

**JEE(MAIN + ADVANCED) : ENTHUSIAST COURSE****PHYSICAL EDUCATION****SOLUTION**SECTION-A**1. Benefits**

1. It alleviates lower back pain.
2. It helps in removing constipation.
3. It improves posture.
4. It stimulates abdominal organs.
5. It helps in relieving stress.
6. It provides relief to persons who have mild sciatica and slip disc problem.
7. It strengthens the muscles of the spine, buttocks and back of the arms and legs. (Any two)

2. The word motivation is derived from a Latin word 'Movere' meaning 'to change' or 'to move'. When we say that one is motivated, it means that he is driven or moved by an inner urge or force to achieve the goal. We may refer motivation as a process through which an individual is inspired, stimulated, to act in a particular manner towards the particular direction. It is the inner condition of the individual that initiates or directs his behavior towards the goal. In fact, it is the force which incites individuals to perform some activities. It also determines the individual's direction of action and his intensity of action.

According to Morgan and King, "Motivation refers to the state within a person or animal that drives behavior towards some goal."

3. **Passive Flexibility** : The ability to do movements with greater distance with external help is called passive flexibility, e.g., stretching exercises with the help of a partner.

**Active Flexibility** : It is the ability to do movements for a longer distance without external help, e.g., to do a stretch without the help of a partner. It can be divided into two parts :

- (i) **Static Flexibility**: It is usually required by a sportsperson when he remains in static position, e.g., in diving, sitting, lying and starting position in various sports.
- (ii) **Dynamic Flexibility**: Dynamic flexibility is needed for doing movements with greater distance when an individual is in motion.

4. **OCD** : Obsessive Compulsive Disorder

**ODD** : Oppositional Defiant Disorder

5. 1. Orientation Ability                                2. Coupling Ability  
3. Reaction Ability                                    4. Balance Ability  
5. Rhythm Ability                                      6. Adaptation Ability  
7. Differentiation Ability                             (Any four)

6. **Cognitive Disability** : Indeed, it is a neurological disorder that creates hindrance or obstruction for an individual to store, process and produce information. This ability can affect an individual's ability to read, compute, speak and write. So, these types of disability can also be called invisible disability because unlike other disabilities, you may not be able to assess the condition by just looking at the individual.

**Causes of impairment**

- |  |                                     |
|--|-------------------------------------|
| 1. Genetic factor                        | 2. Brain injuries                   |
| 3. Low birth weight                      | 4. Lack of discipline in the family |
| 5. Diet and exposure to toxic substance. | 6. accident                         |

7. **Causes of stress fracture** : Stress fractures often result from increasing the amount or intensity of an activity too quickly.

**Prevention of stress fracture** : Low impact activities added to exercise regimen to avoid repetitively stressing a particular part of the body.

8. In psychology, the term aggression refers to a range of behaviors that can result in both physical and psychological harm to oneself. This type of social interaction centers on harming another individual either physically or mentally.

“Aggression is a behavior with a goal harming or injuring another being motivated to avoid such treatment”.

**Aggressions and sports** : Aggression is always there in the games and sports to show the superiority and domination of one team over other. This is must in games to some extent because it makes the player strict and perfect. But it should be in limit. If this types of behaviors crosses the limit, it van harm the sportsman sprit. The assertive aggression in the game should be tackled. Sports psychologists agree that aggression can enhance sports performance. In fact, aggression in the field of sports and games comes out of frustration which arises due to goal blockage.

9. These asanas are helpful for a person suffering from asthma

1. Bhujangasana
  2. Paschimottanasana
  3. Sukhasana
  4. Chakrasana
  5. Gomukhasana
  6. Parvatasana
  7. Matsyasana
- (Any two)

### **SECTION-B**

- 10.
1. Goal Setting
  2. Competitions
  3. Equipment
  4. Praise and criticism
  5. Rewards
  6. Punishment
  7. Presence of others
  8. Records of success or progress
  9. Motivational music, positive attitude and positive self-talk (Explain any three)

11. **Obsessive Compulsive Disorder (OCD)**

Obsessive compulsive disorder is a mental health disorder that affects people of all ages and walks of life. It is a type of mental disorder that causes repeated unwanted thoughts. To get rid of the unwanted thoughts, he/she performs the same task/activity again and again. For example, a person may fear that everything he/she touches has germs on it. So, to get rid of that fear he/she washes his/her hands again and again.

#### **Symptoms of OCD**

Development of OCD may have symptoms of obsessions, compulsions, or both. They are divided into two parts and are explained below:

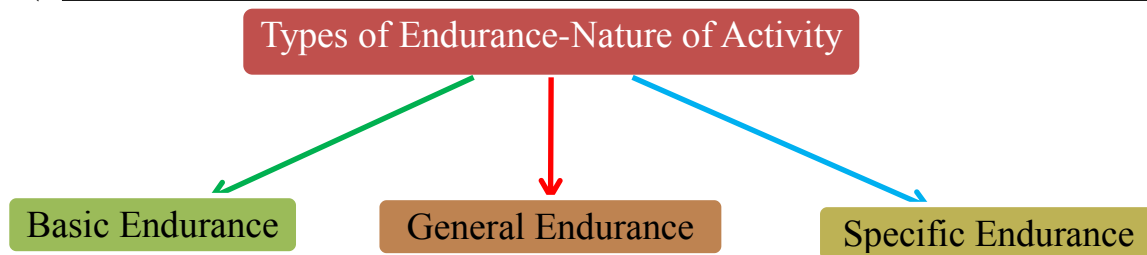
(a) **Obsessions related**

1. Fear of germs or contamination.
2. Unwanted forbidden or prohibited thoughts
3. Aggressive thoughts towards other or self

(b) **Compulsions related**

1. Excessive cleaning particularly hand washing
2. Ordering and arranging things in a particular and precise way
3. Repeatedly checking on things
4. Compulsive counting

12.



**Specific Endurance** : It is the ability to stand against fatigue in sport specific conditions. Specific endurance varies from activity to activity as it depends on the nature of fatigue.

### 13. Benefits of Matsyasana

1. It is helpful in curing back pain, knee pain and tonsillitis.
2. It also cures the defects of eyes.
3. Skin diseases can be cured, if we practise this asana regularly.
4. This asana helpful in the treatment of diabetes.
5. It helps in relieving tension in the neck and shoulders.
6. It improves posture.
7. It provides relief from respiratory disorders by encouraging deep breathing.
8. It is the best asana to get relief from asthma.

### Benefits of Vakrasana

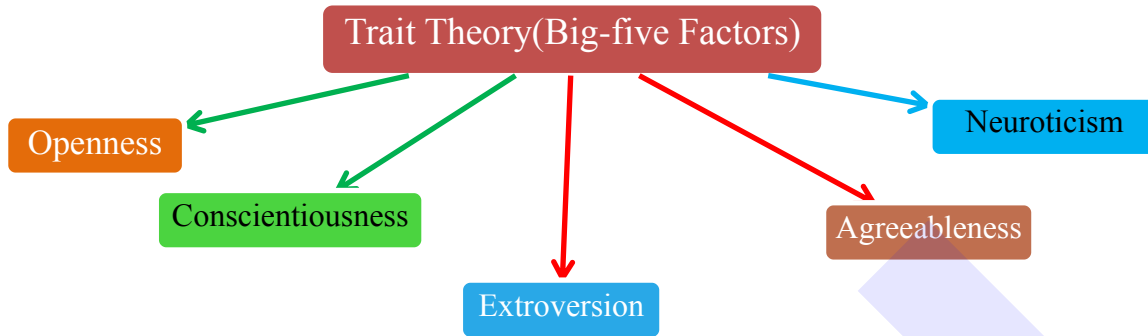
1. It improves the function of both spinal cord and nervous system.
2. It prevents and controls diabetes.
3. It strengthens kidneys.
4. It helps in reducing chronic back pain and shoulder pain.
5. It gives relief in stiffness of vertebrae.
6. It reduces belly fat.

14. (a) **Slow Continuous Method** : In this variation a sportsman exercises at a certain speed without any pause for very long durations. Long cross-country runs are typical examples of slow continuous method. In this method the speed or pace of exercise is determined according to heart rate. For trained sportsman the heart rate during the exercise should be from 140-160 beats per minute. In between the duration of the activity, the volume should not be less than 30 minutes. The total duration, in case of endurance athletes can go up to 2 hours or even more. Cyclic activities like running, cycling, walking etc. are used for this method.

- (b) **Fast Continuous Method** : In this variation the work is done at fast but unchanging pace for long durations without any break. Heart rate is normally between 160-180 beats/minute, the total volume of duration should be not less than 20 minutes for trained sports persons. Because of higher intensity the fast continuous method is more strenuous and exhaustive.

### SECTION-C

15.



**Agreeableness** : Such individuals are friendly, cooperative, compatible, kind and gentle. Persons with too agreeableness may be more distant or aloof. They are kind, generous, affectionate and sympathetic.

**Neuroticism** : Neuroticism is also called emotional stability. This domain or dimension relates to one's emotional stability and the degree of negative emotions. Persons who have high neuroticism usually experience emotional instability and negative emotions. Such individuals remain moody and tense.

16. **Strength** : Strength is the ability to overcome resistance or to act against resistance. It should not be considered a product of only muscular contractions. It is, in fact a product of voluntary muscle contractions caused by the neuro-muscular system. It is an essential element or component of physical fitness.

According to Mathews, "Muscular strength is the force that a muscle or group of muscles can exert against a resistance in one maximum effort.

#### Types of Strength

- (a) **Dynamic Strength** : It can be also called isotonic strength because it is related to the movements. Movements are clearly visible when someone uses dynamic strength. In pull-ups and push-ups we require Dynamic Strength. It can be divided into three parts-
- (i) **Maximum Strength** : It is the ability to overcome or to act against maximum resistance. It is a motor ability and involves force application during a voluntary movement. It is not important in majority of the sports. It is important only in those sports in which very heavy resistance has to be tackled e.g., weight lifting, throws etc.

- (ii) **Explosive Strength** : It is combination of strength and speed. It can be defined as the ability to overcome resistance with high speed. A high percentage of movements in sports is of explosive nature and involves overcoming of some external resistance or of one's own body weight. Explosive strength therefore, is important in most of the sports. Even in endurance sports, explosive strength is important for start as well as for 'spurt' phase.
- (iii) **Strength Endurance** : It is the ability to overcome resistance or to act against resistance under condition of fatigue. Strength endurance can be a form of static or dynamic strength depending on the fact whether the movement is static (isometric) or dynamic (isotonic).
- (b) **Static Strength** : It is also called isometric strength. It is the ability of the muscles to act against resistance. This type of strength is not seen directly.

## 17. Physiological Factors Determining Endurance

1. **Aerobic Capacity** : To perform an activity continuously, energy is required by the muscles which can be supplied in the presence of oxygen. Therefore, the ability of the organism to maintain the adequate supply of oxygen to the working muscles (i.e. aerobic capacity) for energy liberation is important for endurance performance. The aerobic capacity depends on the following factors:
  - (a) **Oxygen Intake** : It is the amount of oxygen which can be taken by the lungs from atmosphere. The oxygen intake depends on the vital capacity which further depends on the lung size, number of active alveoli, strength of the respiratory muscles and size of the chest cavity etc.
  - (b) **Oxygen Transport** : The amount of oxygen taken into the blood from lungs has to be transported to the working muscles. The oxygen transport depends on the amount of oxygen which the blood has absorbed from the lungs and the ability of the circulatory system to carry this quickly to the working muscles. The transportation of oxygenated blood depends on the capacity of the heart. This capacity can be improved through training.
  - (c) **Oxygen Uptake** : The amount of oxygen which can be absorbed and consumed by the working muscles from the blood is called oxygen uptake. The oxygen uptake depends on the rate of diffusion which is further determined by the speed of blood flow, temperature and partial pressure of oxygen in the blood and of carbon dioxide in the muscles cell. The speed and amount of oxygen consumption also depends on the number, size and metabolic capacity of the mitochondria and fortunately these can be improved up to some extent through training.

(d) **Energy Reserves:** The aerobic capacity also depends upon the availability of fuel to the muscles for getting energy for the activity. Therefore, the aerobic capacity depends upon the muscles glycogen and sugar level in the blood. If the muscle glycogen level falls below a certain level, the fatigue occurs. For long duration activities, the muscle and liver glycogen reserves are important.

2. **Lactic Acid Tolerance :** The ability to tolerate the higher concentration of lactic acid is a significant factor in determining anaerobic capacity. The lactic acid tolerance is important for activities. It can be improved through training. It can help in improving endurance performance.
3. **Movement Economy :** The economical movements are significant for endurance performance. Correct movement is a good technique in endurance sports so, we can save energy.
4. **Muscle Composition:** There are two basic muscle fibres slow and fast. The slow twitch fibres are best used for aerobic or endurance activities. They produce small levels of force for long periods of time and that is why, they are better suited for endurance activities. The percentages of these fibres are regulated genetically

## 18. Ardhamatsyandrasana

### Benefits

1. It keeps gall bladder and the prostate gland healthy.
2. It enhances the stretchability of back muscles.
3. It alleviates digestive ailments.
4. It regulates the secretion of adrenaline and bile and thus is recommended in yogic management of diabetes.
5. It is also helpful in treating sinusitis, bronchitis, constipation, menstrual disorders, urinary tract disorders and cervical spondylitis.

### Contraindications

1. Women, who are two or three months pregnant, should avoid practising this asana.
2. The individuals, who suffer from peptic ulcer, hernia or hypothyroidism, should practise this asana only under expert guidance.
3. The individuals who have the problem of sciatica or slipped disc may benefit from this asana but they need to take great care while doing this asana.



Ardhamatseyendrasana