart** to its greatest dimensions under variable physiologic demand.

411. Plantar flexion

Ans. Plantar flexion is a movement in which the top of your foot points away from your leg. You use plantar flexion whenever you stand on the tip of your toes or point your toes.

412. Dorsiflexion

Ans. Dorsiflexion is the action of raising the foot upwards towards the shin. It means the flexion of the foot in the dorsal, or upward, direction. People use dorsiflexion when they walk.

413. Centre of gravity

Ans. Centre of gravity a point from which the weight of a body or system may be considered to act. In uniform gravity it is the same as the centre of mass.

414. Somatotyping theory

Ans. Somatotyping is the classifying of people into types according to body build. Somatotype theory relates distinctive body types to personality characteristics and relates criminal behavior to the body types.

415. Skewness

Ans. Skewness is asymmetry in a statistical distribution, in which the curve appears distorted or skewed either to the left or to the right. Skewness can be quantified to define the extent to which a distribution differs from a normal distribution.

416. Skewness measurement

Ans. Skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution, or data set, is symmetric if it looks the same to the left and right of the center point.

417.Kurtosis measurement

Ans. Kurtosis is a measure of whether the data are heavy-tailed or light-tailed relative to a normal distribution.

418.Projectile motion

Ans. Projectile motion is a form of motion experienced by an object or particle (a projectile) that is thrown near the Earth's surface and moves along a curved path under the action of gravity only (in particular, the effects of air resistance are assumed to be negligible).

419.Third-class lever

Ans. In a third-class lever, the input force is in between the output force and the fulcrum.

420.Third class lever useful for

Ans. This means they do not provide a mechanical advantage.

In fact, more force is required in a third class lever to move an object. Third class levers are used in applications where speed is important. Because a larger force is applied by the effort, the load travels a further distance.

421.Class 2lever has the greatest mechanical advantage

Ans. A class 2 lever always has a mechanical advantage of greater than 1. To reduce the force required by the user even more, the best wheelbarrow design is one where the wheel is directly under the load, reducing the distance from the load to the fulcrum almost to zero.

422.Supination

Ans. Supination is the opposite motion, in which rotation of the radius returns the bones to their parallel positions and moves the palm to the anterior facing (supinated) position.

423.Circumduction

Ans. Circumduction is a conical movement of a body part, such as a ball and socket joint or the eye. Circumduction is a combination of flexion, extension, adduction and abduction.

424.Scientific management theory

Ans. Scientific management theory is a management theory that analyzes work flows to improve economic efficiency, especially labor productivity. This management theory, developed by Frederick Winslow Taylor

425.Importance of Sulphur in our body

Ans. It is the third most abundant mineral in the human body. Sulfur seems to have antibacterial effects against the bacteria that cause acne. It also might help promote the loosening and shedding of skin. This is believed to help treat skin conditions such as seborrheic dermatitis or acne.

426.Effleurage

Ans. Effleurage is a French word meaning "**to skim**" or "**to touch lightly on**", is a series of massage strokes used in Swedish massage to warm up the muscle before deep tissue work

427.Diathermy

Ans. Diathermy is a medical and surgical technique involving the production of heat in a part of the body by high-frequency electric currents, to stimulate the circulation, relieve pain, destroy unhealthy tissue, or cause bleeding vessels to clot it will be used.

428.Cryotherapy

Ans. Cryotherapy is a pain reliving treatment that uses a method of localized freezing temperatures to deaden an irritated nerve.
It's commonly used as a spot treatment.

429.Barbiturates

Ans. Barbiturates are a kind of depressant or sedative drug. They are an old class of drug used to relax the body and help people sleep.

430.The stretch reflex

Ans. The stretch reflex (myotatic reflex) is a muscle contraction in response to stretching within the muscle. When a muscle lengthens, the muscle spindle is stretched and its nerve activity increases. This stretch increases alpha motor neuron activity, causing the muscle fibers to contract and thus resist the stretching.

431.Osteoporosis

Ans. **Osteoporosis, which literally means porous bone**, is a disease in which the density and quality of bone are reduced. As bones become more porous and fragile, the risk of fracture is greatly increased. The loss of bone occurs silently and progressively. Often there are no symptoms until the first fracture occurs.

432.Osteomalacia

Ans. **Osteomalacia refers to a marked softening of your bones, most often caused by severe vitamin D deficiency.** The softened bones of children and young adults with osteomalacia can lead to bowing during growth, especially in weight-bearing bones of the legs. Osteomalacia in older adults can lead to fractures.

433.Cognition

Ans. Cognition is the process by which one acquires knowledge through experience, thought and sensory input. When a person uses this cognition to integrate various inputs to create an understanding, it's called as **cognitive thinking**.

434.Thanatos

Ans. **Sigmund Freud defines Thanatos as the 'death instinct'**, a drive towards death. Thanatos is responsible for self-destructive behaviour, such as aggression, that could even result in one's own death.

435.Libido

Ans. Libido is a person's overall sexual drive or desire for sexual activity. Libido is influenced by **biological, psychological, and social factors** (average, men have a higher desire for sex than women).

436.Actin filaments

Ans. Microfilaments, also called actin filaments, are protein filaments in the cytoplasm of eukaryotic cells that form part of the cytoskeleton. Actin filaments serve as tracks for the movement of a motor protein called myosin, which can also form filaments.

437.M-4

Ans. Parnel invented body component measuring process where **[i] Fat, [ii] Masculine, [iii] Linearity** was measured in **Fm, Fl, Lf** process.

438.Principles of Physical Education according to Barrow

Ans. 'Principles may be defined as truths or general concepts based on facts and used as guides for taking action and making'.

439.lactic acid accumulation

Ans. Muscle fatigue and lactic acid accumulation, Lactic acid is formed and accumulated in the muscle under conditions of high energy demand, rapid fluctuations of the energy requirement and insufficient supply of O₂. During intense exercise sustained to fatigue muscle pH decreases to about **6.4-6.6**.

440.IQ measuring formula

Ans. The formula was: **$IQ = \text{Mental age} \div \text{Physical age} \times 100$** . No matter what the child's chronological age, if the mental age is the same as the chronological age, then the IQ would equal 100.

441.Flexibility measuring test

Ans. **[i]** modified sit and reach test, **[ii]** breeze up test, **[iii]** front to rear split test, **[iv]** side split test, **[v]** shoulder and wrist elevation test, **[vi]** trunk and neck extension test, **[vii]** Shoulder rotation test.

442.T-Test

Ans. T-Test is agility measuring test where subject running in T-shape course involving forward, lateral, and backwards running.

443.Soccer playing agility test

Ans. Arrowhead Drill (soccer), Balsom Agility Run (soccer)

444.Hexagon Agility Test

Ans. The hexagon agility test is a simple test of agility. The test involves quickly jumping in and out of a hexagon shape. It is similar to the **quadrant jump test**.

445.Purpose of Reactive Shuttle Test

Ans. This is a test of speed, body control and the ability to change direction (agility), as well as reaction time.

446.Box Drill Fitness Test

Ans. **The Box Drill Fitness Test is a test of agility.** Participants are required to run around a 10 yard square course. **It has also been called the “4 Cone” Test.**

447.Kraus-Weber (K-W) Test

Ans. **Dr. Hans Kraus and Dr. Sonja Weber** developed the Kraus-Weber Minimum Test in the 1950's. The six-item medical fitness test measures the strength and flexibility of key postural (core) muscles.

448.Kraus-Weber (K-W) Test items

Ans. Test Descriptions are **[i]** Strength of Abdominal and Psoas Muscles, **[ii]** Strength of Abdominal Minus Psoas Muscles, **[iii]** Strength of Psoas and Lower Abdominal Muscles, **[iv]** Strength of Upper Back Muscles, **[v]** Strength of Lower Back Muscles **[vi]** Floor Touch Test

449. Balke Treadmill Test

Ans. The Balke Treadmill Test was developed as a clinical test to determine peak VO₂ in cardiac patients, though it can also be used to estimate cardiovascular fitness in athletes. **Note that there is also the field test also developed by Balke.**

450.15 minute run test

Ans. This 15-minute running test requires participants to cover the maximum distance possible in 15 minutes. This test, designed by **Bruno Balke**, is one of many running field tests designed to measure aerobic fitness. This test has a formula to predict VO₂max from the run distance.

451.Importance of Body Size measurement in sports

Ans. Being tall is a great advantage in volleyball. Body size measurements such as height and arm span are important to measure. **With junior athletes, these measures can be used for talent identification.**

452.Few Muscle strength measuring test

Ans. Few muscular strength measuring tests are like Cross weber strength test, Roger strength test, Philips jcr test etc.

453.Cable-Tension Strength Tests

Ans. A tensiometer that measures the tension on a cable is the principal instrument. Tests have been devised to measure the strength of approximately forty different muscle groups throughout the body.

454.Larson Strength Test

Ans. The items consist of **chins, dips, and the vertical jump.** It is useful for classifying and grouping students.

455.New York State Physical Fitness Test

Ans. **Posture, throwing accuracy, strength, agility, speed, balance, and endurance** are measured. The test is designed to provide an instrument with which to evaluate the status and progress in fitness of boys and girls grades four to twelve.

456.Army Physical Efficiency Test

Ans. The items are **pull-ups, squat jumps, push-ups, sit- ups, and 300-yard shuttle run**. It is used to test the physical condition of members of the armed forces.

457.Tuttle Pulse-Ratio Test

Ans. Subjects step up and down on a **13-inch stool**. A formula using the resting pulse rate and the pulse rate after exercise has been devised. The test score is based on the **ability of the heart to compensate for exercise**.

458.Harvard Step Test

Ans. Subjects step up and down on a 20-inch bench the rate of 30 steps per minute for five minutes. **The duration of the exercise in seconds * 100, divided by 2 * the sum of pulse counts in recovery** gives the score. **It is one of the best of the tests measuring cardiovascular endurance.**

459. Wetzel Grid

Ans. This is a chart that depicts the growth and development of the individual based on measures of **age, height, and weight**. It provides a cumulative growth record during the child's school years and in most cases detects serious deviations from accepted norms.

460.General Motor Capacity

Ans. This test, developed by Mc Cloy, is intended to measure an individual's innate potenal. The score is obtained by combining the results of the cassificaon Index the **Sergeant Jump, the low Brace Text and the Burpee Test**.

461.The Johnson Test

Ans. Classified as a test of motor educability, the Johanson Test consists of a number of balancing and hopping stunts performed on a mat.

462.The Sargent Jump

Ans. The Sargent Jump, this consists of leaping vercally as high as possible. There are a number of adaptaons. Basically, it measures the ability of the extensor muscles to "explode" and generate force and velocity.

463.Scott Motor Ability Battery

Ans. The three items contained in this test are **the obstacle course, the basketball throw for distance, and the standing broad jump**. It was designed to be used for testing high school and college women but has also been modified by **Kilday and Latchaw** to measure motor ability in ninth-grade boys.

464.AAHPERD Functional Fitness Test

Ans. **American Alliance for Health, Physical Education, Recreation & Dance (AAHPERD)** The tests measure body composition, flexibility, agility, coordination, upper body strength and aerobic endurance.

465.AAHPERD Functional Fitness Test Battery

Ans. These are the test components of the AAHPERD Functional Fitness Test, **[i] Ponderal Index [ii] Sit and Reach Test [iii] Agility Test [iv] Soda Pop Test [v] Arm Curl Test [vi] 880 yard walk**

466.AAHPER Youth Fitness Test

Ans. It is a test which measures a person's physical fitness and endurance. Norms have been developed using percentiles based on age. The following are the test items included in **AAPHER youth fitness test battery:** (a) **Pull-ups (for boys)** (b) **Flexed arm hang (for girls)** (c) **Sit-ups** (d) **Shuttle run** (e) **Standing long (broad) jump** (f) **50 yard dash** (g) **600 yard run/walk.**

467.Quadrant Jump Test

Ans. **This is a non-running type agility test,** measuring the ability to move around in a small space with maximum speed, while maintaining balance and control (coordination).

468.Burpee Test

Ans. **This burpee test is a simple test of strength endurance, agility, balance and coordination,** in which the participant attempts the maximum number of burpees in a set time period. **Another name for the Burpee is the Squat Thrust & Jump.**

469.McDonald Soccer Skill Test

Ans. In this test a player kicks a ball against the wall as many times as possible in 30 seconds.

A soccer ball is placed on a line, marked 9 feet from the wall. Another two soccer balls are left 9 feet behind the line in the center of the test area. **Scoring:** The number of kicks in each 30 second period is recorded, with the highest total being the score.

470.Ronaldo Speed Test

Ans. The Ronaldo speed test assesses the ability to dribble the ball at pace and with control. This is a timed drill - players can be retested to monitor improvements over time. The focus for the players should be on maintaining control of the ball with close touches - not big touches and chasing the ball.

471.Lockhart and McPherson Badminton Skill Test

Ans. The total number of legal hits made on or above the net line in all the three 30 seconds trials is the score of the examinee in the skill test. The scoring may be converted into T-scale as per standard statistical procedure.

472.Bass stick test

Ans. The Stick Lengthwise Balance Test is a simple test of balance using just a stick and stopwatch. The participant is required to stand the ball of both feet on the stick for as long as possible.

473.Test

Ans. A test or examination (informally, exam or evaluation) is an assessment intended to measure a test-taker's knowledge, skill, aptitude, physical fitness, or classification in many other topics.

474.Importance of test in the field of Physical education

Ans. [i] To frame the objectives – [ii] To evaluate the learners – [iii] To evaluate teaching programme – [iv] To know capacities and capabilities – [v] To discover the needs and requirements of the participants.

475.Measurement

Ans. Measurement is the use of tests and techniques to collect information or data about a specific skill or fitness level of an individual.

476.Evaluation

Ans. Evaluation is a systematic process of determining to what extent instructional objectives has been achieved.

477.Criteria of Test Selection

Ans. Criteria of Test Selection must have -Scientific Authenticity, (Reliability, Validity, objectivity, norms) Administrative Feasibility and Educational application.

478.Type of test

Ans. Mainly 4 types of test like- **diagnostic, formative, benchmark, and summative.**

479.APFT

Ans. The Army Physical Fitness Test (**APFT**).

480.BPESS

Ans. Bureau of Physical Education and School Sports (**BPESS**).

481.Power test tools

Ans. Vertical Jump Test, Standing sideways on to a wall with the arms raised above you, mark the highest point you can reach.

482.Balke 15 minute run — A fitness test to measure aerobic power (VO₂max) indirectly.

483.Cooper 12 minute run — A fitness test to measure aerobic power (VO₂max) indirectly.

484.Multistage shuttle run — Also used to estimate aerobic power but more appropriate for multipoint sports. Also effective for testing large groups at a time.

485.Rockport test — A simple walking test for less active individuals.

486.Sit and reach test — The standard flexibility test that measures lower back and hamstring flexibility.

487.30m sprint — A simple fitness test to measure power.

488.30m sprint fatigue — Excellent for multisprint sports such as basketball, soccer, hockey etc.

489.Illinois agility test — Another great fitness test for multisprint sports.

490.Standing long jump — A simple test to measure explosive, ultra-short term power

491.Standing Vertical jump — The standard fitness test used to measure explosive power. Particularly relevant to basketball and volleyball.

492.Hexagon drill — Excellent test to measure quickness, agility and balance.

493.Motor fitness

Ans. Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity.

494.Johnson Basketball Test items

Ans. [i] Field goal speed test, [ii] Basketball throw for accuracy, [iii] Dribble.

495.Stroup basketball Test items

Ans. [i] Goal shooting, [ii] Wall passing, [iii] Dribbling.

496.Anxiety measuring tools

Ans. Among the popular early measures, used primarily for research purposes, were the following: [i] Test Anxiety Questionnaire (TAQ; S. B. Sarason & Mandler, 1952), [ii] Test Anxiety Scale for Children (TASC; S. B. Sarason et al., 1960), [iii] Test Anxiety Scale (TAS; I. G. Sarason & Ganzer, 1963).

497.Achievement motives Scale

Ans. The Achievement Motives Scale (AMS) focuses on two factors of achievement motivation [i] hope of success and [ii] fear of failure.

498.Three types of Somatotypes- Ectomorph, Mesomorph, and Endomorph.

499.Technique Of Somatotyping

Ans. [i] The anthropometric method, [ii] The photoscopic method.

500.Heath-Carter method of somatotyping

Ans. Uses various anthropometric measurements, including skinfolds, weight, height, upper arm circumference, maximal calf circumference, femur breadth, humerus breadth, triceps skinfold, subscapular skinfold, supraspinal skinfold, and medial calf skinfold.