

**Class 12**  
**Physical Education**  
**Set 3 with Solutions**

**Time Allowed: 3 Hours**

**Maximum Marks: 70**

General Instructions:

The question paper consists of 5 sections and 37 Questions.

Section A consists of Questions 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.

Section B consists of Questions 19-24 carrying 2 marks each and are very short answer types and should not exceed 60-90 words. Attempt any 5.

Section C consists of Questions 25-30 carrying 3 marks each and are short answer types and should not exceed 100-150 words. Attempt any 5.

Section D consists of Questions 31-33 carrying 4 marks each and are case studies. There is the internal choice available.

Section E consists of Questions 34-37 carrying 5 marks each and are short answer types and should not exceed 200-300 words. Attempt any 3.

Section - A (18 marks)

Question 1.

Which committee fixes the venue, date, and timing of the sports events? [1]

- (a) Post-meeting committee
- (b) Committee for official
- (c) During the meeting committee
- (d) Pre-meet committee

Answer:

- (d) Pre-meet committee

Explanation: Pre-meet work organizing committee is set up for the purchase of equipment, the layout of courts, etc.

Question 2.

League tournament is also known as [1]

- (a) Knockout
- (b) Combination
- (c) Round robin
- (d) Consolation

Answer:

- (c) Round robin

Explanation: League Tournaments are also called round-robin tournaments. In a league tournament, the teams/players are treated at par. Whether the team/player wins a match or loses, the team will get a chance to play with every other team.

Question 3.

Match List I with List II: [1]

## List I

## List II

---

(1) Energy yielding

(i) Carbohydrates

---

(2) Bodybuilding

(ii) Vitamin

---

(3) Protective

(iii) Cellulose

---

(4) Fiber

---

(iv) Protein

codes: 1 2 3 4

(a) (i) (iv) (ii) (iii)

(b) (iv) (i) (ii) (iii)

(c) (iv) (i) (iii) (ii)

(d) (i) (ii) (iii) (iv)

Answer:

(a) (i), (iv), (ii), (iii)

Explanation:

Carbohydrates

Alongside fat and protein, It is one of the three macronutrients in our diet with their main function being to provide energy to the body.

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Protein

It helps repair and build your body's tissues, allows metabolic reactions to take place, and coordinates bodily functions. In addition to providing your body with a structural framework, proteins also maintain proper pH and fluid balance.

---

Vitamin

They help shore up bones, heal wounds, and bolster your immune system. They also convert food into energy and repair cellular damage.

---

Cellulose

Humans cannot digest cellulose, but it is important in the diet as a source of fiber.

---

Question 4.

Given below are the two statements labeled Assertion (A) and Reason (R).

Assertion: Our digestive system does not process intolerant foods properly.

Reason: The absence of some enzymes does not let the food to be processed properly.

In the context of the above two statements, which one of the following is correct? [1]

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).

(c) (A) is true but (R) is false.

(d) (A) is false but (R) is true.

Answer:

(a) Both (A) and (R) are true and (R) is the correct explanation of (A)

Explanation: Due to the absence of certain enzymes, our digestive system does not process intolerant foods properly.

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Question 5.

Which one of the following asana can be performed immediately after the meals? [1]

(a) Chakrasana

(b) Dhanurasana

(c) Sukhasana

(d) Vajrasana

Answer:

(d) Vajrasana

Explanation: It is the only pose that can be done on a full stomach. In fact, it should be done right after having a meal. Avoid doing it in case on any leg or knee injury, it is also known to relieve constipation and facilitate nutrient absorption in the body.

Question 6.

Which one of the following asanas is not a remedial asana for treating obesity? [1]

(a) Vajrasana

(b) Tadasana

(c) Trikonasana

(d) Ardh Matsyendrasana

Answer:

(b) Tadasana

Explanation: Tadasana helps you in correcting your posture and improves your balance by making your spine more agile.

Question 7.

Which micronutrient helps us in keeping our body warm? [1]

(a) Fat

(b) Vitamin

(c) Carbohydrate

(d) Protein

Answer:

(a) Fat

Explanation: The body uses fat as a fuel source, and fat is the major storage form of energy in the body.

Question 8.

The transition period between childhood to adulthood is known as [1]

(a) Infant hood

(b) Early childhood

(c) Adolescence

(d) Senescence

Answer:

(c) Adolescence

Explanation: Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to adulthood.

Question 9.

The abnormal curve of the spine in front is called: [1]

(a) Scoliosis

(b) Lordosis

(c) Kyphosis

(d) Psoriasis

Answer:

(c) Kyphosis

Explanation: It is also called swayback, the spine of a person with lordosis curves significantly inward at the lower back. Kyphosis is characterized by an abnormally rounded upper back (more than 50 degrees of curvature). A person with scoliosis has a sideways curve to their spine.

Question 10.

In Bow legs, there is/are: [1]

- (a) a wide gap between knees
- (b) plain foot sole
- (c) knee colliding with each other
- (d) both legs curving inwards

Answer:

- (a) a wide gap between knees

Explanation: A Bow leg is when the legs curve outward at the knees while the feet and ankles touch.

Question 11.

Which Newton's law of motion deals with acceleration? [1]

- (a) First
- (b) Second
- (c) Third
- (d) Fourth

Answer:

- (b) Second

Explanation: Newton's second law is a quantitative description of the changes that a force can produce on the motion of a body. It says that acceleration happens when a force acts on a mass (object).

Question 12.

How many types of tournaments are there? [1]

- (a) Eight
- (b) Four
- (c) Six
- (d) Two

Answer:

- (b) four

Explanation: There are four main types of tournaments knock-out, league, combination, and challenge tournament,

Question 13.

Match List I with List II and select the correct answer from the codes given below: [1]

List I  
(Vitamin)

List II  
(Diseases)

(A) Vitamin A

(i) Pyorrhea

(B) Vitamin B

(ii) Rickets

(C) Vitamin C

(iii) Beriberi

(D) Vitamin D

(iv) Night Blindness

codes: A B C D

- (a) (ii) (iv) (iii) (i)

- (b) (i) (ii) (iv) (iii)
- (c) (iv) (iii) (i) (ii)
- (d) (iii) (i) (ii) (iv)

Answer:

- (c) (iv), (iii), (i), (ii)

Question 14.

The capacity of muscles to absorb and consume oxygen is called: [1]

- (a) Oxygen Intake
- (b) Oxygen Uptake
- (c) Oxygen gain
- (d) Oxygen transfer

Answer:

- (b) Oxygen Uptake

Explanation: Oxygen is used by all muscles of the body. During exercise, the muscles require a huge amount of oxygen for aerobic respiration. This oxygen is provided by the blood to the muscles.

Question 15.

Acceleration of the object will increase as the net force increases, depending on its: [1]

- (a) Density
- (b) Mass
- (c) Shape
- (d) Volume

Answer:

- (b) Mass

Explanation: The acceleration of an object depends directly upon the net force acting upon the object, and inversely upon the mass of the object. As the force acting upon an object is increased, the acceleration of the object is increased. As the mass of an object is increased, the acceleration of the object is decreased.

Question 16.

Friction always acts the motion of an object. [1]

- (a) in the same direction as
- (b) perpendicular to
- (c) opposite to
- (d) at a 45-degree angle to

Answer:

- (c) opposite to

Question 17.

Endomorphic, Mesomorphic and Ectomorphic are types of [1]

- (a) bones
- (b) joints
- (c) personalities
- (d) muscles

Answer:

- (c) Personalities

Explanation: Sheldon claimed that a body type could be linked with the personality of that person. He gave theories of body type as Endomorph, Ectomorph, and Mesomorph.

Question 18.

Which of the following exercise is most appropriate for an 11-year-old child? [1]

- (a) Pulling
- (b) Cycling
- (c) Twisting
- (d) Jumping

Answer:

- (b) Cycling

Explanation: Cycling strengthens the heart which improves blood circulation. It burns calories, raises the metabolic rate, and builds muscle tone.

Section - B (10 marks)

Question 19.

List down the nutritive components of diet and explain any one. [2]

Answer:

Nutritive components of the diet are carbohydrates, Protein, and Fat.

Protein: These are the basic structure of all living beings and the building blocks of our body. Proteins are the main components of muscles, tendons, ligaments, organs, glands, and all living body fluids. These are complex organic compounds that are formed from a chain of amino acids that contain carbon, hydrogen, and nitrogen. It is of two types:

(1) Essential proteins: There are 9 amino acids that are taken from food and they are not made in the body. The source of essential proteins are pulses, milk, dairy products, soybeans, meat egg etc. They are required for growth of tissues.

(2) Non-Essential proteins: There are more than 13 essential proteins. Body requires them in very less quantity as they help in the synthesis of essential proteins. The sources of non-essential proteins are grains, dry fruits, and vegetables.

The function of Proteins:

It builds muscles, tissues and organs.

It is essential for the growth, maintenance and repair of all cells.

It produces antibodies and improves the immune system.

Transports the nutrients and oxygen in blood.

improves metabolism and digestion.

It is responsible for health of hair, nails, and freshness of skin, and strength of bones.

Question 20.

What do you understand by 'Non-Nutritive Components'? Elucidate any four non-nutritive component of diet. [2]

Answer:

Non-Nutritive Component: Non-Nutritive components are those components of food, which don't give energy or calories. They do not have nutritional value and are added to food and beverage products. They are designed to make the food smell better, taste better, last long and look better. Following are the non-nutritive components of diet:

(1) Flavour Compounds: The flavors are derived from both nutritive and non-nutritive components of food. Sometimes it becomes very difficult to know the source of a specific flavor. An acidic food provides sour taste while an alkaline one provides a bitter taste.

(2) Colour Compounds: The food or diet is prepared more appetizing and attractive to see by the wide reflection of colors made possible through pigments. Natural pigments are found in fruits and vegetables. The colors from animal products and grains are less bright. There are various colors of fruits and vegetables such as red, orange, yellow, blue, green and cream.

Question 21.

Explain the first aid procedure for minor wounds and cuts. [2]

Answer:

First-aid procedures for minor wounds and cuts are as follows:

Wash hands or wear sterile disposable gloves.

Clean the surface of the cut or the wound with water.

If there is a minor cut, then apply antiseptic cream or lotion to the affected part

If there is bleeding, then cover the wound with cotton or a bandage and press to stop bleeding or raise the affected area above the heart level.

If the cut is deep, then take it to the doctor immediately for stitches.

Question 22.

Explain the procedure and benefits of any one asana used to cure diabetes. [2]

Answer:

Asanas for diabetes are as follows. Bhujangasana, Paschimotāsana, Pawan Muktasana and Ardh Matsyendrasana. Paschimotāsana Procedure:

(1) Sit on the ground with your legs forward.

(2) Then hold both toes of your feet with your hands.

(3) Breathe out slowly.

(4) Touch the knees with the forehead.

(5) After the breath in, raise your head upward and come to the prior position.

Benefits:

(1) It removes the abdominal disease.

(2) It regulates blood circulation.

(3) It makes the waist thin.

(4) It removes skin diseases.

Question 23.

What do you understand by the term disability? Explain any four disability etiquettes. [2]

Answer:

Disability: A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions).

Following are the disability etiquettes:

(1) About Help: We should think to disable as our friends, co-worker, or as an individual. Do not assume that they need your help. It appears that they need help. Only then try to help them. Do not put them on their head. Do not touch their wheelchair etc. Because these people think their equipment is a part of their own space.

(2) Think Before You Speak: Whenever you are indulged in communication with a differently able person. Talk to them directly not to their companion. Talk to them as you talk to anyone else. Respect their privacy. Don't talk about their disability. It may make them feel that you are treating them as disabled.

(3) Response towards them: If any disabled person asks for your help. It does not mean that he is dependent on you. But it means that he is friendly to you. So try to help them with happiness and positivity.

(4) People who use wheelchairs: Persons who use wheelchairs have different disabilities. They may use their arms and hands. Sorry, can walk on little distance. So we must keep some points in our mind while dealing with this individual:

Don't push or touch a person's wheelchair. This can make them fall from their chair.

Be aware of a person's reach limits. Place as many items as possible within their reach.

People who use canes or crutches need their arms to balance themselves. So never grab them.

Question 24.

Define motor development and list the factors affecting it. [2]

Answer:

Motor development: It means the physical growth and strengthening of a child's bones, muscles, and ability to move and touch his/ her surroundings. A child's motor development falls into two categories: fine motor and gross motor. Typical motor skill development follows a predictable sequence. There are several factors that influence the development of gross and fine motor skills. These factors are:

- (1) Growth of the child
- (2) Environment
- (3) Genetics
- (4) Muscle tone
- (5) Gender

By understanding and analyzing these factors, you can help children enhance their skills and develop at an appropriate rate.

Section - C (15 marks)

Question 25.

Explain the purpose and procedure of any two batteries for the Motor fitness test. [3]

Answer:

Motor fitness is a person's ability to perform physical activities. Motor fitness refers to the potential of an athlete to perform effectively at his/her sport. There are the following motor fitness tests' 50 M Standing Start, 600M Run/Walk, Sit & Reach, Partial Curl Up, Push Ups (Boys), Modified Push Ups (Girls), Standing Broad Jump, 4 x 10 M Shuttle Run.

(1) 50 M Standing Start:

Purpose: To check the speed. Procedure: The subject takes the starting position behind the starting line. The starter commands, "Are you ready?" and "Go". The word "Go" is accompanied by a downward sweep of the starter's arm as a signal to a timer. Two subjects can run at the same time if there are two stopwatches. The score is recorded in seconds to the nearest 10th of a second.

(2) 600M Run/Walk:

Purpose: To check Endurance Procedure: This run can be organized on a track, on a football field, or on an open area marked for this purpose. In this test item, a subject runs a distance of 600 meters. The subject takes a standing start from the start line. At the signal "Ready and "Go", the subject starts running a 600-meter distance. The subject may walk in between. However, the objective is to cover the distance in the shortest time. When we cross the finish line, he is informed of his time. The time taken to run the distance is recorded in minutes and seconds.

Question 26.

How is cardiovascular fitness measured with the help of the Harvard Step test? Explain. [3]



Answer:

Harvard Step test: This test was developed by Brouha at Harvard University in 1943. It is a cardiovascular fitness test. In this test the individual is required to step on and off a 20-inch high platform, 30 times a minute until exhaustion or until five minutes elapse. Through this test, we get a score that indicates the fitness of the subject. Equipment: To conduct the test following things are needed:

- (1) Stair or stool 20 inches (boys) 16 inches (girls) height
- (2) A stopwatch
- (3) Helper

Procedure:

- (1) First of, all warm up for minutes.
- (2) Then step onto a standard, high box once every two seconds for 5 minutes i.e. 150 steps.
- (3) The assistant stops the test after 5 minutes.
- (4) The assistant measures the athlete's heart rate (beats per minute (bpm) one minute after finishing the test (Pulse-1).
- (5) The assistant measures the athlete's heart rate (bpm) two minutes after finishing the test (Pulse-2).
- (6) The assistant measures the athlete's heart rate (bpm) three minutes after finishing the test (Pulse-3).

Assessment: Using the three pulse rates (bpm), an estimate of cardiovascular fitness can be determined as follows:

Fitness Index (short form) =  $(100 \times \text{test duration in seconds})$  divided by  $(5.5 \times \text{pulse count between 1 and 1.5 minutes})$ .

Redness Index (long form) =  $(100 \times \text{test duration in seconds})$  divided by  $(2 \times \text{sum of heartbeats in the recovery periods})$ .

Question 27.

Define speed and explain any one method to develop it. [3]

Answer:

Speed can be developed indirectly by developing its dependent factors like flexibility, technique, explosive strength, and coordinative abilities. The training methods for speed development are:

- (1) Acceleration runs
- (2) Pace run

(1) Acceleration Run Method: This is the training method for developing the acceleration zone or speed-up zone in races. Acceleration is the capacity to attain maximum speed in a minimum time. In this training method, the athlete runs 20 to 30-meter distance with maximum speed to attain the top speed as fast as possible. The rest period is 2-5 minutes to provide sufficient recovery.

This training is repeated 5 to 10 times with sufficient rest period, ancient rest period, ancient rest period, ancient rest period, ancient rest period. Acceleration runs should be started only after proper warming up. It is practiced 3-4 times a week. In this method, speed or intensity is kept at 90 to 100% of the total individual's capacity. It is usually practiced when the competition is close.

Schedule:

(1) Speed or Intensity: 90 to 100 percent of best possible ability. (2) Distance or Duration of Work: 20 to 30 meters (4 to 6 seconds) (3) Number of repetitions: 5 to 10 times. (4) Recovery Period: 2 to 5 minutes (sufficient recovery), ancient recovery), ancient recovery), ancient recovery), ancient recovery). (5) Care: Perform proper warming-up, crouch position during start, first few steps of short distance, body bent forward.

(2) Pace Run Method: Pace is setting a stable speed which is a very important part of the race. Pace running is running the complete distance at a constant or steady pace by distributing energy evenly in a race. Pace running is used in races of 800 meters and above. If the pace is disturbed constantly then race is affected to great extent. For this method, machines like treadmills can be used to provide stable pacing.

This method is practiced, when the competitions are close. In this method, the speed is kept around 60 to 90 percent of the best ability. The distance can vary from 200 to 800 meters. This method develops anaerobic endurance for a longer period, thus constant pace can be achieved. It is practiced 3 to 4 times a week.





Advantages:

- (1) It improves the reaction time of the athlete, thus, the athlete takes a quick start as the race begins.
- (2) It develops the capacity of the athlete to adjust his top speed.
- (3) This method develops anaerobic endurance for a longer period, thus, a constant pace can be achieved.
- (4) Speed development training method develops the acceleration ability thus it helps an athlete to reach maximum speed in the starting.

Question 28.

Discuss in detail any two movements of the body. [3]

Answer:

Flexion	Extension	Abduction	Adduction
This movement takes place in sagittal plane and around frontal axis.	This movement also takes place in sagittal plane and around frontal axis.	This movement takes place in frontal plane and around sagittal axis.	This movement also takes place in frontal plane and around sagittal axis.
Angle at a joint joining two body part decreases.	Angle at a joint joining two body part increases.	Some part of body moves away from the imaginary central line.	Some part of body Moves near to the imaginary central line.
Example: Upward movement of wrist, decreasing angle at wrist joint.	Example: Downward movement of wrist, increasing angle at wrist joint.	Example: Bending of trunk to the right or left side or moving leg or arm away from the imaginary central line.	Example: Straightening of already bent trunk or moving leg or arm near to the imaginary central line.
			
	MeritBatch.com	Abduction	Adduction

Question 29.

Differentiate between Isometric and Isotonic exercises. [3]

Answer:

The difference between Isometric and Isotonic Exercises are:

Isometric Exercises

(1) Movement of exercising body parts or objects is not visible to the third person.

(2) Length of muscles doesn't change.

(3) Less muscular endurance is developed.

Isotonic Exercises

(1) Movement of exercising body parts or objects is visible to the third person.

(2) Length of muscles change

(3) More muscular endurance is developed

(4) These exercises can be performed at any place.

(4) These exercises require a specific place.

(5) Develop strength at one place

(5) Develop uniform strength.

(6) Recovery from muscular fatigue is slow

(6) Recovery from muscular fatigue is faster

(7) E.g. Exercise by pushing the wall.

(7) E.g. Exercise with light weights

Question 30.

Differentiate between intramural and extramural competitions in detail. [3]

Answer:

Differences between intramural and extramural competitions are:

Intramural Competition

Extramural Competition

(1) Intramural competitions are organized within the schools or institutions

Extramural are organized by either school, institutions or associations.

(2) It is played among a group of students belonging to the same school or institution.

The participants are from more than one school or institute.

(3) In it a large number of students are known to each other.

In it, most students are not known to each other.

(4) Intramural are campus competitions, and played within the boundaries of an institution.

Extramural are out of boundry competitions and may be played at any place where infrastructure is available.

Section - D (12 marks)

Question 31.

Five years old Rohit is having difficulty reading the alphabet. He gets confused between lowercase of to b and d. [4]



- (A) Which disability is Rohit suffering from?
- (B) What is this disability known as and why?
- (C) What can be the possible reasons for this disability?
- (D) What is intellectual functioning?

OR

The above disability is related to \_\_\_\_\_ in intellectual functioning and \_\_\_\_\_ behaviour.

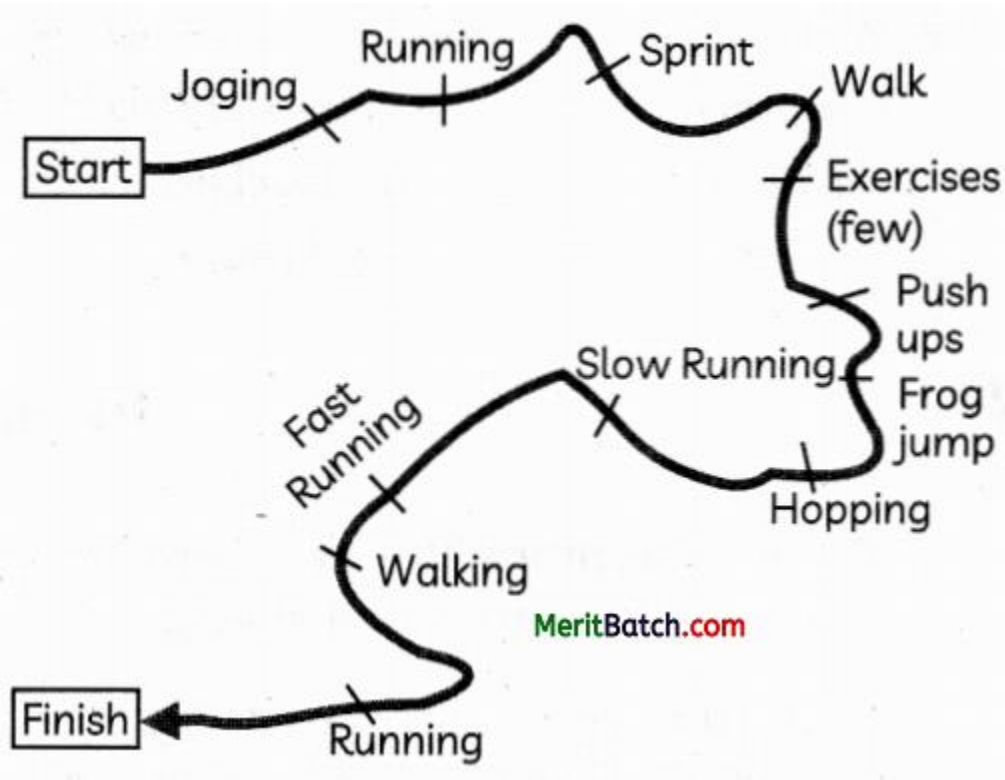
Answer:

- (A) Rohit is suffering from a cognitive disability. It is a disability that impacts an individual's ability to access, process, or remember information.
- (B) Cognitive disability is also known as an invisible disability because while with other disabilities, a person may not be able to assess the condition by just looking at the individual
- (C) This disability could be due to developmental disabilities, brain injury, Alzheimer's disease, or even mental illness.
- (D) Intellectual functioning means a person's ability to play, comprehend, and reason.

OR

Impairments, adaptive.

Question 32.



- (A) Identify the training method in the picture above and who introduced it.  
 (B) What does this training method help in?  
 (C) From where does this training method derive its name?  
 (D) What is the duration of this training method?

OR

Write one disadvantage of the above-shown training method. [4]

Answer:

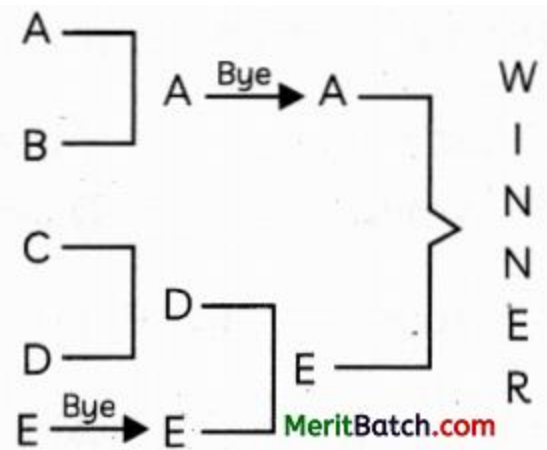
- (A) Fartlek training method: It was introduced by Astrand and Gosta Holmer.  
 (B) Fartlek training method improves cardiovascular endurance and is good for Astrand and Gosta Holmer's aerobic and anaerobic fitness.  
 (C) 'Fartlek' is a Swedish term that means, 'speed play' and has been used by distance runners for years.  
 (D) This duration of this training method lasts for 45 minutes or more. It can vary from aerobic walking to anaerobic sprinting.

OR

It may cause accidents.

Question 33.

Competing in physical activities is a natural tendency of humans. The tournaments or competitions are held in accordance with set rules and regulations. The success of the tournament depends on suitable fixtures. See the fixture below and answer the following questions. [4]



- (A) Which method has been used in drawing the fixture? Explain.  
 (B) What is the other name of this tournament?  
 (C) Write any two advantages of this tournament?  
 (D) Write any two disadvantages of this tournament?

Answer:

- (A) Knock and tournament is a type of elimination tournament where the loser of every bracket is eliminated immediately from the tournament.  
 (B) Olympic system Tournament.  
 (C) It takes less time to complete the tournament because of less number of matches and minimum number of officials needed to organize these tournaments.  
 (D) Disadvantages: Good teams may get eliminated in the initial rounds and there are chances of weak teams to enter the final round.

Section - E (15 marks)

Question 34.

Discuss in detail the different types of coordinative ability. [5]

Answer:

**Coordinative ability:** It is the combination of body movements of several limbs or body parts combined in a manner that is well timed, smooth, and efficient with respect to the intended. These are also defined as those abilities which enable an individual to do related activities accurately and efficiently. Types of coordinative ability:

- (1) **Orientation ability:** It is an ability to realize the position of the body or its parts in space and time. In other words, it is the sportsperson's ability to analyze and change the position of the body and its parts in time and space in relation to gravity, moving objects like a ball, an opponent, a playing field, etc.
- (2) **Coupling ability:** Coupling ability can be referred to as the ability to combine the movements of different body parts for performing perfect sports movements. Every sport requires this kind of ability, but this ability has more sig team sports, gymnastics, and combative sports. For example, in gymnastics, the movements of the hands, head, trunk, and legs are essential to be successfully combined to achieve a certain goal.
- (3) **Reaction ability:** The ability to react instantly or quickly and effectively to a signal is called reaction ability. There are two types of reaction ability:

**Simple Reaction Ability:** The ability to react quickly in a determined manner to a well-known signal is called as simple reaction ability. For example, the reaction of a swimmer at the start of the competition is already known to him.

**Complex Reaction Ability:** The ability to react quickly to an unknown or unexpected signal is called a Complex reaction ability. These signals are unexpected because the sportsperson does not know when and to which signal he has to react For example, in football the reaction of a goalkeeper while facing ball from an opponent

(4) **Balance ability:** Balance ability is understood as an ability to keep the body or its parts in a relatively stable position in both static and dynamic conditions and regain balance quickly after the balance disturbing movements. This type of ability is required in almost every game and sport but it has special importance when movements are done in a small area.

(5) **Rhythm ability:** The ability to understand the rhythm of movement and to do the movement with the required rhythm is known as rhythm ability. In some sports like gymnastics, the athlete has to perceive an external rhythm given in the form of music and to express it in his movements. In some sports where rhythm is not given from outside, the sportsman has to make use of rhythm stored in his motor memory.

Question 35.

What are Knockout tournaments? Draw a knockout fixture for 19 teams, mentioning all the steps involved. [5]

Answer:

**Knockout Tournament** It is a type of elimination tournament where the loser of each match is immediately eliminated from winning the championship or first prize in the event Example: Team X and Y are to play a match against each other. Since its a knock-out tournament the team which beats the other goes further and the losing team is out of the tournament

Knockout fixture for 19 teams:

No of matches:  $N-1 = 19-1 = 18$  matches

No of rounds:  $2 \times 2 \times 2 \times 2 = (2)^5 = 5$  rounds

A number of teams in each quarter:

$= N/4 = 18/4$

On dividing 19 by 4, since quotient = 4 and remainder = 3

Number of teams in 1st quarter =  $4 + 1 = 5$

Number of teams in 2nd quarter =  $4 + 1 = 5$

Number of teams in 3rd quarter =  $4 + 1 = 5$

Number of teams in 4th quarter = 4

Total Byes: Highest power of two - No of teams

$= 32-19 = 13$  byes

Byes in Upper half  $Nb-12=13-12 = 6$  byes

Byes in Lower half  $Nb+12=13+12 = 7$  byes

Question 36.

Write short notes on OCD and ODD. [5]

Answer:

**Obsessive Compulsive Disorder:** Some people have an extreme fear of bacteria or dirt, so they develop a habit of compulsively washing their hands and body. Excessive washing results in skin irritation, but they are incapable of changing their behavior. Causes:

(1) **Biological Factors:** OCD symptoms can get passed on from generation to generation. It can be understood as a biological factor causing QjCD.

(2) **Environmental Cause:** environmental factors also are responsible for enhancing OCD. Illness, death of any relative, relationship, abuse are environmental causes of OCD, etc.

Symptoms: OCD symptoms include obsession compulsion or both.

Common obsession:

Fear of. being contaminated by germs or dirt or contaminating others

Fear of losing control and harming yourself or others

Intrusive sexually explicit or violent thoughts and images

Excessive focus on religious or moral ideas

Fear of losing or not having things you might need

Order and symmetry: the idea that everything must line up “just right

Superstitions: excessive attention to something considered lucky or unlucky

Common compulsion:

Excessive double-checking of things, such as locks, appliances, and switches

Repeatedly checking in on loved ones to make sure they’re safe

Counting, tapping, repeating certain words, or doing other senseless things to reduce anxiety

Spending a lot of time washing or cleaning

Ordering or arranging things “just so”

Praying excessively or engaging in rituals triggered by religious fear

Accumulating “junk” such as old newspapers or empty food containers.

Oppositional Defiant Disorder: It is a childhood disorder that is defined by a pattern of hostile, disobedient, and defiant behaviors directed at adults or other authority figures. ODD is also characterized by children displaying anger and irritable moods.

Causes: It is considered that a number of factors collectively play a significant role in the onset of ODD. For example, genetic, Physical, environmental, etc.

Symptoms:

- (1) Frequent temper tantrums
- (2) Excessive arguing with adults
- (3) Often questioning rules
- (4) Active defiance and refusal to comply with adult requests and rules
- (5) Deliberate attempts to annoy or upset people
- (6) Blaming others for or their mistakes or misbehavior
- (7) Often being touchy or easily annoyed by others
- (8) Frequent anger and resentment
- (9) Mean and hateful talking when upset
- (10) Spiteful attitude and revenge-seeking.

Question 37.

What are the effects of exercising on the cardio-respiratory system? Explain. [5]

Answer:

After performing exercise for the long term, certain adaptations take place in our cardiovascular system. These are called the long-term effects of exercise. The various long-term effects of exercise are stated below;



(1) Increase in the size of the heart; When you perform the regular exercise the muscles of the heart increase in size and strength. In fact, the left ventricle adapts to the greatest extent. The walls of the heart grow stronger and thicker.

(2) Decrease in resting heart rate: Regular exercise decreases the resting heart rate. Eventually, the heart becomes more efficient and no longer needs to beat as Physical Education Class XII quickly supplies the body with blood while at rest

(3) Increase of stroke volume in rest The resting heart rate is able to slow down because the heart is now trained to pump a larger quantity of blood every beat.

(4) Decrease of blood pressure: Regular exercise decreases blood pressure. Thus, it decreases the chances of hypertension and other diseases due to an increase in blood pressure.

(5) Increase in blood volume: During heavy exercises, the body produces a greater number of red blood cells to keep the muscles supplied with oxygen. In fact, there is an increase in plasma volume which enhances the blood volume.

(6) Quicker recovery rate: Regular exercise quickens the recovery rate. A trained athlete's heart rate becomes normal earlier in comparison to a beginner's. So, the recovery becomes fast

(7) Reduced risk of heart diseases: Regular exercise gradually reduces stress-related hormones from circulating in the blood. This increases the blood vessel path, which in turn lowers the risk for the buildup of plaque that can lead to coronary heart diseases. Hence, exercises reduce the risk of heart disease.

