

**THE
SUCCESS
MANTRA**



SPORTS PUBLICATION

- * Strictly based on the latest CBSE syllabus updated on 07.07.2020 for academic year 2020-2021
- * As per **30%** reduced syllabus by CBSE due to Covid-19 pandemic

EASY NOTES CUM SOLVED PAPERS
**PHYSICAL
EDUCATION**
CLASS 12th

KEY FEATURES

- * Updated as per the latest CBSE syllabus issued on 07.07.2020 for 2021 board exam.
- * Blueprint of question papers as per updated syllabus.
- * Includes solved papers with CBSE marking scheme 2020 (All India CBSE Exam) held on 24.02.2020.
- * Updated CBSE sample papers as per the latest CBSE syllabus issued on 9/10/2020.
- * All sample question papers follow the latest design and typology (MCQs, 2 marks questions with pictured based and value based) specified by CBSE for examination success.
- * Chapters and topic wise question bank.

Saurabh Keshari

**EASY NOTES CUM SOLVED PAPERS
PHYSICAL EDUCATION CLASS 12th**

Saurabh Keshari



THE SUCCESS MANTRA

(A Complete Book for Physical Education)

Class-12

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SAMPLE PAPER -I

1. The question paper consists of 30 questions and all are compulsory
2. Question 1-12 carry 01 mark each and are Multiple Choice Questions
3. Questions 13-16 carry 02 marks each and shall not exceed 40-60 words
4. Questions 17-26 carry 03 marks each and shall not exceed 80 -100 words
5. Questions 27 - 30 carry 05 marks each and shall not exceed 150-200 words

1. The first step to organise a big tournament.

- | | |
|---------------|----------------|
| (a) Budgeting | (b) Staffing |
| (c) Planning | (d) Organising |

OR

Which tournament is also called Olympic system tournament?

- | | |
|------------------------------|----------------------------|
| (a) Knockout tournament | (b) League tournament |
| (c) Double league tournament | (d) Consolation tournament |

2. A diet containing all the required nutrient in a proper proportion is called _____?

- | | |
|----------------------|-------------------|
| (a) Nutrition | (b) Nutrients |
| (c) Sports Nutrition | (d) Balanced diet |

3. What is the excess % of the ideal body weight is called obese ?

- | | |
|---------|---------|
| (a) 15% | (b) 20% |
| (c) 25% | (d) 30% |

OR

According to elements of 'Astangyog' asanas lies in what place.

- | | |
|------------|-----------|
| (A) Second | (B) First |
| (C) Fourth | (D) Third |

4. Cognitive disability is dealing with disrupt of _____.

- | | |
|--------------------|---------------|
| (a) Learning | (b) Speaking |
| (c) Solving skills | (d) Reasoning |

5. How many types of motor skill development are there in children?

- | | |
|-------|-------|
| (a) 3 | (b) 1 |
| (c) 4 | (d) 2 |

6. Match the following

- | Stages of growth | Years |
|------------------------|------------------------|
| 1. Early childhood | (a) 2-6 years |
| 2. Middle childhood | (b) 13-19 years |
| 3. Later childhood | (c) 11-12 years |
| 4. Adolescence | (d) 7-10 years |
| (a) 1-A, 2-D, 3-C, 4-B | (b) 1-A, 2-D, 3-B, 4-C |
| (c) 1-A, 2-C, 3-B, 4-D | (d) 1-B, 2-A, 3-C, 4-D |

7. The test to measures acceleration speed of body is

- | | |
|-------------------------|----------------------|
| (a) 50 m standing start | (b) 600 m run/walk |
| (c) Sit and reach test | (d) All of the above |

OR

Formula for calculating Harvard Step Test.

- (a)
$$\frac{\text{Duration of the Exercise in Seconds} \times 100}{2 \times \text{Sum of total Pulse count after recovery period}}$$

Sample Paper -I

(b) $\frac{\text{Duration of the Exercise in Seconds} + 100}{2 \times \text{Sum of total Pulse count after recovery period}}$

(c) $\frac{\text{Duration of the Exercise in Seconds} \div 100}{2 \times \text{Sum of total Pulse count after recovery period}}$

(d) None of these

8. The capacity of muscle to absorb and consume oxygen is called _____.

- (a) Oxygen intake (b) Oxygen uptake
(c) Oxygen gain (d) Oxygen transfer

9. Speed is determined by which physiological factors.

- (a) Aerobic capacity (b) Oxygen intake
(c) Injuries (d) Muscles composition

10. Biomechanics deals with_____.

- A. Muscles involved in movement
B. Effects of force in different movement of human body
C. Study of human organs and their functions
D. To understand time and distance

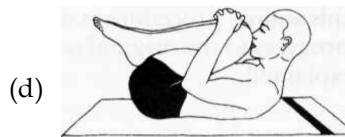
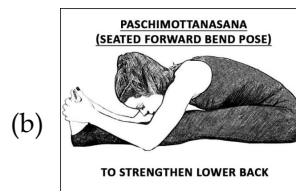
11. The word personality is derived from which latin word

- (a) Perzana (b) Persona
(c) Putara (d) None of the above

12. Match the following

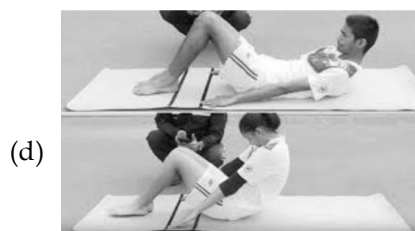
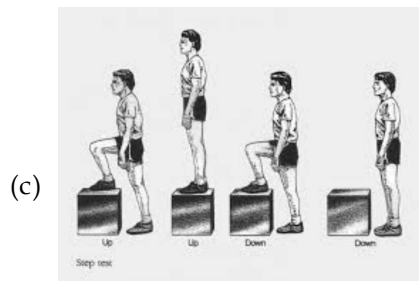
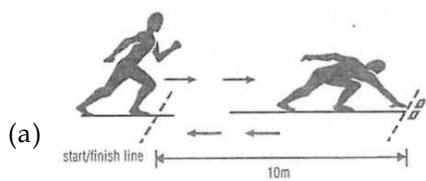
- | | |
|------------------------|--|
| I. Maximum strength | a. Ability to act against max. resistance |
| II. Strength endurance | b. Change in muscle length |
| III. Isotonic method | c. Change in muscles length in rhythmic |
| IV. Isokinetic method | d. Ability to act against resistance in under condition of fatigue |
| A. I-C, 2-B, 3-D, 4-A | B. 1-A, 2-C, 3-D, 4-B |
| C. 1-A, 2-D, 3-B, 4-C | D. 1-B, 2-D, 3-C, 4-A |

13. Identify the name of Asana which is given below?



14. Write down any four exercise for Knock-knee?

15. Identify the purpose of test which is given below.



16. Difference between macro and micro minerals?

OR

How many types of vitamins? Explain with structures.

17. Differentiate between flexion and extension with suitable examples.

18. Amit tends to loose his body weight, he intentionally restricted his diet for a brief period of time. After some days he become sick and unhealthy.

Based on this case answer the following questions.

1. When Amit tends to loose their weight intentionally restricted his diet termed as

- | | |
|-------------------------|-------------------------|
| (a) Food intolerance | (b) Food myths |
| (c) Pitfalls of dieting | (d) Control body weight |

2. What is correct value for healthy weight person in BMI index.

- | | |
|-------------|-----------------|
| (a) < 18.5 | (b) 18.5 - 24.9 |
| (c) 25 - 30 | (d) Above 30 |

3. Amit become sick and unhealthy due to_____

- | | |
|---------------------|-------------------|
| (a) Proper diet | (b) Balanced diet |
| (c) Sport nutrition | (d) Improper diet |

19. Suggest various external methods of motivating a person for better performance in sports.

OR

Explain briefly the two types of aggression.

20. Suggest physical exercise for childhood and adulthood.

21. List down the nutritive components of diet and explain any one.

OR

In sports such as boxing and wrestling players tend to lose weight sharply. Explain the pitfalls.

22. What are the causes of 'flat-foot' and 'knock-knee'? Suggest physical activities as corrective measure for these deformities.

23. What do you mean by aggression? Discuss briefly about instrumental aggression and hostile aggression in sports.

24. List down the test items of Rikli and Jones fitness test and explain the procedure of any one.

25. Write about the concept of "interval training method".

26. What is biomechanics? How it helps in the field of sports and games?

OR

Explains Newton's law of motion and their application in sports and games.

27. Draw a fixture of 21 teams on knock-out basis and prepare all calculations

28. "Disorder is an illness or dysfunctional factors that affect or disrupt the person physically or mentally". Justify your answer.

OR

What do you understand by the term disability etiquettes? Explain any 4 disability etiquettes for visual impairment person.

29. What are the effects of exercise on the cardio respiratory system? Explain.

7. What is the formula for calculating cardiac output?

- (a) H.R. × stroke volume
- (b) H.R. + stroke volume
- (c) H.R. - stroke volume
- (d) H.R. ÷ stroke volume

OR

Effects of exercise on muscular system is

- (a) Increase size of muscles
- (b) Improve reaction time
- (c) Improve muscles contraction time
- (d) All of the above

8. In following, which is not related to hard tissue injuries?

- (a) Bone injuries
- (b) Joint injuries
- (c) Dislocation
- (d) Incision injuries

9. Biomechanics deals with

- (a) Muscles involved in movement
- (b) Effects of force in different movement of human body
- (c) Study of human organs and their functions
- (d) To understand time and distance

10. Primary motivation is also known as _____.

- (a) Extrinsic motivation
- (b) Artificial motivation
- (c) Extreme motivation
- (d) Intrinsic motivation

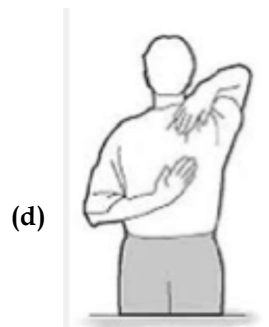
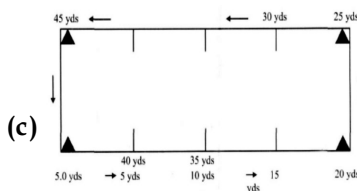
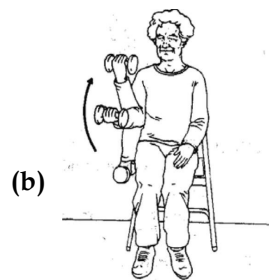
11. Amount of force to exert by our muscles while in motion

- (a) Speed endurance
- (b) Strength endurance
- (c) Dynamic strength
- (d) Active flexibility

12. Match the following:

Committees	Their responsibilities
(A) First Aid Committee	(I) To provide medical facility
(B) Finance Committee	(II) To resolve dispute
(C) Transport Committee	(III) To deal with money & expenditure
(D) Technical Committee	(IV) To provide shifting facility
(A) A-I, B-II, C-III, D-IV	(B) A-I, B-III, C-IV, D-II
(C) A-I, B-II, C-IV, D-II	(D) A-I, B-III, C-II, D-IV

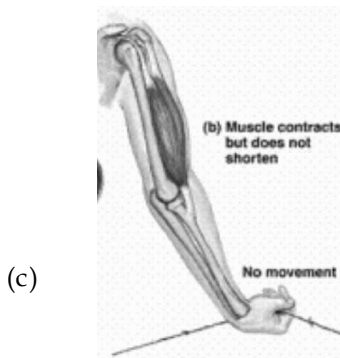
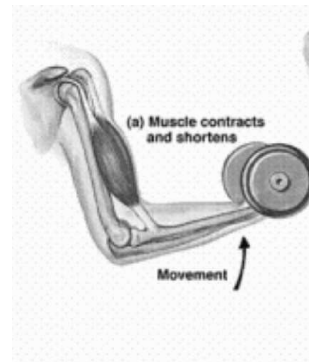
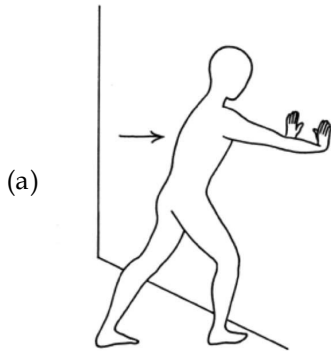
13. Identify the purpose of the test which is given below?



Sample Paper-II

14. Write the name of various types of disorder

15. Identify the types of muscles contraction name which is given below?



16. How many types of knock-out tournament?

OR

How many types of combination tournament?

17. What is food intolerance? Explain its symptoms?

18. Mohan is a student of class 12 and he suffering from diabetes. After medical check-up by doctor he was advised to practice yoga and participate in sports activities for curing it.

Based on this case answer the following questions.

1. The Physical Education teacher at the school has asked mohan to perform

- | | |
|-----------------------|---------------|
| (a) Trikonasana | (b) Hastasana |
| (c) Paschimottanasana | (d) Shavasana |

2. What are the causes of diabetes.

- | | |
|------------------------------------|----------------------|
| (a) Sedentary lifestyle | (b) Heredity |
| (c) Improper production of insulin | (d) All of the above |

3. Due to diabetes insulin is secreted by_____.

- | | |
|---------------|----------------|
| (a) Pancrease | (b) liver |
| (c) Stomach | (d) galbladder |

19. Define motor development and list down the factors affecting it.

OR

Suggest various exercise guideline for infancy and children.

20. Classified the soft tissue injuries their causes and preventive measure in detail.

21. Briefly describe the process and scoring of the 4 × 10 m shuttle run?

OR

Which test is used to measure the co-ordination and balance ability of senior citizen? Write in detail.

22. Differentiate between flexion and extension with suitable examples.

23. Define speed? Explain any one of speed ability in detail with example.
24. Define motivation. Reward is a type of motivation which forces an athlete to excel in sports. Discuss.
25. Write briefly about proteins as an essential component of diet.
26. Explain what is strength and write the methods for improving strength.

OR

Define endurance. Explain any one methods to improve endurance.

27. What is asthma? Write about any one asana which cures asthma.
28. What do you understand by term planning. Write any four objectives of planning.

OR

Suggest the formation of various committees for systematic and smooth conduct of sports day in your school.

29. Enlist the common lifestyle diseases. How can they be prevented with the help of asana/ yoga?

OR

Define obesity. Explain the procedure and benefits of any two asanas which helps to reduce obesity.

30. Discuss the things we keep in our mind when we prepare the activity plan for a person with disability.

SAMPLE PAPER-III

1. The question paper consists of 30 questions and all are compulsory
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4. Questions 17-26 carry 03 marks each and shall not exceed 80 -100 words
5. Questions 27 - 30 carry 05 marks each and shall not exceed 150-200 words

1. The competitions organised outside the boundary wall of an institution are called:
- | | |
|----------------|------------------|
| (a) Intramural | (b) Combination |
| (c) Extramural | (d) All of these |

OR

League tournament is also known as:

- | | |
|-----------------|-----------------|
| (a) Knouckout | (b) Combination |
| (c) Round Robin | (d) Consolation |
2. The main sources of protein are:
- | | |
|-------------------------|------------------------|
| (a) Fish, meat and eggs | (b) Green vegetables |
| (c) Wheat and rice | (d) Sunlight and water |
3. Which one of the following asanas can be performed immediately after the meals?
- | | |
|------------------|-----------------|
| (a) Chakaraasana | (b) Dhanurasana |
| (c) Sukhasana | (d) Vajrasana |

OR

Which one the following asanas in not a remedial asana for treating obesity?

- | | |
|-----------------|--------------------------|
| (a) Vajrasana | (b) Tadasana |
| (c) Trikonasana | (d) Ardha-Matsyendrasana |
4. Cognitive disability is a broad term that includes:
- | | |
|-----------------------------|--------------------------|
| (a) Intellectual disability | (b) Locomotor disability |
| (c) Speach impairment | (d) All of the above |
5. Abnormal curvature of the spine at the front is called_____.
- | | |
|---------------|---------------|
| (a) Scoliosis | (b) Kyphosis |
| (c) Lordosis | (d) Psoriasis |
6. Partialcurl up test measures for the_____.
- | | |
|--------------------------------------|-----------------------|
| (a) Explosive power of legs | (b) Agility and speed |
| (c) Abdominal strength and endurance | (d) All of the above |
7. Rockport test is used to measure:
- | | |
|---------------|--------------|
| (a) Endurance | (b) Strength |
| (c) Speed | (d) Agility |

OR

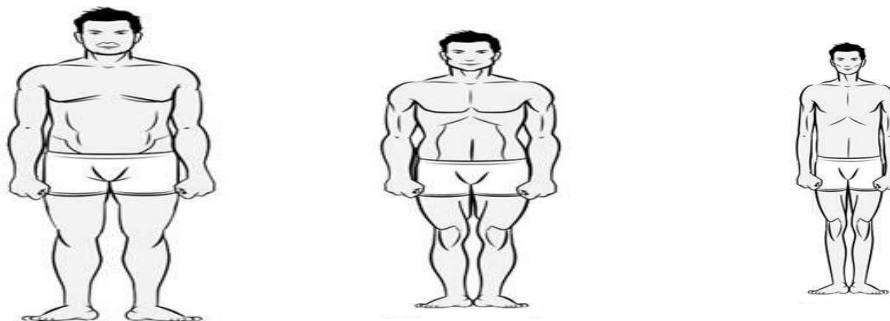
Sit and Reach test is conducted to measure:

- | | |
|-----------------|-------------------|
| (a) Flexibility | (b) Motor fitness |
| (d) Endurance | (d) Speed |
8. Sprain is an injury of the:
- | | |
|------------|--------------|
| (a) Muscle | (b) Ligament |
| (c) Joint | (d) Bone |

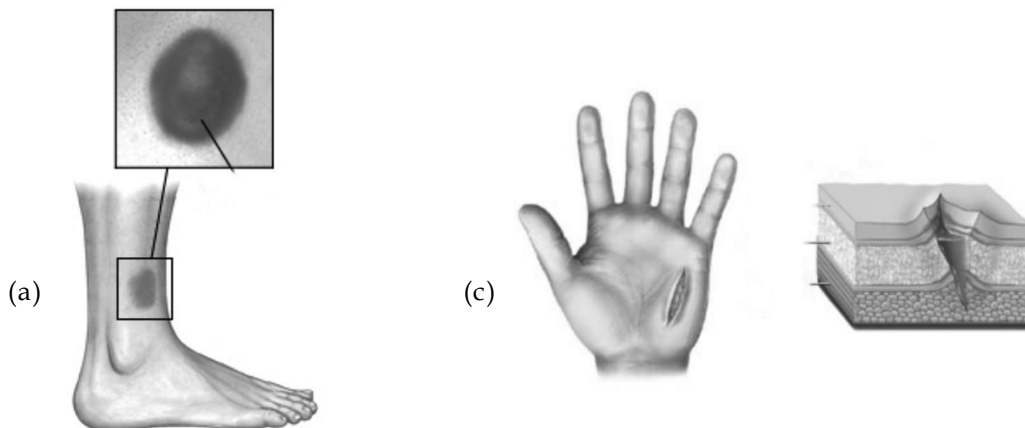
9. The capacity of muscles to absorb and consume oxygen is called:
 (a) Oxygen intake (b) Oxygen uptake
 (c) Oxygen gain (d) oxygen transfer
10. Acceleration of an object will increase as the net force increases, depending on its:
 (a) Density (b) Mass
 (c) Shape (d) Volume
11. Endomorphic, Mesomorphic and Ectomorphic are types of:
 (a) Bones (d) Joints
 (c) Personalities (d) Muscles
12. Match List I with List II:

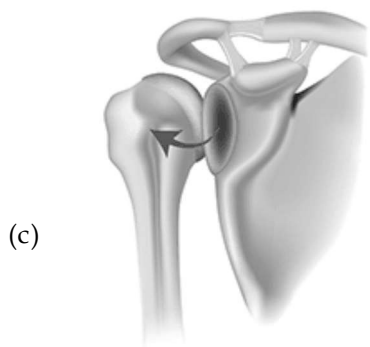
List I		List II	
1. Energy-yielding		i. Carbohydrate	
2. Body-building		ii. Vitamin	
3. Protective		iii. Cellulose	
4. Fiber		iv. Protein	
1	2	3	4
(a) i	iv	ii	iii
(b) iv	i	ii	iii
(c) iv	i	iii	ii
(d) i	ii	iii	iv

13. Identify the body types which is given by WH Sheldon



14. Identify the injuries name which is given below





(c)



(d)

15. Write the name of any four Non-nutritive Components' of diet.

16. Write any four name of asana which cure hypertension.

OR

Write any four name of asana which cure asthma

17. What do you understand by the term disability? Explain any four disability etiquettes.

18. Rahul is a students of cclass VI and suffering disruptive behaviour disorder. thebehaviour of Rahul is arguing with teachers and parents or fighting with some one due to this he always get punishment.

Based on this case answer the following questions.

1. Name the disorder whcih Rahul suffering?

(a) ADHD

(b) OCD

(c) SPD

(d) ODD

2. What is the cases of various types of disorder.

(a) Genetic factor

(b) Social factor

(c) Psychological factors

(d) All of these

3. How to manage Rahul's behaviour

(a) Counselling

(b) Family Therapy

(c) Social skill training

(d) All of these

19. Explain the purpose and procedure of any two batteries for the Motor Fitness Test.

OR

How is cardiovascular fitness measured with the help of 'Harvard Step Test'? Explain

20. Define speed and explain any one method to develop it.

21. Describe the personality types which is given by Carl G. Jung.

OR

What are the type of aggression?

22. Differentiate between Isometric and Isotonic exercises.

23. Discuss in detail the different type of coordinative ability.

24. Explain any three immediate exercise effect on cardiorespiratory system.

25. Draw a fixture of 9 teams in league tournament on the basis of cyclic.

26. "Motivation is the Internal force to achive something." Comment.

OR

Explain Sheldon's classification of personality and explain its importance in physical education and sports.

27. Explain how Newton's law of motion helps to enhance sports perforce with suitable examples.

28. Enumerate the types of fractures? Write briefly about any three types of fractures.

OR

Classified the soft tissue injuries causes and preventive measure in detail.

29. Enlist the common lifestyle diseases. How can they be prevented with the help of asana/ yoga?

OR

Write the procedure, benefits and contraindication for Bhujangasana and Paschimotthonasana.

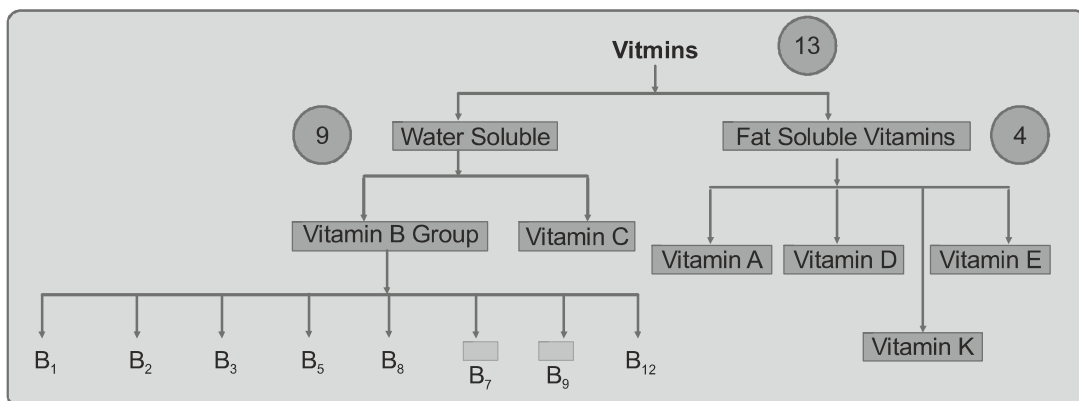
30. Suggest the various exercise guidelines at different stages of growth and development.

SOLUTION SAMPLE PAPER - I

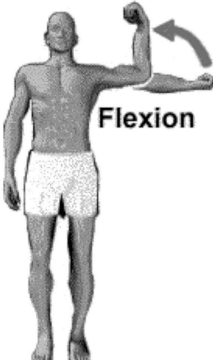
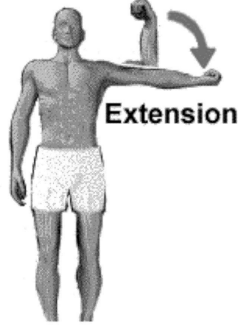
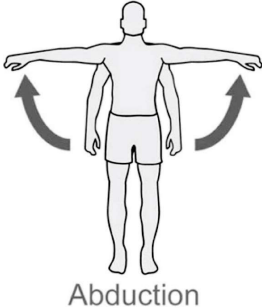
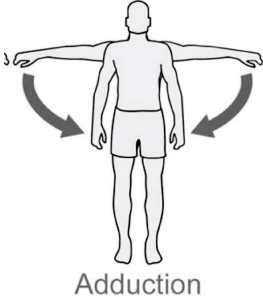
1. Ans. (c) or (a)
2. (d)
3. (b) or (d)
4. (a)
5. (d)
6. (a)
7. (a) or (a)
8. (a)
9. (d)
10. (b)
11. (d)
12. (c)
13. (a) Ardhmatsyendrasana (b) Pashchimottanasana (c) Bhujangasana (d) Pavanamuktasana
14. (a) Keep a pillow in between the knees and stand erect for some-time.
(b) Perform proper exercises like horse-riding, etc.
(c) Perform padmasana, gomukhasana regularly for some time.
(d) Use cod-liver oil to reduce deformity.
15. (a) To measure agility and speed (b) To measure flexibility (c) To measure cardio vascular endurance (d) To measure strength and endurance of abdomen.
- 16.

Macro/ Major mineral	Micro / Trace elements
Calcium	Iodine
Potassium	Iron
Sodium	Chromium
Magnesium	Copper
Phosphorus	Chlorine
Sulphur	Zinc
	Fluoride
	Selenium

OR



17.

Flexion	Extension	Abduction	Adduction
Decrease the angle between two segment. Example: elbow bending, knee bending, fingers bending, etc.	Increases the angle between segment. Example: Elbow extension, knee extension, etc.	Moving the body parts away from the centre axis of midline Example- Raise the arms side-ward	Moving the body towards the midline of centre axis. Example- Down the raise arm towards the body in sideways
			

18. 1. (c) 2. (b) 3. (d)

19. TECHNIQUES OF MOTIVATION

Positive sports environment	Goal setting	Trained coach	Cash prize & scholarship	Role of spectators	Role of mass media	Praise and blame	Job offer
-----------------------------	--------------	---------------	--------------------------	--------------------	--------------------	------------------	-----------

- 1. Positive sports environment:** A well equipped and well facilities gymnasium develop the motivation in sports person for better performance in games and sports.
- 2. Goal setting:** Goal setting is a major technique of motivation for the player. No one can achieve highest goal in one single effort. So, the coach have must set the few goals to the athletes for improvement and helps to achieve highest goal.
- 3. Trained coach:** A good coach always give a best training to the athletes. They create new training method or optimal training load to athletes.
- 4. Cash prizes and scholarship:** Sports person always motivate and strives hard to achieve better in the competition. When prizes or scholarship given by the external competitors.

OR

“Aggression is a product of range of behaviour which emerge from negative circumstances and tendency to harm others either physical, verbal, intentionally or unintentionally.”

- 1. Hostile aggression:** In this type of aggression the sportsman used any physical behaviour which aimed to physically injured or intentionally to harm opponent just out of revenge. Example: boxing player, wrestling and such combative sports.
- 2. Instrumental aggression:** In this types of aggression the sportsmen try to any physical behaviour which aim to achieve high performance without any physical harm. Example: in cricket, when the bowler spoils that batsman’s concentration on the bouncer.

20 EARLY CHILDHOOD (2-6 YEARS)

- Exercise suggests for rapid development of motor skills like ball handling, stair climbing, balancing body, etc.
- Fine motor development related exercise should be promotes like eye-hand and eye-foot coordination.

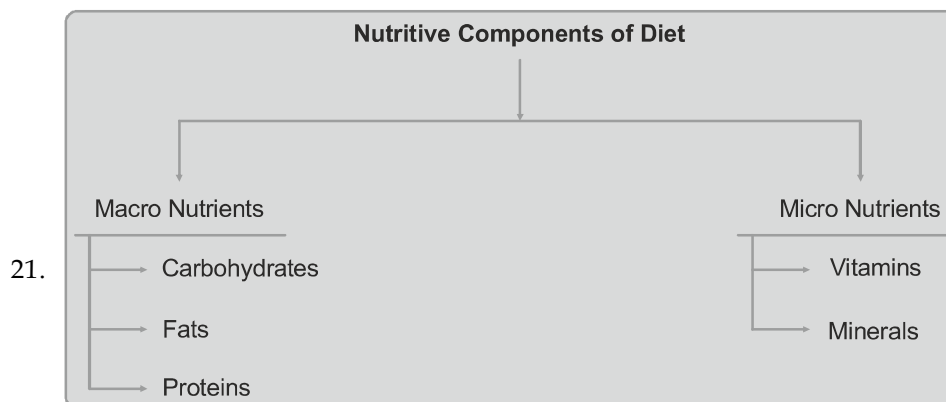
- Recreational and enjoyable games would be played like sea-sow, sack-race, spoon-lemon, etc.
- Minimum one hours physical activities with slow intensity.

MIDDLE CHILDHOOD (7-10 YEARS)

- Suggested exercise for developing gross and fine motor development at the same time.
- Exercise suggested for better posture and balance, variation in movements.
- Children should learn how to synchronise the body movement like dance, aerobics, rhythmic activities.
- Children should learn majority of motor skills, cognitive and social skills.
- Children should involves in major games like football, athletics, gymnastics, basketball, etc.

ADULTHOOD (ABOVE 19 YEARS)

- Moderate intensity physical activity everyday.
- Muscles strong strengthening exercises at least 2 times a week.
- Bone strengthening exercise and resistance exercise.
- Running, swimming etc. for stamina building.



Carbohydrate is the chief source of energy: It is mainly made up of three elements: carbon, hydrogen, oxygen. The ratio of carbon, hydrogen, oxygen is 1:2:1. Approx. 225 to 325 grams of Carbohydrates require daily for healthy adults. They are generally divided into two categories:

OR

PITFALLS OF DIETING

It is intentionally restriction of diet by an individual for a brief period of time to achieve desired results but they end up becoming sick and unhealthy.

1. **Extreme reduction of calories:** Person reduces diet considerable which causes low level of energy thus person feels tiredness and body aches.
2. **Skipping meals:** People often skip meals to reduce weight where as in react meals they take large amount of food.
3. **Low energy diet:** The person take diet without fats and less carbohydrates by which health is affected.
4. **Not performing physical activity:** People often consider that reducing diet for controlling weight but they neglect physical activities which is equally important for healthy lifestyle.
5. **Taking less liquid:** People often think that drinking water or liquid makes them to gain weight which is wrong.

"**Food intolerance is that when a person has difficulty in digesting a particular food**". Food intolerance is more common than food allergy. Food intolerance is a term used widely for varied physiology responses associated with a particular food. In simple words, some persons can tolerate a reasonable amount of the food. But if they eat too much or too often, they get symptoms of food intolerance. Food intolerance comes on gradually, not frequently. It is not life threatening.

22. CAUSES OF THE KNOCK-KNEES:

- (a) Lack of balanced diet, especially vitamin D, calcium and phosphorus.
- b. Due to obesity.
- c. Lifting heavy weight for long time.
- d. Rickets

Corrective measures: Following exercises can be performed to correct the deformity:

- (a) Keep a pillow in between the knees and stand erect for some-time.
- b. Perform proper exercises, like horse-riding, etc.
- c. Perform padmasana, gomukhasana regularly for some time.
- d. Use cod-liver oil to reduce deformity.
- e. Straight leg knee press on the towel placed under the knees.
- f. Use walking calliper.

CAUSES OF FLAT FOOT (NO ARCH IN FOOT)

- (a) Heaviness of the body weight.
- b. Standing for a long time in one position.
- c. Weak muscles and bones.
- d. Improper shoes or flat shoes.

Corrective measures: Perform the following exercise to correct deformity :

- (a) Walking on sand ground.
- b. Writing with legs.
- c. Walking with weight heeled and toes.
- d. Jumping on toe.
- e. To perform vajrasan(a)
- f. Walking on inner and outside of feet.
- g. Good quality shoes.
- h. Performing up and down the heels regularly.

23. "Aggression is a product of range of behaviour which emerge from negative circumstances and tendency to harm others either physical, verbal, intentionally or unintentionally."

1. **Hostile aggression:** In this type of aggression the sportsman used any physical behaviour which aimed to physically injured or intentionally to harm opponent just out of revenge. Example: boxing player, wrestling and such combative sports.
2. **Instrumental aggression:** In this types of aggression the sportsmen try to any physical behaviour which aim to achieve high performance without any physical harm. Example: in cricket, when the bowler spoils that batsman's concentration on the bouncer.

24. 1. Chiar Standd test for lower body strength

2. Arm Curl Test for upper body strength
3. Chair Sit & Reach Test for lower body flexibility
4. Back Scratch Test for upper body flexibility
5. Eight Foot Up & Go Test for agility
6. Six Minute Walk Test for Aerobic Endurance

1. **Chair Stand test for lower body strength**

(a) **Purpose:** To measure the strength of lower body.

(b) **Equipments:** Chair without arms, Stopwatch.

(c) **Procedure.**

- i. Place the chair against a wall, where it will be stable.
- ii. Sit in the middle of the chair with feet flat on the floor, back should be straight.
- iii. Cross arms at the wrists and place them against the chest.
- iv. The test partner will begin and will time you for 30 seconds, using the stopwatch
- v. The subject try ti stand up and sit down as many within 30 seconds.

25. **Interval Training Method** Interval training originated in the 1939 by Coach Waldemar Gerschler and physiologist Hons Reindell of Germany’s Freiburg University to develop fitness in runners. Gerschler and Reindell focused their attention on its cardiovascular aspects and believed that the stimulus for cardiovascular improvement occurs during the recovery intervals between work periods of activity, as the heart rate decreases from an elevated value. In interval training method the total workout or total load is done in several small parts or given incomplete recovery between each workout.

Example = workout → rest → workout →rest → workout → rest → workout → rest.....

26. **Ans.**, “Biomechanics is the study of the structure and function of biological systems by means of method of mechanics.”

1. **Improvement of technique:** Biomechanics helps to develop new technique in sports and games when applying mechanical laws in athletics movement for better performance. Example: Fosbury flop technique in high jump.
2. **To find out the cause of fact:** Biomechanics is helpful for understanding the causes of scientific facts while performance of an athlete in games and sports.
3. **It helps in reduces the mistakes of movement:** Biomechanics also helps to know correct movement and action so, that efficient and effective movement can be perform and chances of injuries reduces.
4. **Improvements in the Equipment:** Biomechanics also helps in improving sports equipments. It helps in improving designs for the equipment used in various sports while providing training. Shoes and sports clothes constitute the equipments used in almost every sports.

OR

i. Newton's First Law of Motion (law of inertia)

Application in sports: A football lying on ground remain stationary position unless some body kick it.

ii. Newton's Second Law of Motion (law of acceleration or momentum)

Application in sports: In cricket, while taking a high catch, the player is required to move his hands backwards while taking the catch. This increases the time, thus decreasing the force required to stop the ball. This ensures that the player doesn’t get hurt in the process.

iii. Newton's Third Law of Motion (law of action and reaction)

Application in sports: Starting block are used by runner to push against at the beginning of race. So that a strong forward reaction push can be received from the blocks.

27. Fixture

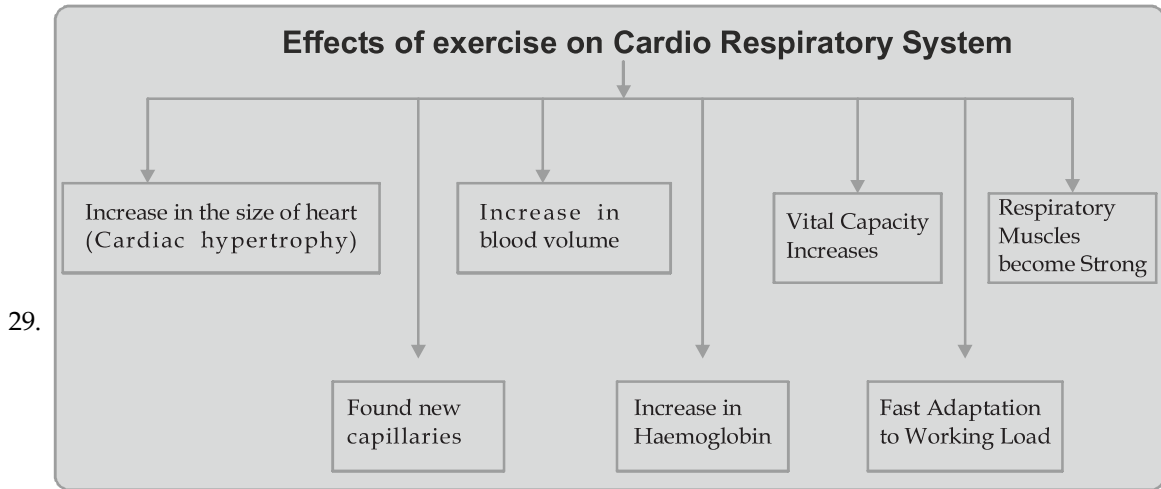
28. "An illness or condition that disrupts normal physical or mental functions." These disorder may includes: cognitive, sensory, attention as well as behaviour of person for fault routine work.

ADHD (Attention Deficit hyper Activity Disorder)	SPD (Sensory Processing Disorder)	ASD (Autism Spectrum Disorder)	ODD (Oppositional Deficient Disorder)	OCD (Obsessive Com-pulsive Disor- der)
The person can’t pay attention and finds it difficult to focus on any one task for longer time.	The brain has trouble receiving and responding information that comes through the sense organs	Person have face difficulty in communicating, lan guage, sound and skill behaviour	The child tend to disrupt around, argue with adults, refuse to obey and are ordinate	Mental disorder that caused re-peated unwanted thoughts, check- ing the things again and again, etc.

OR

1. **Always using appropriate term:** Always used appropriate term like “person with disability or divvyng.” We should not used the term like handicapped, mentally challenged and disabled.
2. **Shake hand always:** Always offer him to shake hand first, when deals with person with disability.
3. **Treat with respectfully:** While treating to any disable person, treating them with respect is must.
4. **Assistance:** When you want to assistance of stabled person wait until the offer is accepted.

5. Addressing yourself first: Always introduce yourself first before starting conversation with visual disabled person.



Increase in the size of heart (Cardiac hypertrophy): By doing regular exercise the muscles of the heart increase in size as well as volume of heart chamber. The left ventricle adapts to the greatest extent. The heart walls become stronger and thicker. Volume of heart chamber untrained = 11.3 ml/kg of body weight effects after exercises = 14 ml/kg of body weight.

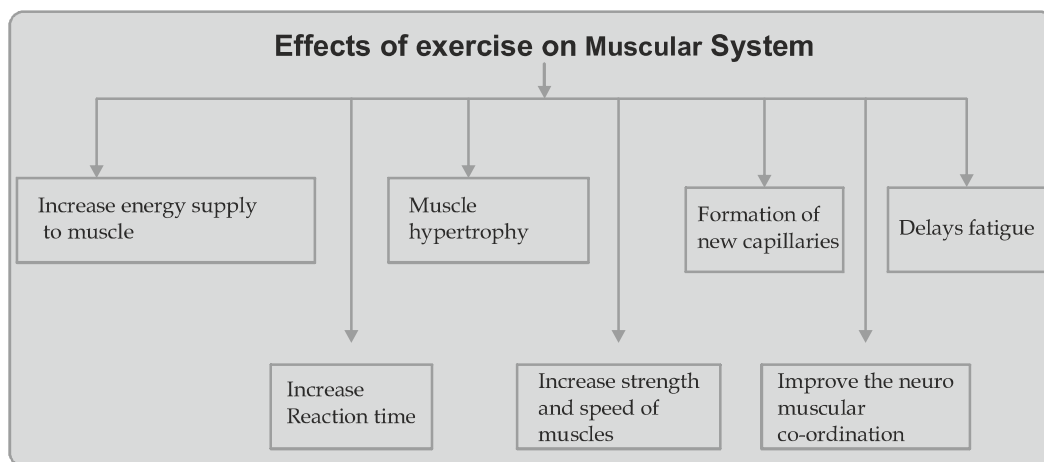
Stroke volume increase at rest: Regular exercise helps in increasing the stroke volume at rest. The stroke volume at rest remains upto 50-70 ml/beat in untrained individual and 70- 90 ml/beat in trained athlete and elite sports person have 90-110 ml.

Decrease in resting heart rate: Exercise decrease the resting heart rate. If a 8 week training program is given to a player whose resting rate is 72 beats per minute, after this personal resting heart rate may becomes more efficient.

Found new capillaries: As during exercise, more oxygen is to be supplied to the muscles, as a result number of blood capillaries increases. The existing blood capillaries also open wider. The blood redistribution becomes more efficient and effective.

OR

1. List down the effects of exercise on muscular system and explain any four in detail?



Increase energy supply to muscle: Due to long training period, the size of the mitochondria increases which improves the energy supply to the muscles. The energy source of muscles is ATP, muscle glycogen and creatine phosphate provides energy to our body.

Muscle hypertrophy: When individuals take part in various physical activities regularly then its shape and size improves due to improves of muscles fibres thickness. The cross section area of muscles also improves.

Formation of new capillaries: By doing exercise regularly, the number of capillaries in the muscles increases and promotes sufficient amount of O₂ to working muscles.

Improve the neuromuscular co-ordination: The ability of nervous system to coordinate muscles moves has increase by doing regular physical activities.

30. PASCHIMOTTANASANA (SEATED FORWARD BEND POSE)

Pre Stage - Sit on the floor with legs spread forward.

Method / how to perform

Step 1- Spread your both feet on the ground like a staff (stick).

Step 2- Catch the thumbs of the feet with hands so far as possible.

Step 3- Join the head near the knees and keep it in this position.

Step 4- Try to touch your elbow to the ground with fingers lock the foot thumb.

Step 5- Hold this positions for 10 sec.

BENEFITS

1. It makes spine elastic. It makes the waist slim and sturdy.
2. Glow comes on the face by performing this pose.
3. It regulates the blood circulation.
4. Anger is removed and mind becomes peaceful.
5. It improves digestive system.
6. Improvement in the alignment of the vertebral column.

CONTRAINDICATION

1. Those who are suffering from severe back pain avoid.
2. If having slip-disc avoid this pose.
3. It should be avoided by pregnant lady.

BHUJANGASANA (COBRA POSE / SNAKE POSE)

Pre Stage: Lie down on your stomach

Method /How to perform

Step 1- Joint the legs together and stretch as much as possible.

Step 2- Place the palm near the shoulder joint.

Step 3- Take a deep breath and lift your upper body upwards. Elbow should be straight.

Step 4- Move your head and neck backwards as possible

Step 5- Exhale and slowly bring the body in starting position.

BENEFITS

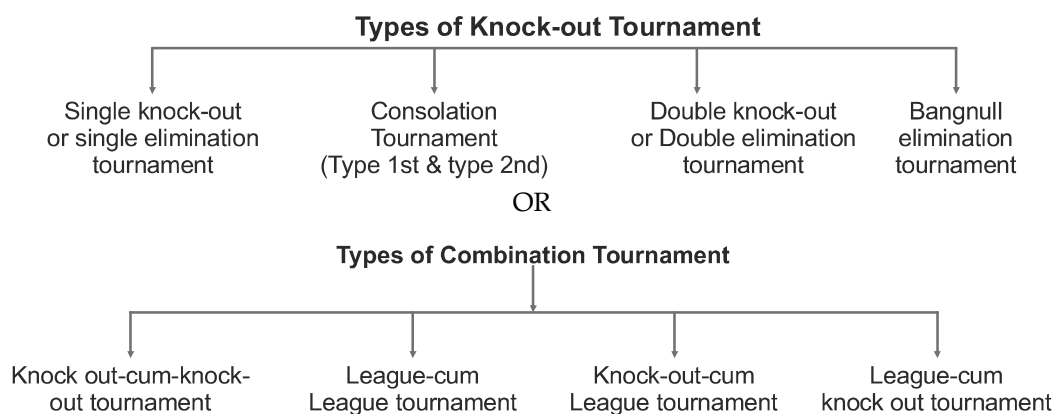
1. This asana activates the upper organs of the body such as neck, shoulder, chest, mouth and head.
2. It makes waist and spine slim.
3. It makes the whole body beautiful and glowing.
4. It reduces obesity.
5. It improves the blood circulation.
6. Many disease of the stomach such as constipation, indigestion and gas trouble are cured.
7. This asana remove the diseases of the kidneys and night discharges.

CONTRAINDICATION

1. Avoid if having severe migraine.
2. Avoid if having spinal problem and neck spondylitis.
3. Pregnant women should avoid.
4. If any one having slip disc problem, avoid this pose.
5. Avoid if having high blood pressure.

SOLUTION SAMPLE PAPER -2

1. Ans. (c) or (d)
2. (a)
3. (c) or (d)
4. (d)
5. (c)
6. (c)
7. (a) or (d)
8. (d)
9. (b)
10. (d)
11. (c)
12. (b)
13. (a) To measure the agility and balance ability while moving (b) To measure upper body strength
(c) To measure aerobic fitness (d) To measure upper body flexibility.
14. 1. Attention deficit hyper activity disorder 2. Autism spectrum disorder 3. Oppositional defiant disorder
4. Obsessive compulsive disorder
15. (a) Isometric (b) Isotonic (c) Isokinetic (d) To measure strength and endurance of abdomen.
- 16.



17. **"Food intolerance is that when a person has difficulty in digesting a particular food"**. Food intolerance is more common than food allergy. Food intolerance is a term used widely for varied physiology responses associated with a particular food. In simple words, some persons can tolerate a reasonable amount of the food. But if they eat too much or too often, they get symptoms of food intolerance. Food intolerance comes on gradually, not frequently. It is not life threatening.

Symptoms of Food intolerance

- Headache
- Anxiety
- Backpain
- Skin Rashes

18. 1. (c) 2. (d) 3. (a) 4.

19. "It is process of child to learn the various body movements and also learn how to control or coordinate their body part for performing various task of life."

FACTORS AFFECTING MOTOR MOVEMENT

1. **Heredity/genetics:** Research study shows that motor development of a child follows the same patterns as of their parents.
2. **Diet:** If child don not get proper diet specially protein their motor movement take place slowly.

3. **Healthy environment:** Healthy environment like encouragement, love and security help the child to take risk to explore fearlessly which leads to better motor development.

OR

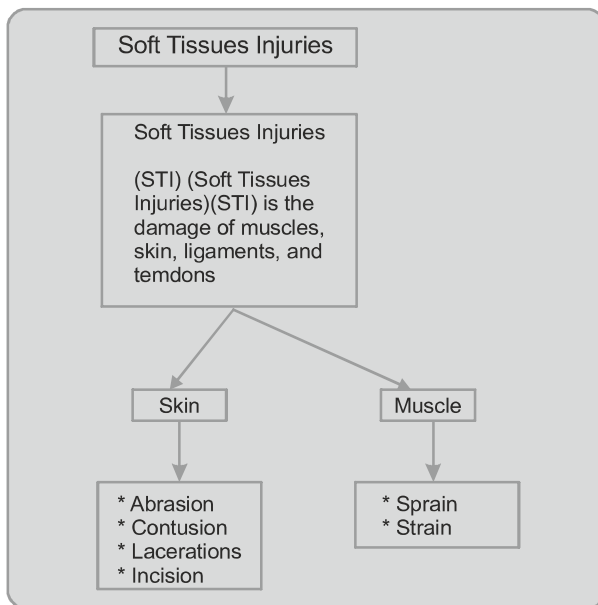
INFANCY

- Exercise related to gross motor activities like moving arms, legs, reaching to object should be promoted.
- Exercise should be suggested for basic motor skills like standing, walking, running, etc.
- Exercise like throwing, catching, kicking a ball, etc.

CHILDHOOD

- Exercise suggests for rapid development of motor skills like ball handling, stair climbing, balancing body, etc.
- Fine motor development related exercise should be promotes like eye-hand and eye-foot coordination.
- Recreational and enjoyable games would be played like sea-sow, sack-race, spoon-lemon, etc.
- Minimum one hours physical activities with slow intensity.

20.



ABRASION It is the injury of skin is scrapped or rubbed by friction. It is normally a minor injury but can be serious, if some foreign matter is stuck in it. It may be caused by a fall or slides on hard or rough surface.

CONTUSION It is an injury caused by the blow or impact, without breaking or rupture of the skin. In other words, it is crushing of soft tissues by a violent external force without breaking the continuity of skin. The skin become blue or black after sometime. Contusion is very common in boxing, wrestling, kabaddi, etc.

LACERATION (WOUNDS) It is the cut over the skin caused due to blunt force and blunt weapon. In other words wound of skin caused by or relatively sharp object so that the skin cuts through its full thickness (both dermis and epidermis are lost and sub cutaneous tissue are exposed).

INCISION Incised wounds are wounds that are usually longer than they are deep. They are caused by sharp item cutting or it is a deep cut due to the sharp edge or object like knife, razors, Blade etc.

TREATMENT

- Such injuries should be cleaned carefully with iodine tincture or spirit.
- Then, after placing a piece of cotton on the wound, a bandage should be applied.
- Care should be taken that dirt should not enter into the wound.
- In case of excessive bleeding, the bandage should be kept tight.
- If the injury is deep, patient should be taken to the doctor immediately.

V. SPRAIN

It is the injury of ligament at the joint. Usually, it occurs at joints, like wrist-joint, ankle-joint, etc. it occurs due to over stretching of ligament or by twisting of joint. In this, there is rupture of ligament and tissues sprain is very painful and it restricts the movement of joint.

21. SHUTTLE RUN (4 × 10M)

(a) Aim / Purpose / What does it measure

To measure the agility as well as speed.

(b) Infrastructures and equipment

- i. Two block of wood 2 × 2 × 4 inches.
- ii. Two parallel lines are marked on the ground 10m apart.
- iii. Two block are place behind any one of the line.
- iv. Stopwatch
- v. Whistle/clapper
- vi. Measuring tape
- vii. Lime powder for marking

(c) Procedure /Administration How to perform

- i. The subject stand behind the line in opposite of block line
- ii. On the command Ready "go" the subjects runs to the block picks one of them runs back to the starting line, place the block behind the line.
- iii. Subjects runs to the block again and picks last block runs to the starting line.
- iv. Then cross the starting line without putting the block.
- v. Two such trials are given.

(d) Scoring

The better time of two trials to the nearest 10th of a second is the score of the subject.

OR

Eight Foot Up & Go Test for Agility

(a) Aim: This test measures speed, agility and balance while moving.

(b) Equipments required:

1. Stopwatch
2. Straight back or folding chair (about 17 inches/44 cm high)
3. One marker
4. Measuring tape
5. Area clear of obstacles.

(c) Procedure:

1. Place the chair against to a wall (for safety) and the marker 8 feet in front of the chair.
2. The subject starts fully seated, hands resting on the knees and feet flat on the ground.
3. On the command, "Go" timing is started and the subject stands and (no running) as quickly as possible (and safely) to and around the cone, returning to the chair to sit down.
4. Timing stops as he sits down.

Trails- Perform two trials

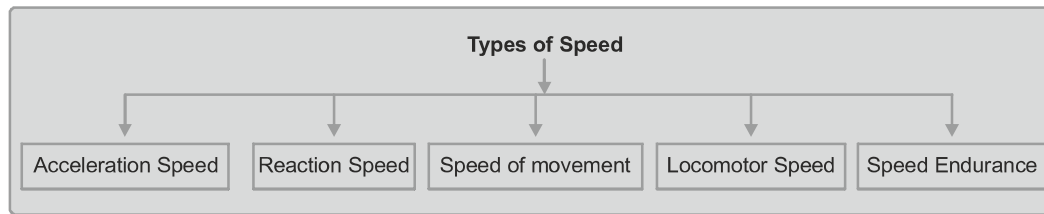
(d)Scoring- Perform tow trials. Take the best time of the two trails to the nearest 1/10th second.

22. **Flexion** : Flexion refers to a movement that decreases the angle between two segment. Flexion at the elbow is decreasing the angle between the ulna and the humerus. When the knee flexes, the ankles moves closer to the buttock, and the angle between the femur and tibia gets smaller.

Extension: Extension refers to a movement that increases the angle between two segment.

Extension at the elbow is increasing the angle between the ulna and the humerus.

23. "It is the ability to move the body as quick as possible."



Reaction ability: It is the ability to react effectively and quickly to a signal. In sports, signals can be different type, for example visual, hearing, tactical and acoustic. Depending on the degree of complexity of the reaction required. The reaction ability is further divided into two groups:

24. TECHNIQUES OF MOTIVATION

Positive sports environment	Goal setting	Trained coach	Cash prize & scholarship	Role of spectators	Role of mass media	Praise and blame	Job offer
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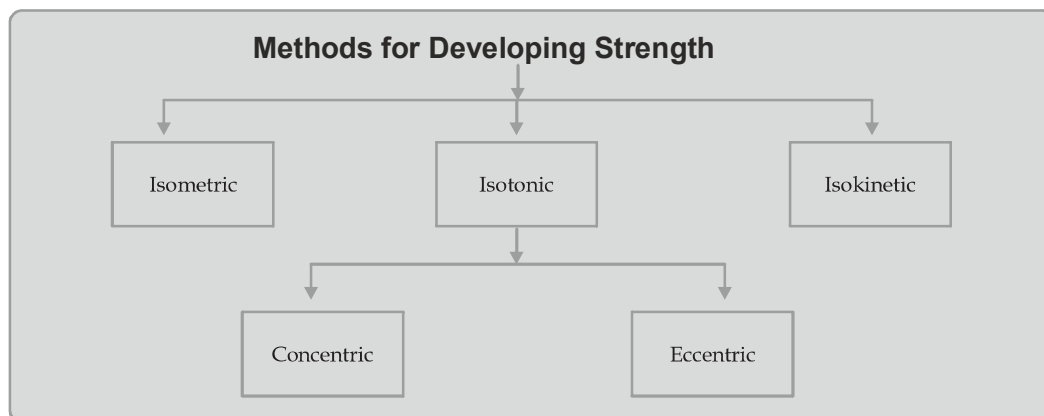
- 1. Positive sports environment:** A well equipped and well facilities gymnasium develop the motivation in sports person for better performance in games and sports.
- 2. Goal setting:** Goal setting is a major technique of motivation for the player. No one can achieve highest goal in one single effort. So, the coach have must set the few goals to the athletes for improvement and helps to achieve highest goal.
- 3. Trained coach:** A good coach always give a best training to the athletes. They create new training method or optimal training load to athletes.
- 4. Cash prizes and scholarship:** Sports person always motivate and strives hard to achieve better in the competition. When prizes or scholarship given by the external competitors.

25. Proteins: The term protein is given by Brazilians. Proteins are the basic structure of all living cells. These are complex organic compounds. The basic structure of proteins is a chain of amino acids that contains carbon, oxygen, hydrogen and nitrogen. The presence of nitrogen differentiates protein form carbohydrates and fat. Body requires only 0.36 gm of protein per pound of the ideal body weight and sports person 1.4 gram per kg. body weight. 1 gram protein gives 4.1 calorie.

FUNCTIONS OF PROTEIN

1. It helps in proper growth & development.
 2. To create nails and hair.
 3. Protein form new tissues and repair the broken tissues.
 4. Protein helps to regulate balance of water and acid.
 5. It helps to transport oxygen and nutrients.
 6. High intake proteins create overload in kidney and liver.
26. "It is ability to overcome resistance or act against resistance."

METHODS OF STRENGTH DEVELOPMENT



Methods for strength development on the basis of muscular contraction.

(a) ISOMETRIC EXERCISE:

These exercises were first introduced by Hettinger and Muller in 1953. Isometric is derived from two words Iso and metric; Iso =Same, Metric= Refers to muscle length.

In isometric exercises, the movement of muscles are not visible or seen. In these exercises, work is performed, but it is not seen directly. When these exercises are done, muscles do not change their length but contraction remains in muscles. For examples: pressing wall, hanging two bucket of water, etc.

(b) ISOTONIC EXERCISES

These exercises were introduced by De Loone in 1954. The word isotonic is derived from two words i.e., Iso and tonic. Iso = Same, Tonic = Muscle tone.

In isotonic exercises, movements of the muscles can be seen directly. Work is done in these exercises. Isotonic exercises tone up the muscles. Muscles become change their length. Length of the muscles (flexion & extension) can be increased or decreased by these exercises. For example: arm curling, squat, etc.

ISOTONIC EXERCISES ARE OF TWO TYPES:

1. **Concentric:** It is upward movement of forearm while elbow flex and the bicep muscles contracts (shorten) and opposite muscles tricep lengthen. Example: bicep curling, chin-ups, etc.
2. **Eccentric:** It is downward movement of forearm action while elbow extend in which tricep muscles contracts shorten and bicep muscles lengthen or relax. Example: squat, kicking the ball, throwing, etc.

ISOKINETIC EXERCISES

These exercises were introduced by J.J. Perrine in 1968. Isokinetic exercises are performed on specially designed machines. The word isokinetic is derived from two words i.e., Iso and Kinetic. Iso = Same, Kinetic = Motion, speed

In these exercises the muscles contract or dynamic movement has done in a continuous form or repetition through whole range of joint. These exercise are done by specially design machine and are combination of isotonic and isometric exercises. Example: rowing, swimming, butterfly, etc.

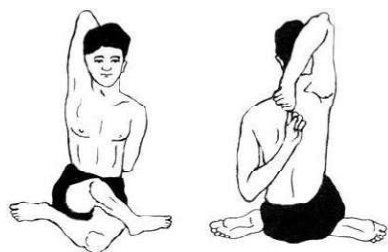
During these exercises contraction of muscle and speed of doing exercises remain same throughout the range of movement.

OR

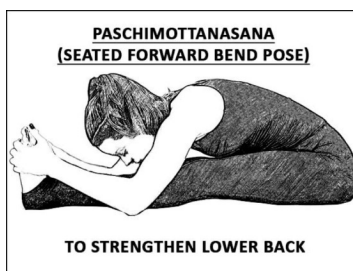
Continuous Training Method

This method was developed by Dr. Earnest Van Aken. This is one of the oldest methods in which a player has to perform running/activity for long period, without having any rest, break or pause. It is of three types:

- i. Slow-pace continuous running method.
 - ii. Fast-pace continuous running method.
 - iii. Variable-pace continuous running method. In these methods, only the speed makes the difference.
 - i. **Slow-pace continuous running method:** This method is basically used by cross country runners, whereas it develops aerobic endurance. In this, the pace is set slow or the speed is low, but the duration and distance is long. Duration of work is approximately 1-2 hours, whereas the distance covered is 10-20 kms. Heart-beat is kept around 140- 170 beats/minute.
 - ii. **Fast -pace Continuous Running Method:** This method is basically used by sprinters and mid-distance runners, where they require anaerobic endurance. It is performed for the duration of 20-40 minutes. Heart rate is kept around 160 to 180 beats/min. Distance covered is 5 kms. to 10 kms.
 - iii. **Variable-Pace Continuous Running Method :** This is the combination of fast and slow pace continuous running method. In this, the speed or pace keeps on changing after some time. It is performed for the duration of 30 min. to 1 hour. Distance covered is 10 kms.to 15 kms. and heart rate is kept around 140 to 180 beats/ min. This method develops anaerobic and aerobic endurance at the same time.
27. Asthma is a disease of lungs in which he airways become blocked or narrowed causing difficulty in breathing.



Gomukhasana



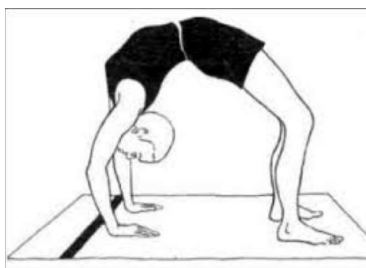
Paschimottasana



Bhujangasana



Sukhasana



Chakrasana



Parvatasana

Chakrasana

Pre-stage: Lie down on the waist and make both leg straight.

Method / How to perform

Step 1- Bend your knees so that the soles of your feet on the floor.

Step 2- Your hands be placed behind your shoulders a fingers pointed towards your shoulders.

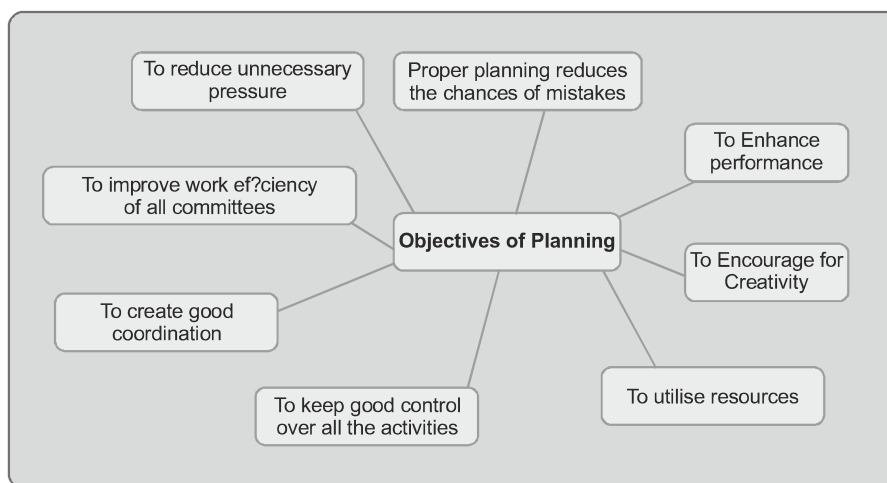
Step 3- Then press your feet and palms and lift your body off the mat.

Step 4- Hands and feet are half feet apart. Head hang between hands.

Step 5- Make the body stretch towards the top so that becomes circle shape.

“Planning is the process of making sequence of work for a future line action”

28. Planning is a way to systematise direct and organise the events or competitions and extract advantage benefit of the available resources.



- i. **To Make Proper coordination:** Proper coordination among the Various members of committees, is necessary for organising the competition smoothly. Without proper coordination among the officials of the tournament, it will not be easy to conduct or organise the sports tournament.

- ii. **To improve work efficiency of all committees:** If all the committees member do their work according to the given plan, There will be not much burden on any one committee so that tournament will be well conduct.
- iii. **Proper planning reduces the chances of mistakes:** If the organiser plans accurately and systematically the chances of mistakes may be reduced in future program.
- iv. **To reduce unnecessary pressure on all the committee members:** Proper planning and systematic way to reduces the pressure all over the committees member. It will also helps for conducting smooth and fair competition.

OR



Organizing Committees

- For organizing and smooth running of the tournament
- It instructs other committee one month prior.
- Assings task and responsibilities to committees

Publicity Committee

- Spread the information about the players/ teams/ officials/ event prior to the tournament, by T.V. Radio, newspapers, poster etc.

Technical Committee

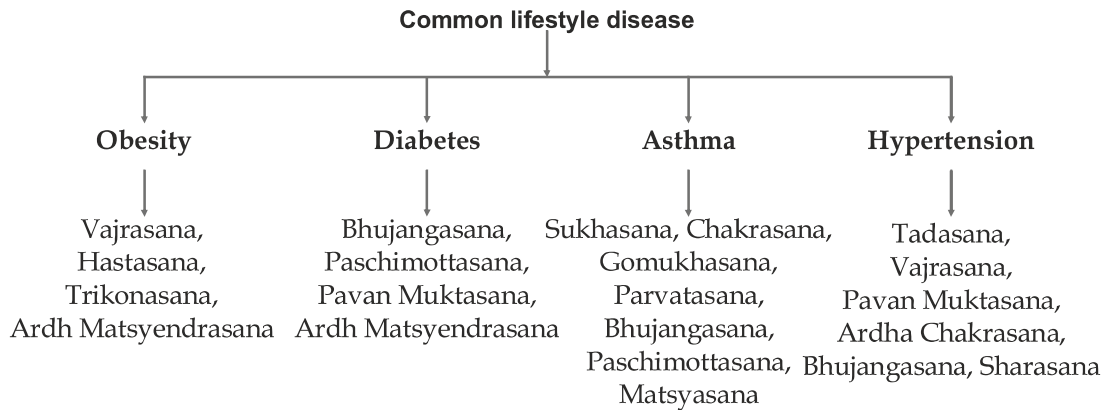
- For the technical conduct of the events.
- Select, various officials such as referees, judges, starters, umpires, time keepers etc.

Ground and equipment Committee

- Prepare the ground for the tournament few days prior.
- To purchase scientific equipment and check properly.

Boarding and Lodging or Refreshment committee

- For providing accommodation and serving meals to the sports persons and other officials.



- 1. Physiological Benefits:** When the person performs daily yogic asanas, it results to improve various physiological functions like: reduce the risk of high blood pressure, bone and joints become strong, cardiovascular efficiency increases, immunity power increases, strength in muscular system, etc.
- 2. Physical Benefits:** Person perform daily asana and yogic kriyas its results to improve shape and size of the body, improve muscular coordination, body stay fit and fine, etc.
- 3. Psychological Benefits:** Regular practice of yogic asanas helps ti improve various psychological function like: improve concentration, improve memory power, decrease anxiety and depression.
- 4. Improve bio-chemical reaction in body:** Doing regular asanas resultant various bio-chemical reaction in our body thus, they improve our internal organs functions, like- increase in haemoglobin count, decrease sodium level in body, etc.
- 5. Health related benefits or some other benefits:** Asana can helps reduce various problems related to health, like obesity, diabetes, asthma, back pain, hypertension, etc, maintain healthy body weight, it cures coronary heart disease, correct postural deformities (kyphosis, scoliosis, knock-knee, etc.) to cure from common lifestyle diseases (obesity, diabetes, asthma, hypertension, etc.), improve fitness components like: strength, flexibility, etc.

OR

"Obesity is defined as a condition of excess body weight and fat. The size and number of the fat cell increase in obese people . A person is said to be obese when his body weight is 20% or more above ideal body weight.



Ardh Matsyendrasana



Vajrasana



Trikonasana



Hastasana

TRIKONASANA (TRIANGLE POSE)

Pre-stage: Standing erect and keeps the together.

Method / How to perform

Step 1- Maintain 3 or 4 feet distance between both legs. As inhaling keep left hand straight & upwards while touching the ear.

Step 2- With an exhalation bend toward right and touches the toe of right leg with right hand.

Step 3- Do another inhaling, come back to straight position.

Step 4- Change hand position and turn to other side.

BENEFITS

1. It improves the flexibility of waist and reduces belly fat.
2. Give strength to the thighs, calves and buttocks.
3. Cures acidity.
4. It increases mental and physical equilibrium.
5. It enhances blood circulation.
6. It reduces stress, anxiety, back pain and sciatic(a)

CONTRAINDICATION

1. Avoid if having low or high blood pressure.
2. Avoid if having hamstring injury
3. Avoid performing this case of severe backache.

2. What do you mean by obesity? How Vajrasana can prevent from obesity?

Ans. "Obesity is defined as a condition of excess body weight and fat. The size and number of the fat cell increase in obese people . A person is said to be obese when his body weight is 20% or more above ideal body weight.

(I) VAJRASANA (ROCK SETTING POSE)

Pre-stage- Sitting on floor with both legs forward

Method / How to perform

Step 1- Fold right leg and placed it under right buttocks.

Step 2- Fold left leg and place it under left buttocks.

Step 3- Keep your spine neck and head straight interlock your toes, open your ankle.

Step 4- Heels should be touching the ground.

Step 5- Keeps both hands on your thigh and look straight.

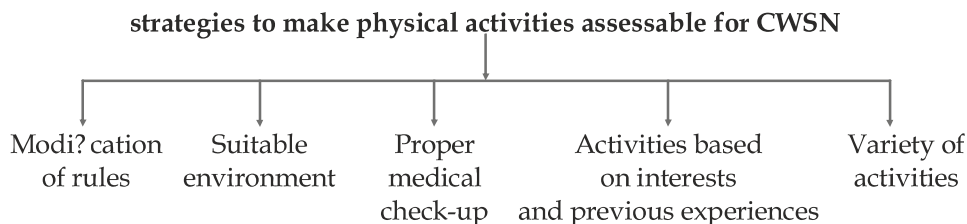
BENEFITS

1. This asana is for mediation.
2. It can be Practiced after having food. It enhance digestion process.
3. It cures indigestion and improves metabolism.
4. This asana removes mental disappointment and loss of memory.
5. If women do this asana, defects regarding their menstruation are removed.

CONTRAINDICATION

1. Those suffering from chronic knee pain should not practice Vajrasana(a)
2. The women who is in pregnancy avoid this asana(a)
3. Avoid practice if having severe arthritis of the knee.
4. Person suffering from hernia or ulcers should avoid it

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- 1. Modification of rules:** Rules can be modified according to the needs of the children. Make easy and simple rules of the games so that they should not feel difficulty in playing.
- 2. Suitable environment:** For special needs of children, the area should be limited as movement capabilities of CWSN. In case if children who have autism, they must be provided specific area because they may need some time to relax. Light and sound are also vital for making good environment.
- 3. Proper medical check-up:** Without complete medical check up, the teachers of physical education cannot come to know about the type of disability child is facing and they don't identify suitable games.
- 4. Activities based on interests and previous experiences:** Physical activities must be based on interest,

aptitudes, abilities, previous experience and limitations of children with special needs. The teachers of physical education should have deep knowledge of limitations, interest and aptitudes of children.

- 5. Variety of activities:** A variety of different strategies such as verbal, visual and peer teaching should be used for performing various types of physical activities. Children get opportunity to learn by their close one and became independent.