

Premier

Chapterwise Mind Maps

&

6 Model Test Papers

(Solved)

for Revision and Practice

PHYSICAL EDUCATION

(Class XII)

**For Upcoming Board Examination
to be held on**

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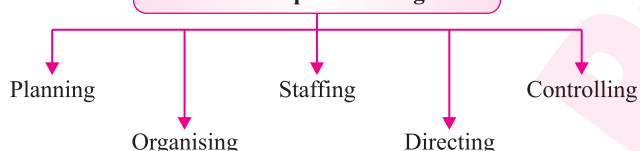
Management of Sporting Events

Mind Map

Some Important Definitions

- **Management** is an art of planning, organising, staffing, directing and controlling all available resources to achieve any pre-determined goal efficiently and effectively.
- **Planning** refers to a pre-decided process which is adopted and implemented to achieve any specific pre-determined goal or objective.
- **Organising** refers to the process through which various works/responsibilities related to the event are specified, categorised and then assigned to various people and committees.
- **Staffing** refers to the process of filling a designation/post with most suitable candidate.
- **Directing** refers to instructing, guiding, communicating and inspiring human workforce to achieve a particular objective.
- **Controlling** refers to ensuring that all activities are performed as per the plan.
- **Bye** is a privilege that is given to a player/team to directly advance to the second round of the tournament without playing the first round.
- **Seeding** is the process of placing strong teams at such a place in the fixture so that they don't face each other in the initial rounds of the tournament.
- A **league or round robin tournament** is a tournament in which every team has to play with other participating teams atleast for once.
- **Cyclic method** refers to that method of drawing fixture in which one team is placed at a fixed position whereas other teams are placed in rotation around it to complete a cycle.
- In sports, **Intramural** activities are those activities which are organised within the premises of an institution and only students of that particular institution/school can participate in them.
- **Extramural** activities are those activities which are organised and performed outside the boundary of an institution and other institutions/schools can also take part in such activities.
- **Community sports** refers to those sporting, events which are played/performed by members of a particular community.

Functions of Sports Management



Following committees are generally formed under an organising committee to conduct a sporting event–

1. Technical Committee
2. Finance Committee
3. Marketing Committee
4. Logistics Committee

Importance of Sports Tournaments

1. Publicity of sport
2. Helps in developing sports skills
3. Helps in selection of players for higher level tournaments
4. Helps in developing friendship and brotherhood
5. Helps in developing social qualities
6. Source of recreation
7. Helps in cultural exchange

Placement of byes in a knock-out fixture

- **First bye** will be given to the **last team** of the **lower half**.
- **Second bye** will be given to the **first team** of the **upper half**.
- **Third bye** will be given to the **last team** of the **upper half**.
- **Fourth bye** will be given to the **first team** of the **lower half**.
- The next bye or byes will be given in the same order as described above.

Various Types of Tournaments

1. **Knock-out Tournament** : In a knock-out tournament teams play against each other and the winner moves to next round whereas loser is eliminated from the tournament.

Advantages of a Knock-out Tournament

- Less expensive
- Team/player tries to give their best performance
- Less number of matches and tournaments finishes in less time
- Minimum numbers of officials are required

Disadvantages of a Knock-out Tournament

- Possibility of a match between two good teams in the early stages of the tournament.
- Good team can be eliminated even at the early stage.

2. **League or Round Robin Tournament** : A player or team plays fixed number of matches that are allotted to them before the start of the tournament.

Advantages of a League Tournament

- No fear of getting eliminated in the initial round.
- Deserving team emerges as a winner at the end of the tournament.
- Helps to select a good player or team

Disadvantages of a League Tournament

- Involves more money
- More time consuming
- Requires more arrangements and man power

3. **Combination Tournament** : Combination tournament is a combination of both knock-out and league format.

Objectives of Intramural Tournaments

1. To provide opportunity to every student to participate in games and sports
2. To develop leadership qualities among students
3. To develop feeling of cooperation
4. To provide recreation
5. To develop feeling of sportsmanship
6. To provide an opportunity to learn a variety of games and skills
7. To provide an opportunity to get an experience of organising competitions
8. To find out talented players
9. Helps to develop personality

Significance of Intramural Tournaments

1. Selection for extramural
2. Group cohesion
3. Professional experience
4. Health benefits
5. Recreation
6. Mass participation

Objectives of Extramural Tournaments

1. To improve the standard of sports
2. To provide experience
3. To develop feeling of brotherhood and friendship
4. To broaden the base of sports
5. To provide knowledge of latest rules and techniques

Purpose of Organising Community Sports

- For community awareness programmes
- For social campaigns
- For talent search
- As an recreational opportunities
- To raise funds
- For promotion and maintenance of health among people

Benefits of Community Sports

- 1. Health Benefits :**
 - Positive impact on physical and mental health of an individual.
 - Improve cardiovascular and muscular health.
- 2. Social Benefits :**
 - Provide a platform to make friends, connecting people.
 - Help to develop a network for sharing knowledge and experiences.
- 3. Psychological Benefits :**
 - Improved psycho-social health.
 - Help in improving self-esteem and stress management.
- 4. Economic Benefits :**
 - Reduce the burden on health budget.
 - Promote optimum usage of resources.

Significance of Extramural Tournaments

1. Provide opportunities to schools to exhibit their sporting talent
2. Enhance sports performance
3. Provide knowledge of latest techniques
4. Helps to plan and implement programmes of physical education in more effective manner
5. Helps in socialisation
6. Improves level of fitness

Some Major Community Sports



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Children and Women in Sports

Mind Map

Some Important Definitions

- **Sports** is an creative expression of physical and mental activities.
- **Posture** refers to the way in which a person sits, stands, walks, etc.
- Malformation of any part of the body which results in postural difficulties while standing, walking, sleeping, etc., are termed as **postural deformity**.
- **Menarche** (first menstruation) is considered to be the point of sexual maturity for girls.
- **Eating disorder** is a mental disorder characterized by abnormal eating behaviors that adversely affect a person's physical and mental health.

Some Common Postural Deformities

- 1. Knock-Knees (Genu Valgum) :** Knee misalignment that turns the knees inward.
Causes : Injury or infection in the knee or leg, Rickets, Severe lack of Vitamin-D and calcium, Obesity, Arthritis.
Corrective Measures : Horse-riding, Pillow between the knees, Standing erect for some time, Performing padmasana and gomukhasana, Use of walking callipers, Lose weight.
- 2. Flat Foot (Pes Planus) :** Either no arch in feet, or one that is very low.
Reasons : Foot or ankle injury, Obesity, Improper shoes, Carrying heavy weight, Arthritis.
Corrective Measures : Walking, jumping and standing on heels, Walking on sloping, Picking up objects with toes, Hopping with knees bent, Yoga asanas like Adhomukhsavasana, Writing numbers in the sand with the toes.
- 3. Round Shoulders :** Shoulders are bent forward from the ideal alignment, thereby giving a narrow curve to upper back.
Reasons : Heredity, By wearing very tight clothes, Sitting on improper furniture, Lack of exercise, Poor posture habits, Muscles imbalance, Injury.
Corrective Measures : T-stretch, wall stretch, Handclasp stretch and planks, Yoga asanas like Chakrasana, Dhanurasana.
- 4. Lordosis :** Spine curves a little in the neck, upper back & lower back.
Causes : Overweight or obesity, Improper development of muscles, Diseases of spinal muscles or accident, Poor posture, Imbalanced diet.
Corrective Measures : Use of braces, or even surgery, Weight loss, Physical therapy, Sit-ups, sitting against the wall, Yoga asanas including Dhanurasana and Halasana, Toe-touching exercise.
- 5. Kyphosis :** Curvature of the upper back gets exaggerated or increases.
Causes : Heredity, Ageing, Disease, Malnutrition, Poor postural, Weakness in muscles etc.
Corrective Measures : Exercises to strengthen back muscles, Swimming, gym ball exercises, Dhanurasana, Chakrasana and Bhujangasana, Use a flat bed with a thin pillow, Bend head backward in standing position.
- 6. Scoliosis :** Spine is tilted to either side of the body.
Causes : Birth defects, Unsuitable furniture, Cerebral palsy and muscular dystrophy, Arthritis, paralysis, or rickets, Wrong posture.
Corrective Measures : Brace to stop the curve from worsening, Exercises like hanging on the horizontal bars, Breaststroke in swimming, Trikonasana and Adhomukhasana.
- 7. Bow Legs :** Legs look like a bow.
Causes : Rickets, Obesity, Vitamin-D, Deficiency of Calcium Phosphorus.
Corrective Measures : Walk on the inner edge of the feet, Bending the toes inward, Ardha-matsyendrasana & garudasana Use of braces.

Exercise Guidelines of WHO for Different Age Groups

- 1. Infants (Less than 1 year) :**
 - Encourage to be active by providing enough space and open environment to promote movement and explore surroundings.
 - Should remain atleast 30 minutes in prone position.
 - Playing equipment must not be too small.
 - During sedentary timing, the child must be engaged in reading and storytelling.
 - Should have good quality sleep.
- 2. Toddlers (1-2 years of age) :**
 - Toddlers should be encouraged to undertake fundamental physical activity like– walking, running, jumping, catching, throwing, leaping etc.
 - Screen time is not recommended for toddlers.
 - Should have 11-14 hours of good quality sleep.
- 3. Children (3-4 years) :**
 - Should spend at least 180 minutes in a variety of types of physical activities.
 - Should take up physical activities such as– climbing frame, riding a bike, playing in water.
 - During sedentary time reading and storytelling should be encouraged.
 - Should sleep between 10-13 hours.
- 4. Children and Youth (5-17 Years) :** Start with simple exercises to complex, gradually increase the frequency, duration and intensity of the activities.
- 5. Adults (18-64 Years) :** Start with simple exercises and move to complex, gradually increase frequency, duration and intensity of the activities as per the ability and as conditions allow.
- 6. Older Adults 65 Years and Above :** Start with simple exercises and move to complex, gradually increase frequency, duration and intensity of the activities as per the ability and as conditions allows.

Posture refers to shape or stability assumed by the body

Two categories of posture

- 1. Dynamic Posture, i.e.,** how one holds oneself while moving.
- 2. Static Posture, i.e.,** how one holds oneself when stationary or not moving.

Benefits of Women Participating in Sports

1. Physical Benefits :

- Prevents lifestyle diseases
- Toned muscles
- Controls obesity
- Increases bone density
- Improves cardiovascular system

2. Psychological Benefits :

- Stress management
- Control emotions
- Self-esteem
- Boosts confidence & enhance self-esteem
- Confidence
- Leadership

3. Social Benefits :

- More open towards society
- Communication
- Cooperation
- Coordination
- Inter-relationships

Suggestions to Improve Women's Participation in Sports

- Awareness programmes
- Families should also be encouraged
- Media coverage and sponsorship
- Sports equipment focusing on physiological aspects of women
- Appointment of women coaches
- Incentives

Menstrual Dysfunctions

Irregular condition in women's menstrual cycle.

Different Types of Menstrual Disorders

1. **Pre-menstrual syndrome** : Depression, anxiety, irritation, headache, fainting, vertigo, infection etc. are some of the symptoms of pre-menstrual syndrome. These symptoms last from a few hours to few days. Such symptoms may be reduced through moderate exercise, taking a balanced diet, having a good sleep and rest.
2. **Amenorrhoea** : Missed periods or absence of a normal monthly period.
3. **Dysmenorrhoea** : Menstruation with severe pain or menstrual cramps.
4. **Menorrhagia** : Heavy menstrual bleeding.
5. **Polymenorrhoea** : Menstrual cycle that is shorter than 21 days.
6. **Oligomenorrhoea** : Infrequent menstruation.
7. **Metrorrhagia** : Abnormal bleeding patterns.
8. **Postmenopausal bleeding** : Bleeding that occurs after one year of menopause

Female Athlete Triad

1. Low Bone Mineral Density– BMD (Osteoporosis) :

Increased bone fragility due to low bone mineral density (BMD). Low BMD is generally caused due to improper diet and amenorrhoea. Due to low level of oestrogen and progesterone in female athletes, their bones become weaker and lose minerals.

Effects : Frequent injury, Early menopause, Stress fractures.

Causes : Insufficiency of calcium in diet, Amenorrhoea, Eating disorders, Bad eating habits.

2. Amenorrhoea : Absence of menstrual period for 3 months or more.

Causes : Genetic disorders, Disorders of the pituitary gland, Ovarian disorders, Psychiatric disorders, Abuse of alcohol or other drugs.

3. Eating Disorders : Abnormal eating behaviors.

Types of Eating Disorders

1. Anorexia Nervosa : A person tries to reduce body weight abnormally.

Causes : Desire to look physically fit or reduce their body weight quickly, anxiety, depression, and low self-esteem.

Prevention and Management : Consult a medical specialist, Remain agile and attractive, Maintain healthy weight, Psychological support.

2. Bulimia : Person suffering from it consumes a large quantity of food within a short period and then adopts unhealthy ways to cut down calories.

Causes : Desire to look physically fit.

Prevention and Management : Healthy eating habits and exercise, Positive attitude, Psychological treatment, Behaviour therapies and nutritional therapy, Maintain healthy body weight.



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Mind Map

Importance/Benefits of Yog Asanas

- Improves health
- Emotional development
- Keeps the correct posture of body
- Spiritual development
- Cures diseases and deformities
- Moral development
- Provide relaxation
- Reduce mental tension
- Social development
- Increase flexibility

Obesity

- 1. Tadasana :** Final position of this asana resembles like a palm tree.
Benefits : Strengthens the legs, knees, ankles, arms, and chest, improve digestion, reduce anxiety, stress, back pain and sciatica.
- 2. Katichakrasana :** Rotation of the waist.
Benefits : Relief in constipation, improves the flexibility of the spine and waist, opens up the neck and shoulders, beneficial deskbound jobs.
- 3. Pavanmuktasana :** Helps to release abdominal gas and ease digestive disorders,
Benefits : Stretches the neck and back, digestive system is improved, relieves constipation, beneficial for menstrual in disorders, reduces fats in the abdominal area, thighs and buttocks.
- 4. Matsyasana :** Fish pose.
Benefits : Opens and stretches the neck muscles and shoulders, corrects round shoulders too, relief from respiratory disorders.
- 5. Halasana :** Plow pose.
Benefits : Helps to cure constipation.

6. Paschimottasana :

Benefits : Stretches the muscles of the back from head to the ankles, improves-respiration, flexibility, improves blood circulation, alignment of the vertebral column.

7. Ardha-Matsyendrasana : Half Lord of the Fish.

Benefits : Useful in constipation and dyspepsia, improves liver efficiency, useful in diabetes, beneficial for the muscles of shoulder and back.

8. Dhanurasana : The final position of this asana is like a bow.

Benefits : Makes the spine and back muscles flexible, cures constipation, cure gastrointestinal disorders, improves digestion.

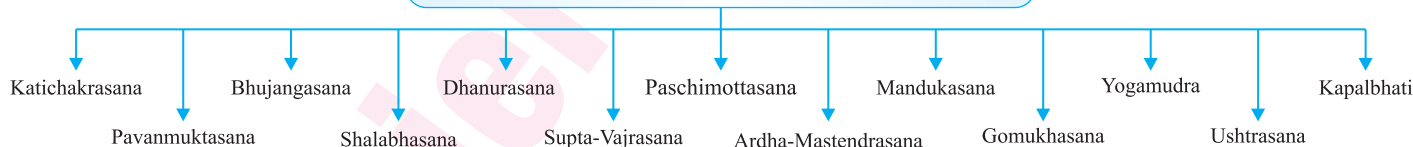
9. Ushtrasana : Camel pose.

Benefits : Promotes stretching of anterior muscles and contraction of the posterior muscles, develops strength and confidence, beneficial for digestive and reproductive organs, helpful for asthmatic people.

10. Suryabedhan Pranayama : Right nostril breathing.

Benefits : Purifies the brain, worms that in frontal sinuses are removed, beneficial in case of low blood pressure.

Asanas for Prevention and Management of Diabetes



Diabetes

- 1. Bhujangasana :** Final position of this asana resembles the 'Hooded Snake' therefore it is also known as 'cobra pose'.
Benefits : Increases the flexibility of the spine and vertebral column, strengthens the entire spinal extensor group, stimulates digestive organs, good for kyphosis.
- 2. Shalabhasana :** Grasshopper or locust pose.
Benefits : Helps reduce the abdominal fat, rectify neck pain, urinary disorders, strengthens reproductive system.
- 3. Supta-Vajrasana :** Supine thunderbolt pose.
Benefits : Improving digestive ailments, tones spinal nerves, makes the back flexible, beneficial in asthma, bronchitis, increases circulation in the brain, improve reproductive disorders.
- 4. Mandukasana :** Frog pose.
Benefits : Relief from diabetes, digestive disorders and constipation, improves the flexibility of the knee and ankle joints,

Increases lung capacity, beneficial for problems of the pancreas and the heart, reduce fat from thighs, belly and hips.

5. Gomukhasana : Cow Face Pose.

Benefits : Helps in gaining flexibility of the hip joint, tones the muscles of the chest, increases blood supply, improves the functioning of the abdominal organs

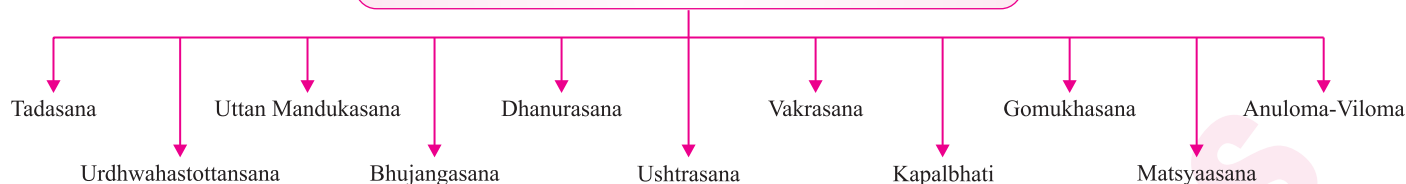
6. Yogamudra : Not asana rather it is a mudra.

Benefits : Helps to stretch the posterior muscles, improves muscle toning.

7. Kapalbhati : Yogic breathing practice

Benefits : Cleans respiratory passages, including the sinuses, improves respiratory function, removes acidity and gas related problems, cure sinusitis, asthma, and hair loss.

Asanas for Prevention and Management of Asthma

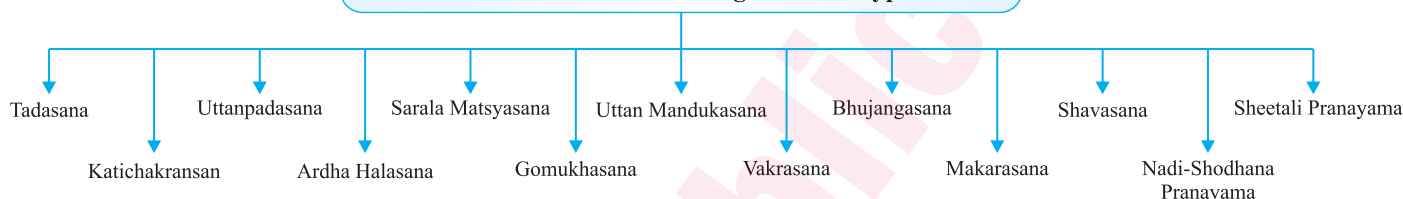


Asthma

- 1. Urdhwahastottansana :** Upward salute or upward hands pose and a key posture in Surya Namaskara
Benefits : Helpful in overcoming back pain, Improve the curvature of the spine, Removes fat from hips, Helps in the betterment of lung health, Burn the fats from abdominal sides, Reduce sciatica pain.
- 2. Uttan Mandukasana :** Final posture resembles an upright frog.
Benefits : Improves diaphragmatic movements, Overcome back pain, Increases elasticity of thigh joint and shoulders.

- 3. Vakrasana :** Twisted Pose because the spine gets twisted.
Benefits : Helps to straighten the upper back, Strengthens the neck muscles, Tones the internal organs, Activates thyroid gland.
- 4. Anuloma-Viloma :** Controlled breathing in yoga.
Benefits : Improves focus and concentration, Strengthens the immune system, Removes waste products and toxic gases.

Asanas for Prevention and Management of Hypertension

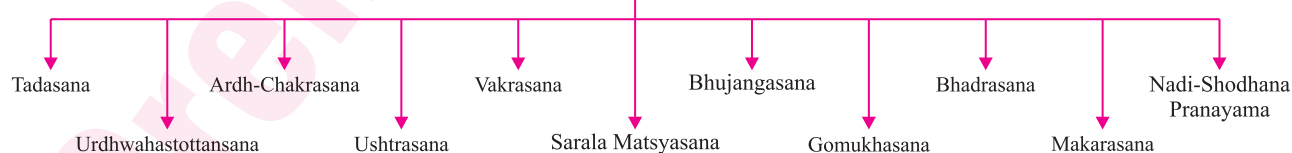


Hypertension

- 1. Uttanpadasana :** Also known as The Raised Leg Pose as the legs are raised upwards in supine position.
Benefits : Control diabetes, constipation, indigestion, maintains balance of the naval centre, helps to build abdominal muscles, Improve breathing and lung capacity.
- 2. Ardha Halasana :** Final position, resembles half the shape of an Indian plough and preparatory asana for halasana.
Benefits : Improves digestion, improves blood circulation, strengthens the thigh, reduce abdomen fat.
- 3. Saral Matsyasana :** A reclining back-bending asana body takes the shape like that of a fish.
Benefits : Improves digestive system, cure irritable bowel syndrome, get rid of abdominal-related issues.

- 4. Makarasana :** Crocodile pose.
Benefits : Managing asthma, correct the process of respiration, abdominal massage.
- 5. Shavasana :** Corpse pose.
Benefits : Overcome fatigue, control high blood pressure, and cardiac diseases.
- 6. Nadi Shodhana Pranayama :** Also known as anulom-vilom or alternate nostril breathing.
Benefits : Calms the mind, improves focus and concentration; strengthens the immune system; removes waste from the body.
- 7. Sheetal Pranayam :** Breathing exercise.
Benefits : Cures indigestion; controls thirst and hunger; lowers down the blood pressure; purifies blood.

Asanas for Prevention and Management of Back Pain and Arthritis



Back Pain and Arthritis

- 1. Ardh-Chakrasana :** Half-wheel postures and simpler version of chakrasana (wheel pose).
Benefits : Strengthens the back and abdominal muscles, relief from back problems, opens chest arms and shoulder muscles.
- 2. Bhadrasana :** Gracious Yoga.
Benefits : Loosen the joints, pelvis, knees and ankles become more supple, relieves tension from the spinal region, provides relief of sciatic, varicose vein, prevents arthritis, improves posture.

Physical Education and Sports for CWSN

Mind Map

Some Important Definitions

- **Disability** refers to limitations in individual functioning, including physical impairment, intellectual impairment, cognitive impairment, sensory impairment, mental illness and various types of chronic diseases.
- **Paralympics** refers to a series of international contests for athletes with disabilities that are associated with and held following the summer and winter Olympic Games.
- **Classification and divisioning in sports** refers to the process used in disability sports for providing even and fair competition for athletes with disability through grouping of athletes.

Organisations Promoting Disability Sports

- 1. Special Olympics :** Concept of Eunice Kennedy Shriver; The first Special Olympics were held in July 1968 in Chicago; United Nations declared 1986 as the year of Special Olympics. In 1988, the Special Olympics were officially organised by International Olympic Committee.
 - **Goal/Mission :** To provide year-round sports training competition for children and adults with intellectual disabilities, opportunities to develop physical fitness.
 - **Logo/Symbol :** Based on the sculpture “Joy and Happiness to All the Children of the World”.
 - **Oath :** “Let me win. But if I cannot win, let me be brave in the attempt.”
 - **Benefits :** Physical and health benefits; Higher self-confidence, self-esteem and social competence.
 - **Some Major Programmes :** Young Athlete Programme; Unified Sports Programme; Healthy Athletes Programme.
- 2. Paralympic Games,** first took place in Rome, Italy in 1960, governed by the International Paralympics Committee (IPC) which was established on 22 September 1989.
 - **Moto :** “Spirit in Motion”.
 - **Symbol :** Three colors: red, blue, and green in the shape of an Agito.
 - **Vision :** To enable Paralympics athletes to achieve sporting excellence and to inspire and excite the world.
 - **Paralympics Anthem :** “Hymn de l’Avenir” or “Anthem of the Future”.
 - **Aim of Paralympics Committee :** To develop sports opportunities for all the people with an impairment.
- 3. Deaflympics :** Deaflympics are held every four years starting from 1924, Paris, Deaflympics are equivalent to the Olympics games for deaf athletes.
 - **Logo :** The logo of Deaflympics represents sign language and the hand shapes, “ok”, “good”, and “great” that overlap each other in a circle, represent the original sign for “deaflympics”.
 - **Motto :** Per Ludos Aequalitas *i.e.*, Equality through sport.
 - **Aim :** Providing opportunities to deaf persons to participate in elite sports.

Encouraging Inclusion Through Physical Education and Sports

- 1. Role of Family :** Encouraging a healthy, sports-oriented lifestyle for a child with of disability.
- 2. Role of School :** Provide structured program to a child to get involved in activities and sports.
- 3. Role of Organisations :** There are organisations working to promote adapted sports at different levels.

Strategies to Make Physical Activities Assessable for Children with Special Needs

- 1. Communication :** Advance information about activity, space, resource person should be communicated clearly; Instruction in simple words and sentences in low tone; Communication board be used.
- 2. Space :** Space should be approachable according to the disability; All boundaries should be marked clearly.
- 3. Equipments :** Appropriate equipments and trained professionals.
- 4. Graded Activities :** Activities should be simple, videos to make them learn fundamental motor skills.
- 5. Social Strategies :** Encourage them to participate in physical activities.
- 6. Psychological Strategies :** Initially participate within his/her own disability group.

Advantages of Physical Activities for Children with Special Needs

- 1. Physical benefits :** Improved level of well-being and physical health. Helps to develop their gross motor and fine motor skills.
- 2. Mode of recreation and fun :** Helps to overcome physical obstacle and provide them a chance to make friends.
- 3. Improved emotional health :** Helps to overcome and control depression, improves mental health and wellbeing.
- 4. Channelizing the surplus energy**
- 5. Psychological benefits**
- 6. Healthy lifestyle**
- 7. Behavioural benefits**
- 8. Increased independence**

Need for Inclusive Education

- 1. For self-esteem**
- 2. For better social skills and communication**
- 3. For greater sensitivity**
- 4. For better understanding of strengths and weaknesses**
- 5. For better sense of belongingness**
- 6. For higher academic achievement**
- 7. For improved performance**

Mind Map

Some Important Definitions

- **Balanced diet** is a diet which contains different types of food items in balanced quantity so that the nutritional requirements are met adequately.
- **Nutrition** is a process of obtaining nutrients from food we eat.
- Nutrients that are required in large amounts in the diet are known as **macro nutrients**.
- Nutrients that are required in very small amounts, but are very essential for the body are known as **micro nutrients**.
- Those components of diet that provide calories/energy to the body are called **nutritive components** of food.
- Those components of diet that do not provide calories/energy to the body are called **non-nutritive components** of food.
- **Healthy weight** refers to that weight at which a person can lead a healthy life without any risk of disease.
- **Food intolerance**, is a situation when a person has difficulty in digesting a particular ingredient of a food.

Macro Nutrients

1. **Carbohydrates** are the primary source of energy and provide 4kcal per gram.
Sources : Rice, grains, breads, pasta, milk, fruit, root, vegetables, sugar.
Functions : Main source of energy for the body systems, spare proteins for other important functions, enable proper utilisation of fat.
2. **Proteins** is a major structural and functional component of our body. Proteins are also known as the '**building blocks of life**'.
Sources :
 - **Animal protein** such as— Eggs, milk, milk products, meat and fish.
 - **Vegetable protein** such as— pulses and beans, soyabean, mustard, green peas, nuts.**Functions** : Basic structure of all living cells, necessary for growth and development of body, repair worn out tissues, Insulin, adrenaline, and thyroid are also made of proteins.
3. **Fats (Lipids)** : Also known as 'the building blocks of fats and oils'.
Sources : Ghee, butter, cooking oil, nuts, cereals, pulses, milk, eggs, meat etc.
Functions : Provide energy (9kcal/g); Help in maintenance of skin and hair; Maintain body temperature; make body soft and oily.
4. **Water** : Foundation of life. It makes up to 60% of the total weight of an individual.
Functions : 90 percent of our blood is water; helps to carry nutrients to the body cells, helps in expulsion of body wastes, regulates body temperature and chemical functions of the body; Essential for the metabolism.

Micro Nutrients

- Functions** : They help to maintain different chemical processes in the body and help body to work smoothly.
1. **Minerals** are inorganic elements required for various physiological functions.
 - **Macro Minerals** : Sodium, Chloride, Potassium, Calcium, Phosphorus, Magnesium, Sulphur.
 - **Micro Minerals** : Iron, Zinc, Iodine, Selenium, Copper, Manganese, Fluoride, Chromium, Molybdenum.
 2. **Vitamins** are the chemicals which work as 'helpers'.
 - **Water Soluble Vitamins** : Thiamine, Riboflavin, Niacin, Biotin, Folic acid/Folate, Ascorbic Acid.
 - **Fat Soluble Vitamins** : Vitamin-A, (Retinol & beta carotene), Vitamin-D, Vitamin-E and Vitamin-K.

Classification of Food on the Basis of Presence of Nutrients

- Cereals and millets
- Milk and milk products
- Nuts and oil seeds
- Root vegetables
- Sugar and jaggery
- Pulses
- Meat and meat products
- Green leafy vegetables
- Fruits
- Fats and oils

Classification of Food on the Basis of Their Functions

- **Energy giving foods** : Foods rich in carbohydrate & fat.
- **Body building foods** : Foods rich in protein.
- **Protective or regulatory foods** : Foods that provide vitamins and minerals.

Non-nutritive Components

1. Phytates
2. Tannins
3. Trypsin inhibitors
4. Oxalates
5. Goitrogens

Beneficial Non-Nutritive Components of Food

1. Phytochemicals
2. Anthocyanins
3. Flavonoids/isoflavones
4. Artificial sweeteners
5. Preservatives
6. Spices
7. Coffee

Various Methods to Assess Healthy Body Weight

1. Height and Weight Chart Method
2. Calculation of Body Mass Index Method
3. Waist-to-Hip Ratio (WHR) Method
4. Girth Circumference Method
5. Bioelectrical Impedance Analysis Method
6. Gold Standard Method

Pitfalls of Dieting

- Inadequate nutrition
- Deficiency of minerals
- Kwashiorkor
- Teeth & blood related disorders

Types of Food Intolerance

- Absence of an enzyme
- Chemical causes of food intolerance
- Toxins due to food poisoning
- Salicylates
- Gluten intolerance
- Food Additives and Intolerance

Some Common Food Myths

- Drinking water in between meals affect digestion.
- Milk should be avoided after eating fish.
- Apples and brinjal are rich in iron because they turn brown when cut.
- Oils have lesser calories as compared to ghee or butter.
- Eat less carbohydrates to become healthier.
- Eggs increase cholesterol levels.
- Fat-free products help to loose weight.

Test and Measurement in Sports

Mind Map

Some Important Definitions

- A **healthy weight** is defined as the appropriate body weight in relation to height.
- **Basal metabolic rate** is the number of calories human body requires to accomplish its most basic (basal) life-sustaining functions when the person is awake but the body is in resting position since long time.

Fitness Test – Sai Khelo India Fitness Test in School

Category-I : Age Group 5-8 years (Class 1-3)

- **Body Mass Index** : Body Mass Index (BMI) is a useful measure of overweight and obesity. It is calculated from height and weight by using the following formula–

$$\text{Body Mass Index} = \frac{\text{Weight in kg}}{\text{Height in (m)}^2} \text{ Or } \frac{\text{Weight}}{\text{Height} \times \text{Height}}$$

- **Flamingo Balance Test** : Strength of leg, pelvic and trunk muscle as well as static balance.
- **Flamingo Balance Test** : To measure speed and coordination of limb movement.
- **Plate Tapping Test** : To measure speed and coordination of limb movement.

Category-II : Age Group 9-18 Years (Class 4-12)

- **50 Meters Standing Start** : To determine the acceleration and speed of a student.
- **600 Meters Run/Walk** : To determine the cardiovascular fitness
- **Sit and Reach Test** : To measure the flexibility of hip region including the lower back and hamstring muscles.
- **Partial Curl-Up Test–Abdominal** : To measure abdominal strength and endurance of the abdominal and hip flexors.
- **Push-ups for Boys and Modified Push-ups for Girls** : To determine upper-body strength, endurance and trunk stability of a student.

Rikli and Jones (Senior Citizen Fitness Test)

Purpose : To evaluate functional ability and monitor the physical fitness status of older people and to identify problems and work on the weakness.

Test Items

1. **Chair Stand Test for Lower Body Strength** : To determine lower body strength, particularly legs strength.
2. **Arm Curl Test for Upper Body Strength** : To determine upper body strength.
3. **Chair Sit and Reach Test for Lower Body Flexibility** : To determine lower body flexibility.
4. **Back Scratch Test for Upper Body Flexibility** : To measure upper body (shoulder) flexibility.
5. **Eight Foot Up and Go Test for Agility** : To determine physical mobility *i.e.*, power, speed, agility and balance.
6. **Six Minute Walk Test for Aerobic Endurance** : To measure aerobic endurance.

Johnson– Metheny Test of Motor Educatibility

To measure neuromuscular skill capacity. The test battery consist of following four motor stunts :

1. Front Roll
2. Back Roll
3. Jumping Half-Turns
4. Jumping Full-Turns

Measurement of Cardiovascular Fitness

Harvard Step Test : To determine aerobic fitness.

Physiology and Injuries in Sports

Unit

7

Mind Map

Some Important Definitions

- **Physiology** is the scientific study of functioning of human body.
- **Physical fitness** refers to the ability to perform various physical activities for a long time without fatigue.
- **Ageing** is that stage of life when a person's physical and functional abilities gradually decreases.
- **Injury** refers to the physical damage caused to any part or organ of the body.

Physical Fitness Components Determined by The Physiological Factors

- 1. Strength** is ability of muscles to produce force in single and maximal effort.
Strength depends on : Percentage of slow and fast twitch fibres, size of the muscles, body weight, number of motor units and intensity of nerve impulse, age
- 2. Endurance** is the ability to work for a longer period without getting fatigued.
Endurance depends on : Percentage of slow and fast twitch fibres, aerobic capacity, lactic acid tolerance
- 3. Speed** is the ability to cover maximum distance in shortest period.
Speed depends on : Percentage of slow and fast twitch fibres, mobility of the nervous system, explosive strength, flexibility, bio-chemical reserves and metabolic power.
- 4. Flexibility** is the ability of muscles & tendons to lengthen without getting damaged.
Flexibility of depends on : Muscle strength, joint structure, age and gender, stretchability of muscles, temperature, previous injury.

Effects of Exercises on Muscular System

- 1. Short Term Effects :**
 - Increase in blood supply
 - Enhanced muscle flexibility
 - Muscle fibres become large
 - Increase in muscle temperature
 - Accumulation of lactate
- 2. Long Term Effects :**
 - Hypertrophy
 - Increase in myoglobin storage
 - Increase in glycogen
 - Increase in strength of ligaments & tendons
 - Increase in size & number of mitochondria
 - Increase in lactate acid tolerance

Effects of Exercise on Cardiorespiratory System

- 1. Short Term Effects :**
 - Increase in heart rate
 - Increase in blood pressure
 - Increase in cardiac output
 - Increase in blood circulation
 - Increase in stroke volume
- 2. Long Term Effects :**
 - Increase in the size of heart
 - Decrease in resting heart rate
 - Increase in capillaries network
 - Reduces lactic acid
 - Controls the blood pressure
 - Enhances stroke volume & cardiac output

Effects of Exercises on Respiratory System

- 1. Short Term Effects :**
 - Increase in respiratory rate
 - Increases the rate of gas exchange
 - Increased the tidal volume
- 2. Long Term Effects :**
 - Strengthening of the respiratory muscles
 - Increased pulmonary diffusion
 - Increases respiratory volume
 - Increased residual volume

Physiological Factors That Determine Components of Fitness

- 1. Skeletal Muscles Factor :**
 - Slow twitch fibres help in long distance running, swimming, cycling etc.
 - Fast twitch muscle fibre helps in anaerobic activities like jumps, throws, sprint etc.
 - Sprinters generally have a higher percentage of fast twitch fibres and a lower percentage of slow twitch fibres, whereas endurance athletes have a higher percentage of slow twitch fibres and a lower percentage of fast twitch fibres.
- 2. Energy Production Factor**
- 3. Cardio-respiratory Factor :** Combination of respiratory and cardiovascular systems which jointly transport oxygen to the cells and provide energy to various systems in the body.

Physiological Changes Due to Ageing

1. Decline in strength of muscles.
2. Decline in the number of spinal cord axons.
3. Thyroid dysfunction.
4. Deterioration in pulmonary ventilation & gas exchange.
5. Decline in cardiovascular function & aerobic capacity.
6. Loss of bone mass and skeleton gets demineralised.

Skin and Soft Tissue Injuries

- 1. Abrasion :** Rubbing off of skin on a rough ground.
- 2. Contusion :** Blood gets accumulated around a blood vessel.
- 3. Laceration :** Irregular tear-like wounds caused due to some blunt trauma.
- 4. Sprain :** Ligament injury, due to overstretching or tearing of ligaments.
- 5. Strain :** Injury to the muscles which are attached to a bone and caused by overuse, force, or stretching.
- 6. Incision :** A cut on the skin that expose the underlying tissue, bone or organ.

Hard Tissues/Bone and Joint Injuries

- 1. Dislocation :** One end of the bone gets displaced from its original position.
- 2. Fractures :** Bone injury, in which bone breaks or cracks up due to some external pressure.
Types of bone injuries or fractures :
 - **Greenstick Fracture :** Young, soft bone bends instead of break.
 - **Comminuted Fracture :** Bone is broken, splinted, or crushed into number of pieces.
 - **Transverse Fracture :** Straight break across a bone at a right angle.
 - **Oblique Fracture :** Slanted fractures, i.e., when the bone breaks diagonally.
 - **Impacted Fracture :** Broken ends of the bone are jammed together.

Biomechanics and Sports

Mind Map

Some Important Definitions

- **Biomechanics** is the science of movement of a living body, including how muscles, bones, tendons, and ligaments work together to produce movement.
- A **lever** is a rigid bar/rod that is used to apply and modifies force which is applied at two points, and it turns the third point.
- **Equilibrium** is a state of rest of the body either at stationary or in moving position.
- **Friction** refers to the resistance to motion at the contact of two surfaces.
- A **projectile** is defined as an object which once projected into the air horizontally, travels under the influence of downward force of gravity and air resistance.

Advantages of Physical Activities for Children with Special Needs

1. **Physical benefits** : Improved level of well-being and physical health. Helps to develop their gross motor and fine motor skills.
2. **Mode of recreation and fun** : Helps to overcome physical obstacle and providing them a chance to make friends.
3. **Improved emotional health** : Helps to overcome and control depression, improves mental health and well-being.
4. Channelizing the surplus energy
5. Psychological benefits
6. Healthy lifestyle
7. Behavioural benefits
8. Increased independence

Guiding Principles to Determine The Degree of Stability

1. Broader the base, the greater the stability
2. Body weight is directly proportional to stability
3. Lower the centre of gravity, higher the stability
4. Distance of the centre of gravity of the body above the base
5. Direction of acting force

Types of Friction

1. **Static friction** : Occurs when the force applied to an object does not cause the object to move in the direction of the force.
2. **Dynamic/kinetic friction** : Opposing force that comes into play when a body actually moves over the surface of another body.
3. **Fluid friction** : It occurs when motion of objects is opposed while traveling through any fluid.

Importance of Biomechanics in Sports

- Helps to improve sports performance
- Helps to improve technique
- Helps to develop better sports equipments
- Improves training techniques
- Helps to prevent sports injuries
- Helps to understand human body
- Provides knowledge of safety principles
- Helps in research work
- Helps to build confidence in players
- Helps to maintaining healthy body
- Increases the popularity of sports

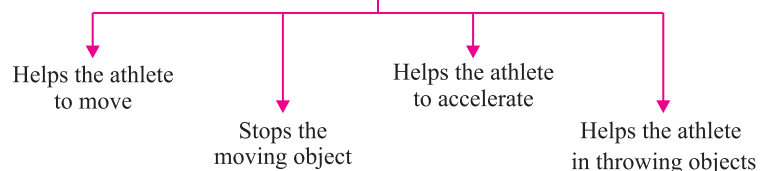
Types of Levers

1. **Class-1 Lever** : Fulcrum between the effort (force) and load (resistance).
2. **Class-2 Lever** : Load (resistance) between the effort (force) and the fulcrum.
3. **Class-3 Lever** : Effort (force) between the load (resistance) and the fulcrum.

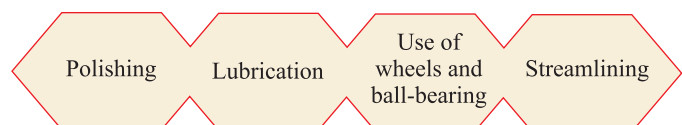
Types of Equilibrium

1. **Static Equilibrium** : A body is at rest or completely motionless.
2. **Dynamic Equilibrium** : A state when all the applied and inertial forces applied to a moving body are in balance.

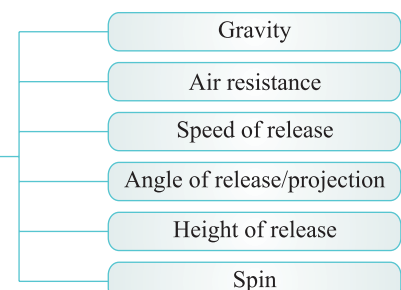
Importance of Centre of Gravity in Sports



Methods to Reduce Friction



Factors Effecting Projectile Trajectory



Mind Map

Some Important Definitions

- **Psychology** is study of human behaviour.
- **Sports psychology** is the study of how psychology of a player affects his/her sports performance.
- Collective form of qualities, abilities and characteristics of a person is known as **personality** of a person.
- **Motivation** is a type of force that helps a person to start some work, carry it out and achieve success in it.
- **'Exercise adherence'** refers to maintain a regular physical activity sessions over a long period of time.
- **'Aggression'** refers to a range of behaviour by an individual that can result in both physical and psychological harm to one self, others or objects in environment.
- **Self-esteem** refers to the qualities and characteristics contained in one's self-concept are perceived to be positive.
- **Mental imagery** refers to using individual senses to create an image or experience in the mind.
- **Self-Talk** refers to the thoughts and words athletes say to themselves, usually in their minds.
- **Goal setting** refers to the process of systematic planning to achieve a specific goal/aim.

Types of Motivation

1. **Intrinsic Motivation** : To do something because it's personally rewarding to a person.
2. **Extrinsic Motivation** : To do something to earn a reward or avoid punishment.

Techniques of Motivation

- | | |
|---------------------------|---|
| ○ Goal setting | ○ Cooperative learning with opportunities |
| ○ Proper feedback | ○ Fun-based training |
| ○ Social support | ○ Individualised Training Programme |
| ○ Verbal comments | ○ Positive attitude and environment |
| ○ Good quality equipments | ○ Jobs |
| ○ Positive talks | ○ Cash prizes, certificates and trophies |
| ○ Role of media | ○ Role of spectators |

Strategies for Enhancing Adherence to Exercise

- | | |
|--|-----------------------------------|
| 1. Begin with simple exercises | 2. Exercise in morning |
| 3. Concentrate only on yourself | 4. Set appropriate goal |
| 5. Take support of others | 6. Praise yourself |
| 7. Select exercises of personal choice | 8. Be punctual |
| 9. Be aware towards your progress | 10. Variety in exercise programme |

Reasons to Exercise

- | | |
|---------------------------------------|------------------------------|
| ○ To overcome social physique anxiety | ○ To reduced risk of disease |
| ○ Recreation | ○ Mental relaxation |
| ○ Socialisation | ○ To increases energy level. |
| ○ To be physically active | ○ Makes a person happier. |
| ○ Maintain a healthy weight | |

Jung's Classification of Personality Types

- **Introverts** : Characteristics such as– shyness, social withdrawal and tendency to talk; own internal world of ideas, thoughts, behaviour, interest and attitude.
- **Extroverts** : Outgoing, friendly, talkative, and social in nature; Prefer social interactions outrageous; Very bold, outgoing and optimistic person.
- **Ambiverts** : Blend of traits from both introvert and extrovert along with some specific strengths.

Big Five Theory of Personality

Also known as the Five Factor Model of Personality and sometimes referred as OCEAN (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism).

1. **Openness** : This trait features characteristics such as– imaginative, humorous, intellectual, creative, curious, having broad interests, open to ideas.
2. **Conscientiousness** : Well organised, careful, responsible, hardworking and dependable individuals.
3. **Extraversion** : Enthusiasm, energetic, positive emotions, talkativeness, assertiveness.
4. **Agreeableness** : Compassionate behaviour nature.
5. **Neuroticism** : High in this trait tend to experience mood swings, anxiety, irritability & sadness. Low in this trait tend to be more stable & emotionally calm and even-tempered.

Types of Aggression in Sports

1. **Hostile Aggression** : When the primary intention of the behaviour is to harm the other player.
2. **Instrumental Aggression** : Aggression is being used just as an instrument to gain advantage or win and not because of anger or enmity.
3. **Assertive Behaviour** : When a player uses the oral methods to draw attention of others and disturb the concentration of the opponent player.

Types of Goal Setting in Sports

1. **Outcome/Objective Goals** : Focuses only on the final outcome.
2. **Performance/Subjective Goals** : Focus on achievements of athletes.
3. **Process Goals** : Focuses on specific behaviour to improve the overall sport performance.

Characteristic of Effective Goal Setting

- | | |
|--------------------------|--------------------|
| 1. Specific Goal | 2. Measurable Goal |
| 3. Action-Oriented Goals | 4. Realistic Goals |
| 5. Timely | |

Benefits of Exercise

- | | |
|-----------------------------|----------------------------|
| 1. Health benefits | 2. Provides stress relief |
| 3. Increases happiness | 4. Promotes self-efficacy |
| 5. Promotes social cohesion | 6. Promotes group cohesion |
| 7. Enhances our values | |

Training in Sports

Mind Map

Stages of Talent Identification

1. **First stage** : Essential fields tests of potentially talented children are conducted.
2. **Second stage** : Those selected after these tests undergo more sophisticated tests, administered by specialists in their respective areas.
3. **Third stage** : Those who qualified the second stage participate in elite junior programmes.

Process of Talent Identification and Development

1. Talent detection
2. Talent identification
3. Talent development
4. Talent selection
5. Talent transfer

Concept of Talent Development in Sports

1. **First Stage 'Stage of Initiation'** : This stage is characterised by children engaging in fun and playful activities.
2. **Second Stage 'Stage of Development'** : During this stage, children get involved in a particular activity.
3. **Third Stage 'Stage of Perfection'** : Players become experts in their chosen sport.

Sports Training Cycle

1. **Micro Cycles** : Shortest cycle of training 3 to 10 days based on the principle of overload and recovery.
2. **Meso Cycles** : A cycle of medium duration 3 to 6 weeks aims to accomplish a particular goal a transitional phase that ensures recovery and relaxation.
3. **Macro Cycles** : Longest of the three cycles of 3 to 12 months sports training include– endurance, intensity, competition and recovery programmes.

Types of Strength

1. **Dynamic Strength** also known as isotonic strength is necessary and responsible for body movements. dynamic strength is further divided into following categories :
 - (a) **Maximum strength** is the maximum resistance that our body systems can exert in a single effort.
 - (b) **Explosive strength** is the ability of muscles to overcome a particular resistance as fast as possible.
 - (c) **Strength endurance** is defined as the capacity of an individual to maintain strength under fatigue or for a fairly long period of time.
2. **Static Strength** also known as isometric strength is the ability of muscles to act against resistance.

Methods for Improving Strength

1. **Isometric Exercises** are those exercises in which muscular tension is developed without any visible movement of muscles or any body part, while doing such exercises.
2. **Isotonic Exercises** : Those exercises in which movements can be seen directly are called isotonic exercises.
3. **Isokinetic Exercises** are combination of isotonic and isometric contractions in which a particular type of muscle contraction called isokinetic contraction takes place.

Some Important Definitions

- **Sport training** is a process of preparation for a sport performance.
- **Talent identification** in sports refers to the search for young athletes who have the potential to become an elite athlete in the future.
- **Talent development** refers to the whole process through which abilities and skills of a young talented player is further nurtured and enhanced.
- **Sports training cycle** is a combination of different training regimens of different durations to attain peak performance during a competition.
- **Strength** is the force generated by muscle or group of muscles which enables a person to do physical work.
- **Endurance** is the ability to do a physical activity for a long time.
- **Speed** is the ability to cover maximum distance within minimum time.
- **Flexibility** refers to, the range of motion around a joint.
- **Circuit training** is a high-intensity exercise routine that involves performing a series of exercises at different stations with short rest periods in between to enhance strength and endurance.

Types of Endurance

1. **Endurance according to the nature of the activity** : According to the nature of the activity, endurance is further divided into :
 - **Basic endurance** : The basis of all types of endurance.
 - **General endurance** : Ability to resist fatigue satisfactorily.
 - **Specific endurance** : Ability to resist fatigue caused by a specific/particular sports activity.
2. **Endurance according to the duration of the activity** :
 - **Speed endurance** : Ability to resist fatigue caused due to intense activities.
 - **Short term endurance** : Ability to resist fatigue caused due to sporting activities lasting from about 45 seconds to 2 minutes.
 - **Middle term endurance** : Ability to resist fatigue caused due to sporting activities lasting from 2 to 11 minutes.
 - **Long term endurance** : Ability to resist fatigue caused due to sporting activities which last for more than 11 minutes, 5000 mts., 10,000 mts.

Methods to Develop/Improve Endurance

1. **Continuous Training Method** : Continuous exercises performed for a longer time without any rest or break.
Types of Continuous Training Methods : Slow Continuous Method, Fast Continuous Method, Variable Pace Method and Fartlek Method.
2. **Interval Training Method** : The activity is practiced at a comparatively high intensity with intervals or breaks of incomplete recovery.
3. **Repetition Training Method** : High intensity activity is performed and followed by an interval of complete recovery.

Types of Flexibility

1. Active Flexibility
2. Passive Flexibility
3. General Flexibility
4. Specific Flexibility
 - Static Flexibility
 - Dynamic Flexibility

Methods to Improve Flexibility

1. Slow stretching
2. Slow stretch and hold
3. Static stretching method
4. Dynamic stretching method
5. Ballistic stretching method
6. Post isometric stretching method

Premier Test Paper-1
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Long Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A

(All Questions are compulsory)

1. Rules and regulations of a sports tournament are the responsibility of _____ Committee.

- (a) Technical (b) Logistics (c) Marketing (d) Finance

Ans.(a) Technical

2. First menstrual period in a young girl is called :

- (a) Menstrual dysfunction (b) Osteoporosis
(c) Amenorrhea (d) Menarche

Ans.(d) Menarche

3. Which of the following asana is not used to cure obesity?

- (a) Pavanmuktasana (b) Halasana (c) Shavasana (d) Paschimottanasana

Ans.(c) Shavasana

4. The founder of Special Olympics is _____.

- (a) John F. Kennedy (b) Ludwig Guttman
(c) Eugene Rubens (d) Eunice Kennedy Shriver

Ans.(d) Eunice Kennedy Shriver

5. The duration of micro plan in sports training may be _____.

- (a) 3-7 days (b) 3-7 weeks (c) 3-4 months (d) 3-4 years

Ans.(a) 3-7 days

6. Partial curl-up test is used to measure _____.

- (a) Speed (b) Strength (c) Reaction time (d) Flexibility

Ans.(b) Strength

7. Sprain is related to _____.

- (a) Muscle (b) Ligament (c) Bone (d) Tendon

Ans.(b) Ligament

8. Which of the following is *not* Jung's classification of personality?

- (a) Introvert (b) Endomorph (c) Extrovert (d) Ambivert

Ans. (b) Endomorph

9. The ability to combine the movement of different body parts is known as :

- (a) Coupling ability (b) Reaction ability
(c) Rhythm ability (d) Adaptation ability

Ans. (a) Coupling ability

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

Assertion (A) : Aggression is a type of hostile behaviour aimed to harm other persons.

Reason (R) : Aggression is unintentional.

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

- (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.

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

11. Match List-I with List-II and select the correct answer from the codes given below :

List-I

- A. Abrasion
B. Fracture
C. Dislocation
D. Strain

List-II

- (i) Joint
(ii) Bone
(iii) Muscle
(iv) Skin

Choose the correct option :

- (a) A-(iv), B-(ii), C-(i), D-(iii) (b) A-(iv), B-(ii), C-(iii), D-(i)
(c) A-(iv), B-(i), C-(iii), D-(ii) (d) A-(iii), B-(iv), C-(ii), D-(i)

Ans. (a) A-(iv), B-(ii), C-(i), D-(iii)

12. Fats and oils come under :

- (a) Bodybuilding foods (b) Protective foods
(c) Routine foods (d) Energy-giving foods

Ans. (d) Energy-giving foods

13. How many matches will be played in the 2nd round of a knockout tournament if 17 teams are participating ?

- (a) 6 (b) 7 (c) 8 (d) 5

Ans. (c) 8

14. 'Flat foot' postural deformity is also known as :

- (a) Genu varum (b) Pes planus (c) Genu valgum (d) Lateral curvature

Ans. (b) Pes planus

15. Suryabhedhi Pranayam is performed to control :

- (a) Obesity (b) Diabetes (c) Asthma (d) Hypertension

Ans. (a) Obesity

16. The purpose of Plate Tapping Test is :

- (a) To know the strength of hands

- (b) To know the cardiovascular efficiency
- (c) To know hand-eye quickness and co-ordination
- (d) To know the flexibility

Ans. (c) To know hand-eye quickness and co-ordination

17. Friction can be increased by using _____.

- (a) Lubricant
- (b) Polishing
- (c) Magnesium Powder
- (d) Ball Bearing

Ans. (c) Magnesium Powder

18. Which Newton's Law will apply while taking off in Long Jump?

- (a) Law of Acceleration
- (b) Law of Inertia
- (c) Law of Reaction
- (d) Law of Gravity

Ans. (c) Law of Reaction

Section-B
(Attempt any 5 questions)

19. Explain any two functions of marketing committee, before and during the sports competition.

Ans. Pre Event Responsibilities of a Marketing Committee :

- Prepares a strategy to attract more sponsors, spectators and media coverage.
- Adopt various means and modes for the publicity of the event.
- Meet sponsors for branding related issues and media houses for proper coverage of the event.

Responsibilities of a Marketing Committee During the Event/Tournament :

- Issues regular press releases.
- Maintains a harmonious coordination with media personnels and sponsors.
- Arrangements for live telecast of the events and ceremonies.

20. Enlist any four corrective measures for Knock-knees.

Ans. Corrective Measures for Knock-Knees

- Exercises like horse-riding.
- Keeping the pillow between the knees.
- Standing erect for some time.
- Performing padmasana and gomukhasana regularly can help strengthen muscles of the legs and realign the knees.
- Strengthening exercises, such as leg raises while seated or lying down.
- Use of walking callipers is also a big help at pre-puberty stage.
- Excessive body weight can be a contributing factor to Genu valgum as extra weight puts additional strain on the legs and knees, and this can cause knock-knees to worsen. A person who is overweight should lose weight through a combination of diet and exercise.

21. State any four benefits of Kapalbhathi.

Ans. Benefits of Kapalbhathi

- This is a great cleanser for the respiratory passages including the sinuses.
- It improves respiratory function and promotes circulation.
- Improves balance.
- It removes acidity and gas related problems.
- It cures sinusitis, asthma, and hair loss.

22. List down any two sources and two functions of protein.

Ans. Sources of Protein : On the basis of source, protein can be classified into two categories.

- (a) **Animal protein :** Protein, which we get from animal products, is called animal protein. This protein is found in eggs, milk, milk products, meat and fish. Egg is the best example of rich protein because sufficient amounts of amino acids are found in eggs.
- (b) **Vegetable protein :** Protein, which we get from vegetables, is called vegetable protein. Vegetable protein is usually found in various types of pulses and beans, soyabean, mustard, green peas, nuts, groundnuts, dry fruits and food grains.

Functions of Protein

- Protein is basic structure of all living cells. Protein is main components of muscles, tendons, ligaments, organs, glands and all body fluids like enzymes, hormones and blood.
- Protein are needed for growth and development of body. It helps to repair or replace the worn out tissues. It does not provide energy in normal routine whereas it acts as energy source only under extreme starvation.
- Proteins are required for making blood, muscle, nails, skin, hair and body parts and repair them when needed and are important in some situation like early development and maturation, pregnancy lactation, or injury like burn etc.
- Protein provides support for the growth of body organs and helps in formation of new cells.
- Provides assistance in proper functioning of the body.
- Different chemical functions of the body are done by enzymes produced by proteins.
- Many hormones such as insulin, adrenaline, and thyroid are also made of proteins.
- Protein present in the blood transmits haemoglobin and oxygen to the fibers of our body.
- To prevent diseases in the body, some antibodies are produced by protein.
- The energy that is generated during the metabolic process of the protein gets help to keep the temperature of the body stable.

23. Write any two physiological factors determining speed.

Ans. Speed of a person depends on following physiological factors :

- (i) **Percentage of slow and fast twitch fibres :** Muscle with greater percentage of fast twitch fibres contract with more speed in comparison to muscles with more percentage of slow twitch fibres and hence produce more speed.
- (ii) **Mobility of the nervous system :** Mobility of the nervous system refers to the speed of transformation of nervous processes, *i.e.*, time taken in change of an ongoing process. The rapid contraction and relaxation of muscles necessary for speed is made possible by the rapid excitation and inhibition of the concerned motor centres.
- (iii) **Explosive strength :** Athletes who have more percentage of fast twitch fibres have high levels of explosive strength and therefore have better speeding ability as compared to those athletes who have more percentage of slow twitch fibres. Various studies have also proved that– all world-class sprinters have more percentage of fast-twitch fibres whereas endurance athletes have more percentage of slow-twitch fibres in their muscles.
- (iv) **Flexibility :** Good flexibility allows maximum range of movement without much internal resistance. Flexibility also enables complete utilisation of explosive strength.
- (v) **Bio-chemical reserves and metabolic power :** There should be sufficient amount of Phosphagen Adenosine Triphosphate (ATP) and Creatine Phosphate (CP) stored in the muscles. If there is any shortage of ATP and CP, then due to insufficient energy supply speed will slow down after a short time.

24. According to 'Big Five Theory', write any two traits of personality.

Ans. According to 'Big Five Theory' there are five domains or traits of personality which are represented by the acronym OCEAN, i.e., – Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

Openness :

- This trait features characteristics such as– imaginative, humorous, intellectual, creative, curious, having broad interests, open to ideas.
- People who are high in this trait tend to have a broad range of interests.
- They are curious about the world and other people and eager to learn new things and enjoy new experiences.
- People who are high in this trait tend to be more adventurous and creative.
- In sports, players scoring high on Openness are characterised by demonstrating new ideas and skill execution initiatives along with wide variety in ideas.
- People low in this trait are often much more traditional and may struggle with abstract thinking.

Conscientiousness :

- Conscientious people are often very well organised, careful, responsible, hardworking and dependable individuals. But sometime they can also be relaxed and easy going, spontaneous, disorganised and careless also.
- Conscientious people are often are very mindful about details.
- Individuals high on conscientiousness perform better in academics as well as in the sports arena wherever planning, organising skills and decision-making abilities are essential to the task.

Section-C
(Attempt any 5 questions)

25. Explain any three effects of exercise on the cardio-respiratory system.

- Ans. (i) Increase in heart rate :** Heart rate during exercise will increase, because muscles are exposed to work and require more oxygen. Nervous system detects that and gives signal to heart to increase work performance, by that pumping more blood. Generally, a normal healthy heart rate of an adult at rest is between 60 to 80 beats per minute. During exercise, the heart rate temporarily increases according to intensity and duration of the exercise.
- (ii) Increase in blood circulation :** As a person exercise, the heart rate increases and the blood circulation also increases in the body to deliver the oxygen to muscles. As a result, the movement or flow of blood increases to tissues or organs.
- (iii) Increase in blood pressure :** As a person exercises, his/her systolic blood pressure increases temporarily and is in direct proportion to the increase in exercise intensity. The increased systolic blood pressure is because of the increased cardiac output. Although there is minimal change in diastolic blood pressure.
- (iv) Increase in the size of heart :** The mass and volume of heart increases with consistent exercise, its walls thicken and become stronger, while the left ventricle also expands in size, allowing more blood to flow through the body.
- (v) Reduces lactic acid :** Anaerobic respiration is the process of converting glucose into energy without oxygen. During this process, lactic acid, a waste product, is created. Lactic acid makes muscles tired and painful. Regular exercises prepare muscles to adjust to working even with lower levels of oxygen.
- (vi) Decrease in resting heart rate :** Due to improved efficiency of the heart, it has to pump less blood to meet the needs of the body. As a result, the heart rate at rest decreases. It is also called as 'Bradycardia'.

26. Briefly explain the non-nutritive components of diet.

Ans. Those components of diet that do not provide calories/energy to the body are called non-nutritive components of food. Foods we eat contain a wide range of organic chemical compounds some of which have nutritive value while some have no nutritional value. Chemical compounds in foods with no specific nutritional function are called non-nutritive components of foods. These components are generally added to food and beverage products to make the food smell better, taste better, last longer, and/or look better. Some of the non-nutritive components are–

- (i) **Phytochemicals** : Phytochemicals are believed to act as antioxidants and protect cells from damage that could lead to cancer. They are found in colourful vegetables and fruits.
- (ii) **Anthocyanins** : They have anti-inflammatory and anti-tumour properties.
- (iii) **Flavonoids/isoflavones** : They help in lowering the risk of osteoporosis, heart disease, breast cancer and symptoms of menopause.
- (iv) **Artificial sweeteners** : These are synthetic compounds that duplicate the taste of sugar, but contain less energy, and, therefore, are often added to diet foods and beverages. They maintain the desired taste, but reduce the caloric value.
- (v) **Preservatives** : They slowdown microbial growth and are used in food and beverage products to prolong their shelf life.
- (vi) **Spices** : Various spices are used for flavouring, colouring or preserving food and also to hide other flavours. Spices have various uses, *for example*, turmeric roots are also consumed as a vegetable and garlic as an antibiotic.
- (vii) **Coffee** : Coffee has a stimulating effect on humans because of its caffeine content.

27. Discuss about the female athlete triad.

Ans. Participation in sports and physical activities provides a lot of physical and social benefits. There is a positive relationship between physical activity and a number of factors affecting girl's physical health, including diabetes, blood pressure and the ability to use fat for energy, thus preventing obesity. Physical activity could reduce the risk of chronic diseases in later life. Also, regular activity beginning in childhood helps to improve bone health, thus preventing osteoporosis, which predominantly affects females.

However, participation in sports is not without certain health risks. For regular participation in sports athletes have to take a balanced diet since these demand high levels of energy and a good quantity of dietary intake. Such pressures put the athlete's health at risk and leads to Female Athlete Triad. The three components to describe the triad are–

- (i) **Low Bone Mineral Density– BMD (Osteoporosis)** : Low bone mineral density, also termed as osteoporosis can be defined as a disease which is marked by increased bone fragility, disturbance in bone structure due to low bone mineral density (BMD). Low BMD is generally caused due to improper diet and amenorrhoea. Due to low level of oestrogen and progesterone in female athletes, their bones become weaker and lose minerals.
- (ii) **Amenorrhoea** : Amenorrhoea is the medical term used for the absence of menstrual period for 3 months or more. Amenorrhoea is a menstrual disorder or illness due to which girls of 18 years and above either never began menstruating or there is an absence of menstruation for three months or more in women with a history of normal menstrual cycle.
- (iii) **Eating Disorders** : Eating disorder, also known as 'gross disturbance in eating behaviour' is one such mental disorder which can occur in anyone *i.e.*, men, women, rich, poor, young, old and even in a person from any cultural background. A person suffering from eating disorder has disturbed eating behaviour *i.e.*, eating either too much or too little along with extreme concerns about his/her body shape, weight and body image.

28. Write the purpose and procedure of Sit-and-Reach Test as per 'SAI Khelo India Fitness' Test.

Ans. Purpose : The sit and reach test is a significant test to measure the flexibility of hip region including the lower back and hamstring muscles.

Procedure :

- Subject sits down on the floor with legs stretched out straight ahead.
- The soles of the feet should be kept flat against the box and both the knees should be locked and pressed flat to the floor. If required an assistant may hold the knees down.
- Face the palms downwards and hands should be on the top of each other or side by side.
- Then the subject extends his both hands forward along the measuring line on the box as far as he can extend. His fingertips of both hands should remain equal and at the same level. He should not jerk or bounce to reach at maximum distance.
- He should hold the full reach position for two seconds and the score (distance) should be recorded.

Scoring : The score is recorded (difference between initial position and final position), in cm and mm, as the distance reached by the fingertips of both the hands.

29. Write a short note on 'Paralympic' Games.

Ans. Paralympics refers to a series of international sports contests for athletes with disabilities. Paralympics Games were started by Dr. Ludwig Guttman. This event is organised and governed by the International Paralympic Committee (IPC) which was established on 22 September 1989 in Dusseldorf, Germany. First Paralympic Games took place in Rome, Italy in 1960 featuring 400 athletes from 23 countries. Since then they have taken place every four years.

Moto of Paralympics : "Spirit in Motion".

Symbol of Paralympics : Contains three colors: red, blue, and green in the shape of an Agito (which is latin for "I move").

Vision of IPC : To enable Paralympics athletes to achieve sporting excellence and to inspire and excite the world.

Paralympics Anthem : Anthem of the Future.

Aim of IPC : To develop sports opportunities for all the people with an impairment from the beginner to the elite level.

Categories of Paralympic Games : In order to make competition fair and provide equal opportunity to para athletes to compete and win, IPC has established 10 disability categories under which para athletes compete with each other.

30. Describe the procedure and any two benefits of Pavanmuktasana.

Ans. Procedure of Pavanmuktasana

- (i) Lie on back, stretching your legs straight.
- (ii) Now bend your right knee and hold it with your hands, pressing it towards your abdomen. Breathe out, while lifting up your head and try to touch your knee with your chin.
- (iii) Breathe in and stretch your legs straight.
- (iv) After that press your abdomen with your left leg.
- (v) Then press your abdomen with both legs, placing your chin between your knees. From this position, swing your body back and forth 5 to 10 times, then swing your body left to right and vice versa 5 to 10 times.

Benefits of Pavanmuktasana

- Stretches the neck and back.
- The abdominal muscles are stretched and the internal organs are compressed which increases the blood circulation and stimulates the nerves, increasing the efficiency of the internal organs.
- The pressure on the abdomen releases any trapped gases in the large intestine.
- Digestive system is improved.
- Relieves constipation.
- Strengthens the lower back muscles and loosens the spinal vertebrae.
- It is beneficial for women too. Massages the pelvic muscles and reproductive organs and is beneficial for menstrual disorders.
- Reduces fats in the abdominal area, thighs and buttocks.

Section-D (Attempt any 5 questions)

31. Vitamins and minerals are essential nutrients which protect us from various diseases and are helpful for general development of the body.



- (i) _____ is a group of 8 water-soluble vitamins which are important for cellular metabolism.
- (ii) _____ disease is caused due to lack of Vitamin-C.
- (iii) Vitamin _____ is important for healthy bones and teeth.
- (iv) Vitamin _____ is needed for blood-clotting.

OR

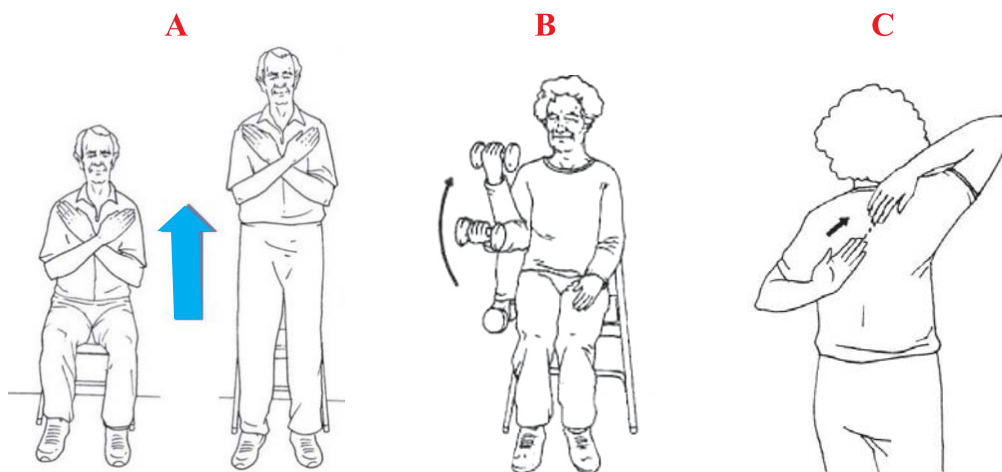
Night blindness occurs due to the deficiency of Vitamin _____.

- Ans.(a) Vitamin-B
(b) Scurvy
(c) Vitamin-D
(d) Vitamin-K

OR

Vitamin-A.

32. Taking care of health during old age is very important. Keeping this in mind, fitness tests have been developed for senior citizens so that their fitness can be assessed. Look at the pictures given below carefully and answer the questions.



- (i) Name the test used to measure upper body flexibility.
- (ii) In Arm Curl Test weight of the dumbbell for women is _____ pounds.
- (iii) Purpose of Chair-Stand Test is to measure _____.
- (iv) In which test is stop watch not used ?

OR

Rikli and Jones Senior Citizen Test was developed in the year _____.

- Ans.**(a) Back scratch test
 (b) 5 pounds
 (c) Lower body strength
 (d) Chair sit and reach test/back scratch test

OR

2001

33. Psychological attributed have an important role in an athlete's life and can influence the athlete's performance, behaviour and psychological well-being. A wise coach can use these techniques and may enhance the performance of the athlete.



- (i) An image can be created in the mind in the absence of any external stimuli, and this is known as _____.
- (ii) _____ is an effective technique to control thoughts and to influence feelings.
- (iii) _____ is necessary to achieve the target within a specified time.
- (iv) _____ is centred around a belief in the self, respect for self and confidence for self.

- Ans.**(i) Mental imagery.
(ii) Self talk
(iii) Goal setting
(iv) Self esteem

Section-E
(Attempt any 3 questions)

34. Prepare a knockout fixture of 15 teams mentioning all the steps involved.

Ans. Total number of teams (N) = 15

Number of matches = Total number of teams (N) - 1 = 15 - 1 = 14 matches

Number of rounds = $2 \times 2 \times 2 \times 2 = 4$ rounds

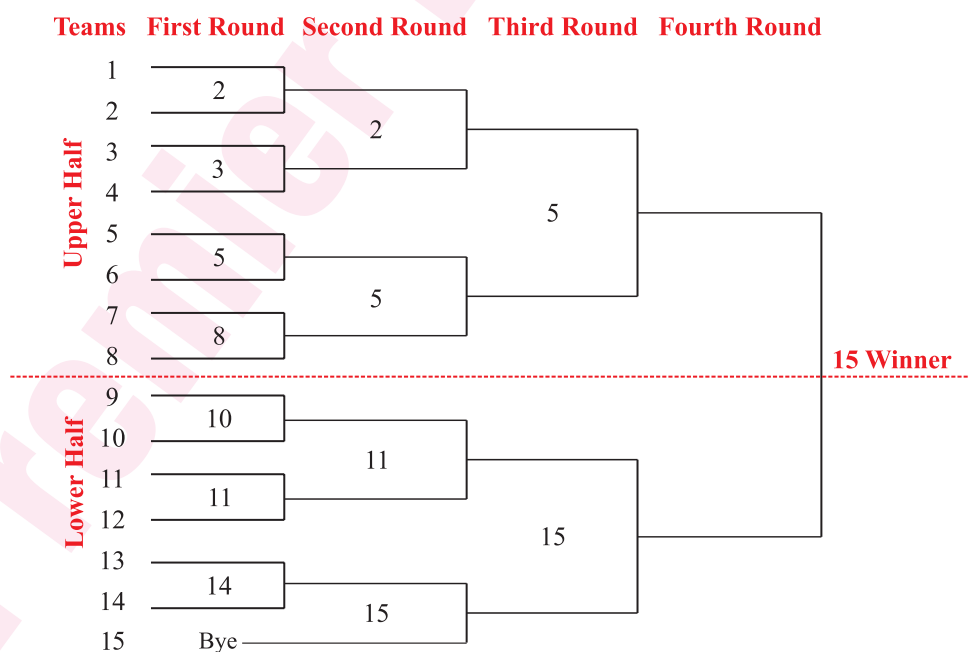
Number of teams in upper half = $\frac{\text{Total number of teams (N)} + 1}{2} = \frac{15 + 1}{2} = \frac{16}{2} = 8$ teams

Number of teams in lower half = $\frac{\text{Total number of teams (N)} - 1}{2} = \frac{15 - 1}{2} = \frac{14}{2} = 7$ teams

Total number of byes = 16 - 15 = 1 bye

Number of byes in upper half = $\frac{\text{Number of byes} - 1}{2} = \frac{1 - 1}{2} = \frac{0}{2} = 0$ byes

Number of byes in lower half = $\frac{\text{Number of byes} + 1}{2} = \frac{1 + 1}{2} = \frac{2}{2} = 1$ byes



35. Define Projectile. Describe any four factors that affect projectile trajectory.

Ans. A projectile is defined as an object which once projected into the air horizontally, travels under the influence of downward force of gravity and air resistance.

Factors that Affect Projectile Trajectory

- (i) **Gravity** : Without gravity, the body will travel in a straight line after being thrown.
- (ii) **Air resistance** : When a projectile moves through air, it is slowed down due to air resistance acting on it. Air resistance decreases the horizontal component of a projectile.
- (iii) **Speed of release** : The distance covered by an object depends on the speed of release of the projectile. If the throwing speed is more, the object covers more distance. On the other hand, if throwing speed is less, the object covers less distance.
- (iv) **Angle of release/projection** : The distance covered by an object depends on the angles of release of projectile. Angle of 45° is the best angle for achieving maximum distance. If an object is projected from the angle of 90° , it won't cover any distance but will fall on almost the same spot from where it was projected.
- (v) **Height of release** : Increasing the height of release improves the horizontal distance an object can be projected *i.e.*, the greater the distance gained.
- (vi) **Spin** : Spin helps the projectile to maintain its course.

36. Define speed. Explain any two methods to develop it.

Ans. Speed is the ability to cover maximum distance within minimum time.

Methods to Develop/Improve Speed

- (i) **Acceleration runs** : Acceleration runs are used to attain maximum speed from a stationary position. During an acceleration run, a sportsperson has to run a specific distance and as soon as the athlete starts, he/she tries to reach their maximum speed at the earliest and finishes the specified distance as early as possible. These runs are repeated with sufficient rest between the runs.
- (ii) **Pace runs** : Pace runs are characterized by running the set distance at a uniform speed. This means that the athlete runs the course of the race at a steady and definite speed.

At the beginning of such races, the speed should not be too high, but it should be maintained throughout the race. For this, the athlete should run at a maximum steady speed for a distance 10-20% more than the actual racing distance. Repetitions for pace run training are fixed as per the athlete's fitness level with complete recovery in between repetitions.

37. Suggest any five strategies to make physical activities accessible for children with special needs.

Ans. Strategies to make Physical Activities accessible for Children with Special Needs

- (i) **Communication** :
 - Advance information about activity, space, resource person should be communicated clearly.
 - Instructional strategies such as- verbal and visual should be used for performing various types of physical activities.
 - Teachers should also use visuals or social story about the activity.
 - Instruction must be provided in simple words and sentences and in low tone.
 - Communication board or communication book can also be used.
- (ii) **Space** :
 - For CWSN, space should be approachable according to the physical disability.
 - The area for the physical activity should be limited, disturbance free (noise, heat, cold, texture of floor, audience etc.) and preferably an indoor space.

- All boundaries including starting point, finishing point, sitting area should be marked clearly.
- Children suffering from autism should be provided specific area as they need some time to relax.

(iii) Equipments :

- CWSN should be provided with appropriate equipments and trained professionals.
- If possible, CWSN should be provided with modified devices and sophisticated equipments, such as–battery operated wheelchairs, etc.

(iv) Graded Activities :

- Initial stage activities of CWSN should be simple and based on a single action.
- There should be a gradual move from non-locomotor to locomotor activities.
- Teacher's body action (demonstration) and videos should be used to make them learn fundamental motor skills before practising it.
- The activities should be practised and performed with progressive count, dramatically with rhymes, songs so CWSN can enjoy the activities.

(v) Social Strategies :

- A CWSN must be allowed to choose a sport she/he enjoys so that he/she remains motivated.
- CWSN should be encouraged to watch others before performing themselves.
- Teacher should act as a mediator for CWSN to interact with other members of group.
- Each person should be greeted before the session and each lesson should end with positive feedback.

(vi) Psychological Strategies :

- Initially, children with disabilities need a lot of motivation to participate in physical activities.
- Try to influence the attitude of CWSN to encourage them to participate in physical activities.
- Once CWSN experience improvement in their physical attributes, they will have positive attitude towards sports.
- It is better to let the child initially participate within his/her own disability group.
- CWSN should be encouraged to make strong peer relationships, this will help them to be self-motivated and enjoy themselves more.

Premier Test Paper-2
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

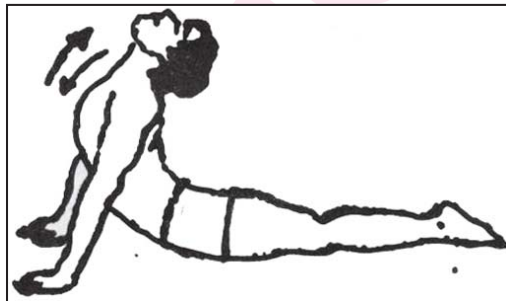
General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Long Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A

(All Questions are compulsory)

1. Identify the Asana :



- (a) Bhujangasana (b) Halasana (c) Vajrasana (d) Dhanurasana

Ans. (a) Bhujangasana

2. Traits like sadness, mood swings and emotional instability are related with _____.

- (a) Extroversion (b) Agreeableness (c) Conscientiousness (d) Neuroticism

Ans. (d) Neuroticism

3. Which of the following is NOT the factor affecting projectile trajectory?

- (a) Gravity (b) Angle of Release (c) Buoyant Force (d) Air Resistance

Ans. (c) Buoyant Force

4. Which of the following factors, does NOT determine flexibility?

- (a) Joint Structure (b) Previous Injury (c) Efficiency of Lungs (d) Age and Gender

Ans. (c) Efficiency of Lungs

5. Fartlek Training is used to develop _____.

- (a) Endurance (b) Strength (c) Flexibility (d) Speed

Ans. (a) Endurance

6. Which type of coordinative ability is required in games like judo and wrestling?

- (a) Orientation ability
- (b) Coupling ability
- (c) Adaptation ability
- (d) Differentiation ability

Ans. (b) Coupling ability

7. The ability to tolerate higher concentration of _____ can help in improving endurance performance.

- (a) Lactic acid
- (b) Hydrochloric acid
- (c) Acetic acid
- (d) Sulphuric acid

Ans. (a) Lactic acid

8. Centre of Gravity is the average location of an object's _____.

- (a) Weight
- (b) Force
- (c) Resistance
- (d) Velocity

Ans. (a) Weight

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

Assertion (A) : Aggression is part of human behaviour and is necessary for an individual to live and struggle for higher achievements.

Reason (R) : Aggression is inevitable and inseparable in sport activities.

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

- (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.

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

10. Role of water in human body is to _____.

- (a) Regulate body temperature
- (b) Give energy
- (c) Repair cell
- (d) Protect from disease

Ans. (a) Regulate body temperature

11. Which of the following are water soluble vitamins?

- (a) Vitamin D and K
- (b) Vitamin B and C
- (c) Vitamin A and E
- (d) Vitamin A and C

Ans. (a) Vitamin D and K

12. Which of the following asana is NOT used to cure Asthma ?

- (a) Tadasana
- (b) Dhanurasana
- (c) Parvatasana
- (d) Bhujangasana

Ans. (c) Parvatasana

13. How many total matches will be played in a knock-out fixture of 19 teams?

- (a) 18
- (b) 17
- (c) 20
- (d) 16

Ans. (a) 18

14. Knock-out tournament is also known as _____.

- (a) Elimination tournament
- (b) Round-robin tournament
- (c) League tournament
- (d) Challenge tournament

Ans. (a) Elimination tournament

15. First Deaflympic Games was organized in the year _____.

- (a) 1896
- (b) 1960
- (c) 1924
- (d) 1951

Ans. (c) 1924

16. Match the following :

List-I

- I. Knock Knee/Genu Valgum
- II. Kyphosis
- III. Lordosis
- IV. Bow legs

List-II

- 1. Increase exaggeration of backward curve
- 2. Wide gap between the knees when standing with feet together
- 3. Knees touch each other in normal standing position.
- 4. Inward curvature of the spine

Choose the correct option from the following :

- | | I | II | III | IV |
|-----|---|----|-----|----|
| (a) | 3 | 1 | 4 | 2 |
| (b) | 1 | 3 | 4 | 2 |
| (c) | 4 | 2 | 1 | 3 |
| (d) | 2 | 3 | 4 | 1 |

Ans. (a) 3 1 4 2

17. Match the following :

List-I

- I. Plate Tapping Test
- II. Push-up
- III. Partial Curl up
- IV. Modified push up

List-II

- 1. Upper body strength endurance of boys
- 2. Speed and coordination of limb movement
- 3. Upper body strength endurance of girls
- 4. Abdominal strength

Choose the correct option from the following :

- | | I | II | III | IV |
|-----|---|----|-----|----|
| (a) | 2 | 1 | 4 | 3 |
| (b) | 2 | 3 | 1 | 4 |
| (c) | 1 | 3 | 2 | 4 |
| (d) | 2 | 3 | 4 | 1 |

Ans. (a) 2 1 4 3

18. Ménarche is related to :

- | | |
|---|--|
| (a) Ending of menstrual period in women | (b) Beginning of menstrual period in women |
| (c) Time of pregnancy | (d) Spinal deformity |

Ans. (b) Beginning of menstrual period in women

Section-B
(Attempt any 5 questions)

19. Briefly explain any two factors determining endurance.

Ans. Factors Determining Endurance :

- (i) **Percentage of slow and fast twitch fibres :** Slow twitch fibres produce comparatively less force but they work for long periods of time and that is why, they are better suited for endurance activities. Slow twitch fibre percentage must be higher in comparison with fast twitch fibres to give better performance in endurance related activities such as– cycling, swimming, long distance runs running or marathon, etc.
- (ii) **Aerobic capacity :** Aerobic capacity refers to the maximum amount of oxygen our body can use at one time during an intense exercise. An athlete with better aerobic capacity can indulge in physical activities for a longer period of time and will feel fatigued much later as compared to others.

- (iii) **Lactic acid tolerance** : Higher content of lactic acid in the body makes a person feel tired and fatigued. An athlete with better tolerance towards lactic acid can continue to do physical activities with desired intensity and for longer duration of time.

20. What do you understand by "Goal Setting" ?

Ans. Goal setting refers to the process of systematic planning to achieve a specific goal/aim.

21. Define Flexibility and list down its types.

Ans. Flexibility refers to, the range of motion around a joint.

Types of Flexibility : Generally, flexibility is divided into following categories :

- (i) **Active flexibility** : Active flexibility is the ability of a joint to move in maximum range without any external help.
- (ii) **Passive flexibility** : Passive flexibility is the ability of a joint to move in maximum range with external help.
- (iii) **General flexibility** : General flexibility refers to the flexibility of all the critical joints of the body, such as– the shoulder, hip, and trunk.
- (iv) **Specific flexibility** : Specific flexibility refers to the ability to perform specific movements related to a specific sport.

22. Elucidate any four types of fractures.

- Ans. (i) Greenstick Fracture** : Greenstick fracture is a fracture in which a young, soft bone bends instead of break. Such fracture is rare in adults but very common in children, who still have high levels of calcium in their bones that make them flexible. Arms and legs are more susceptible to this type of fracture.
- (ii) Comminuted Fracture** : A comminuted fracture is a fracture in which a bone is broken, splinted, or crushed into number of pieces.
- (iii) Transverse Fracture** : It is a fracture in which there is a straight break across a bone at a right angle.
- (iv) Oblique Fracture** : Oblique fractures are slanted fractures, i.e., when the bone breaks diagonally.
- (v) Impacted Fracture** : An impacted fracture occurs when the broken ends of the bone are jammed together by the force of the injury. This condition is often seen in athletes and sportspersons.

23. What is BMI? Calculate BMI of a child whose weight is 72 kg and height 1.68 metre.

Ans. Body Mass Index (BMI) is a measure of body fat, based on height and weight of a person.

Calculation of body mass index–

$$\text{Body Mass Index} = \frac{\text{Weight in kg}}{\text{Height in (m)}^2} \text{ Or } \frac{\text{Weight}}{\text{Height} \times \text{Height}}$$

$$\text{Body Mass Index} = \frac{72}{1.68 \times 1.68} = \frac{72}{2.8224} = 25.51$$

24. Differentiate between Macro and Micro Nutrients.

Ans.

Micro Nutrients	Macro Nutrients
• Required in very minute quantities.	• Required in larger quantities.
• Prevents diseases.	• Provides energy.
• Deficiency results in Anemia, Goiter, Scurvy, etc.	• Deficiency results in Kwashiorkor, Marasmus, Malnutrition, etc.
• Vitamins, minerals and trace elements are considered as micro-nutrients.	• Carbohydrate, protein and fats are considered as macro-nutrients.

Section-C
(Attempt any 5 questions)

25. "Participation in physical activities is advantageous for children with special need." Briefly explain any six advantages.

Ans. Advantages of physical activities for children with special need.

(i) **Physical benefits :**

- Improved level of well-being and physical health.
- Helps to develop their gross motor and fine motor skills which improves their overall performance.
- Improvement in hand-eye coordination and flexibility.
- Improvement in muscle strength, endurance, and cardiovascular efficiency.
- Improved motor skills and enhanced physical health helps individuals to fight back against problems such as– obesity and other health complications.

(ii) **Mode of recreation and fun :** Participation in sports activities helps them overcome this obstacle and also providing them a chance to make friends.

(iii) **Improved emotional health :**

- Helps to overcome and control depression.
- Regular participation in physical activities improves mental health and wellbeing.
- Physical activities also improve general mood and wellness, which aids in empowering the lives of CWSN.

(iv) **Channelizing the surplus energy :** Regular participation in physical activities helps CWSN to direct their energy into constructive manner.

(v) **Psychological benefits :** While participating in physical activities CWSN get opportunity to interact and involve with other children. This interaction gives CWSN a sense of accomplishment and confidence.

(vi) **Healthy lifestyle :** Regular participation in sports and physical activities according to their limitations helps CWSN to avoid such lifestyle diseases such as obesity.

26. Write the functions of Vitamin-D and Vitamin-K and mention their sources.

Ans.

Nutrient	Important Functions	Sources
Vitamin-D	• Needed for proper absorption of calcium and phosphorus. • Deposition of calcium and phosphorus in bones.	Egg yolks, liver, fatty fish, fortified foods. When exposed to sunlight, the skin can make vitamin D.
Vitamin-K	• Helps in proper blood clotting. • Enhances bone strength and heart health. • Helps to facilitate energy production of the mitochondria.	Green leafy vegetables, cabbage and milk.

27. Briefly explain the functions of Directing and Controlling to organize sports event.

Ans. Functions of Directing :

- Supervision of subordinates, *i.e.*, to monitor the performance of one's subordinates and guide them.
- Communication, *i.e.*, instructing subordinates regarding what to do, how to do, and when to do.
- Motivation, *i.e.*, encourage subordinates to work for attainment of desired objectives.

Functions of Controlling :

- Setting performance standards.
- Measurement of actual performance.
- Comparison of actual performance with desired standards.
- Taking corrective actions as per requirement.

28. How can we enhance the sports performance with the help of self-talk and self-esteem? Explain.

Ans. Enhance sports performance with the help of self-talk

- Self-talk stimulates thoughts in such a way that a person starts to believe that he/she is competent and able to perform a task efficiently and effectively.
- Positive self-talk motivates a person to do more hard work with persistence, effort, and dedication to achieve a worthwhile goal.
- Effective use of mood words while self-talk can either create a desired mood or change an undesirable one as words are powerful motivators.
- Self-talk motivates the athlete to increase effort when it is needed to enhance performance.
- Self-talk helps an athlete to focus his/her centre your attention, drown out distractions, and increase the amount of effort he/she is giving into performance.

Enhance sports performance with the help of self-esteem

- Avoid negative self-talk
- Accept your flaws
- Practice self-care
- Stop comparing yourself to others
- Set realistic and manageable goals
- Exercise regularly

29. Elucidate any six effects of exercise on muscular system.

Ans. Some of the main effects of regular exercising are–

- Increase in blood supply** : During exercise, in order to match demand of fuel to muscle, the supply of blood increases in the whole body or, in the particular muscle group where activity is largely impacted.
- Increase in muscle temperature** : During exercises muscles contract to produce energy. During the process, a lot of heat energy is also generated which increases the temperature of muscles, and/or the body.
- Enhance muscle flexibility** : Due to increase in blood flow and rise in temperature, elasticity of muscles increases. Stretching and mobility exercises also increase muscular flexibility.
- Accumulation of lactate** : If muscles do not get required amount of oxygen, lactic acid accumulates in muscles which result in pain, and soreness in muscles. Exercise sheds off excess of lactic acid from the muscles.
- Muscle fibres become large** : During exercises muscle fibres get micro-tears in muscle fibres. When muscle fibres get repaired they become large and larger.
- Hypertrophy** : Regular exercise results in increase in thickness of muscle fibres along with increase in muscle size. This is known as 'muscle hypertrophy'.
- Increase in strength of ligaments and tendons** : Regular exercise helps to strengthen bones, ligaments, and tendons. This helps prevent injury and promotes performance.
- Increase in size and number of mitochondria** : Aerobic exercises lead to increase in size and numbers of mitochondria, and which take in more oxygen and produce more ATP and energy.

30. What do you understand by Round shoulders deformity? Suggest any four corrective measures for round shoulders.

Ans. Round shoulders is a postural deformity in which shoulders are bent forward from the ideal alignment, thereby giving a narrow curve to upper back.

Corrective measures for round shoulders

- Strengthening and stretching of muscles and trying to correct the imbalance of muscles by doing chest stretches is the most important measure to correct rounded shoulders.
- T-stretch, wall stretch, Handclasp stretch and planks, pull ups and reverse shoulder stretch also helps to correct round shoulders.
- Developing the habit of keeping the spine straight is also helpful in correcting rounded shoulders.
- Yoga asanas like Chakrasana, Dhanurasana, can be useful in correcting rounded shoulders.

Section-D (Attempt any 5 questions)

31.

1-2								
1-3	2-3							
1-4	2-4	3-4						
1-5	2-5	3-5	4-5					
1-6	2-6	3-6	4-6	5-6				
1-7	2-7	3-7	4-7	5-7	6-7			
1-8	2-8	3-8	4-8	5-8	6-8	7-8		
1-9	2-9	3-9	4-9	5-9	6-9	7-9	8-9	

On the basis of above fixture, answer the following questions :

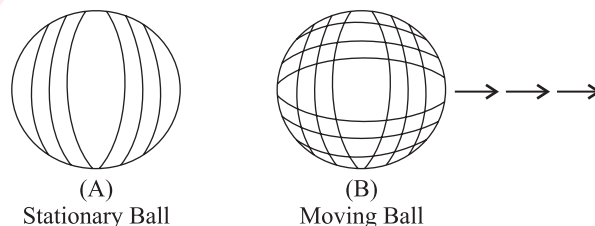
- Which method is shown in the picture to draw fixture in league tournament?
- What is the formula to calculate number of matches?
- In league or Round Robin Tournament winner will be decided on the basis of _____.
- If 7 teams participate in a league tournament, _____ number of matches will be played.

Ans.(a) Staircase Method

- $\frac{N(N-1)}{2}$ here 'N' refers to total number of teams participating in the tournament.
- Total points scored or total number of matches won by the team.
- If 7 teams are participating, then total number of matches to be played would be :

$$\text{Total number of matches} = \frac{n(n-1)}{2} = \frac{7(7-1)}{2} = \frac{42}{2} = 21 \text{ Matches}$$

32. Study the pictures given below :



Based on your study and your knowledge, answer the following questions :

- Which law of motion will be applied to initiate motion of the ball as depicted in the illustration (A)?

- (b) In illustration (B) which force is acting upon the ball to slow it down?
- (c) Which law of motion will determine the quality of bounce?
- (d) _____ of an object directly depends upon the mass of the object and net force applied on it.

Ans.(a) Newton's first law of motion, *i.e.* Law of Inertia

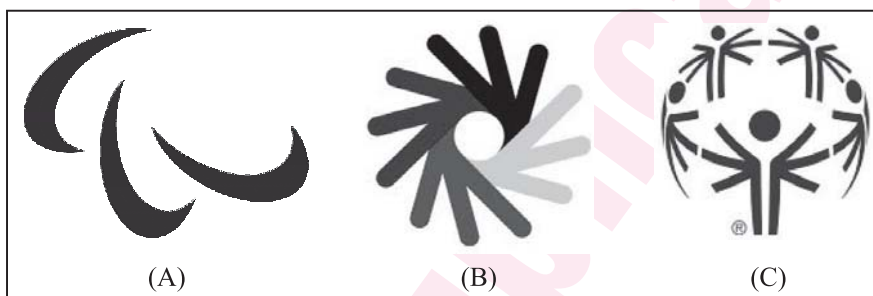
- (b) Friction
- (c) Law of Reaction/Action determines the quality of bounce. According this law the harder you bounce the ball on the ground the higher it will bounce back in the air.
- (d) Acceleration

OR

"When a cricket ball is moving with a certain velocity, the player has to apply retarding force to bring the ball at rest in his hands." Which Newton's Law is applied in this illustration?

Ans. Newton's second law of motion, *i.e.*, Law of Acceleration.

33. In relation to the pictures, answer the following questions :



- (a) Logo shown in picture _____ refers to Special Olympic.
- (b) Who was the founder of Special Olympic?
- (c) According to figure 'B', the hand shapes of 'OK', 'Good' and 'Great' Shriver that overlap each other in a circle, represent the original sign for _____.
- (d) How many countries participated in the first Paralympic Games in Rome (Italy) in 1960 ?

Ans.(a) Logo shown in picture C.

- (b) Eunice Kennedy Shriver.
- (c) Deaflympics.
- (d) 23 countries

OR

The moto of Paralympics is _____.

Ans. Spirit in motion.

Section-E
(Attempt any 3 questions)

34. List down any four asanas used for prevention of Hypertension. Explain the procedure and contraindication of any one of them with help of a line diagram.

Ans. Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, Uttan Mandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-shodhana pranayama, Sheetal pranayama are considered to be the best asanas to control and cure hypertension.

Procedure of Tadasana :

- (i) Stand with feet together or about 10 cm apart (for beginners), hands by the side of the thighs.
- (ii) Distribute weight equally on both the feet to keep the body steady.
- (iii) Raise arms over the head. Interlock the fingers and turn the palms upward.
- (iv) Place hands on top of the head.
- (v) Fix eyes at a point on the wall slightly above the level of the head. The eyes should remain fixed on this point throughout the asana.
- (vi) Inhale and stretch the arms, shoulders and chest upward.
- (vii) Raise heels, coming up onto the toes.
- (viii) Stretch whole body without losing balance or moving the feet.
- (ix) Hold the breath and the position for a few seconds.
- (x) Lower the heels while breathing out and bring hands to the top of the head. This is one round.

Contraindication of Tadasana : This asana should be avoided if a person is suffering from—migraine, diarrhoea, low or high blood pressure or neck and back injuries.



35. What is the purpose of Rikli and Jones fitness test? Explain the procedure of its any two test items in detail.

Ans. Purpose : Rikli and Jones fitness test is conducted to evaluate functional ability and monitor the physical fitness status of older people and to identify problems and work on the weakness.

Test Item-1 : Chair Stand Test for Lower Body Strength

Purpose : To determine lower body strength, particularly legs strength.

Objective : To complete maximum stands in 30 seconds.

Materials Required : A chair with a straight back and a stopwatch.

Procedure :

- Place the chair against the wall in such a way so that it gets stabilized.
- The subject then sits on the chair, back straight, arms crossed and feet firmly on the floor, shoulder width apart.
- On the command 'Go' the subject will stand up completely, then return back to the initial position. This will be counted as one stand. The individual has to complete maximum stands in 30 seconds.

Scoring : Total number of complete stands will be counted as the score. If the individual is in half way of the stand when the time gets over, then it will be counted as a full stand.

Test Item-2 : Arm Curl Test for Upper Body Strength

Purpose : To determine upper body strength.

Objective : To complete maximum arm curls in 30 seconds.

Equipments Required : A chair without arms; dumbbell for men-8 pounds (3.6kgs) and women-5 pounds (2.3kgs); stopwatch.

Procedure :

- Place the chair against the wall in such a way so that it gets stabilized.
- The subject then sits on the chair with back straight, feet on floor, holding dumbbell with dominant hand using handshake grip.
- On the command "Go" the individual flexes the elbow or curls the arm with full range of motion then returns back to its initial position.

- In the down position dumbbell will return to handshake grip.
- The individual can perform as many arm curls as possible in 30 seconds.

Scoring : Maximum number of correct arm curls in 30 second will be counted as the score.

36. Define strength and explain any two methods to develop it.

Ans. Strength is the force generated by muscle or group of muscles which ables a person to do physical work.

Methods for Improving Strength

- (i) **Isometric Exercises :** Isometric exercises are those exercises in which muscular tension is developed without any visible movement of muscles or any body part, while doing such exercises. Therefore, isometric exercises cannot be observed. In these exercises, work performed cannot be seen directly. *For example*, pushing a wall, while pushing a wall, work is done, *i.e.*, the force is being exerted, but the work done cannot be seen as the wall doesn't move a bit. These exercises involve muscles carrying out tension against the other group of muscles. As there is no change in the muscle length when such exercises are done, hence they are called "iso" metric.

Isometric exercises are useful in training where the gain in maximum strength of muscles is more important, as compared to gain in flexibility. Such exercises are useful for weightlifters, wrestlers, gymnasts and body builders etc.

- (ii) **Isotonic Exercises :** Isotonic exercises are those exercises in which muscular effort results in movement of an object on which force is applied. In simple words, those exercises in which movements can be seen directly are called isotonic exercises.

Isotonic exercises are performed to improve elastic strength or muscular flexibility and strength. Such exercises are considered to be the best method to develop strength.

- (iii) **Isokinetic Exercises :** Isokinetic exercise method was introduced by J.J. Perrine in 1968. Isokinetic exercises are a combination of isotonic and isometric contractions in which a particular type of muscle contraction called isokinetic contraction takes place. These exercises are performed on specially designed instruments. Such exercises are performed to develop both bulk and tone of muscles. Isokinetic exercises are performed by athletes who take part in sporting events like- rowing and swimming.

37. What is Friction ? Write the advantages and disadvantages of friction by giving suitable examples from sports.

Ans. Friction refers to the resistance to motion at the contact of two surfaces.

Advantages of Frictional Force in the Field of Sports

- **Cricket :** Cricket players, especially fielders, wear shoes that have a nails in the bottom. These special types of shoes help to increase the friction force and the players do not slip while running.
- **Badminton :** Badminton racket has a knot of clothing that increases the frictional force of the player's hand due to which the racket does not slip.
- **Basketball :** The frictional force between the playing court and the shoes gives the player a firm grip over the ground. During the game, players repeatedly wipe their shoes so that they do not slip.
- **Cycling :** Friction between the bicycle tyres and the road prevents the bicycle from sliding. Friction force present between the brakes and the wheels helps the player in reducing the speed of the bicycle.
- **Football :** In the game of football, frictional force helps in throwing away, kicking, catching or stopping the football. Apart from this, it also helps a player to run on the field or change the direction suddenly without slipping.
- **Gymnastics :** To increase the frictional force between rods and hands, gymnasts use powder so that their hands do not slip from the rod.
- **Running :** Friction between the player's shoes and the ground helps the player to run, stop and change direction without slipping on the track. If the friction force is less then a player might slip.

- **Athletics** : In athletics, the shoes (spikes) are designed to increase friction so that better speed can be generated. The shoes used for short-distance running events have spikes in the front position only. Whereas the long distance runner uses completely different shoes.
- **Javelin** : Friction between the hand and javelin allows the thrower to grip the javelin and friction between shoes and track helps them to generate a perfect ground reaction force for throwing the javelin in the right direction. Without friction, the javelin would just fall out of their hands.
- **Weightlifting** : In weightlifting, the weightlifters need more friction between their feet and the floor to prevent slipping while lifting heavy weights, for which they use specially designed shoes.

Disadvantages of Frictional Force in Sports

- **Bicycling** : During cycle racing the tires get heated up due to friction. Due to more heat, tires may burst and it may lead to serious accidents.
- **Weightlifting and gymnastics** : In weightlifting and gymnastics, the skin in the palm gets damaged due to friction and the athlete even may slip while performing the lift. Hence, gymnasts and weightlifters are advised to use powder on their palms and wear special shoes to maintain appropriate friction.
- **Pole-vault** : During Pole-Vault, a vaulter may lose grip on the pole if less friction is there between palms and pole. Hence, pole vaulters are advised to use adhesive on the palm to increase friction and perform correctly.
- **Affects movements** : Any time you want to move an object, friction can make the job more difficult, as movement is directly affected by mass and force applied and also on the surface condition.
- **Waste of energy** : More friction means more force to overcome it and more force means more energy. Thus, energy is wasted due to friction.
- **Cause injuries** : If a player slides/falls across the ground, he/she can get injured depending on the nature of frictional force.
- **Wear and tear** : Sporting equipment wear out with time due to friction. If, there were no friction, they would last forever.

Premier Test Paper-3
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Short Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A
(All Questions are compulsory)

1. Identify the Asana :



- (a) Pawanmuktasana (b) Sukhasana (c) Chakrasana (d) Gomukhasana

Ans. (a)

2. Reactive Aggression is also called _____.

- (a) Instrumental Aggression (b) Hostile Aggression
(c) Assertive Aggression (d) Both (a) and (b)

Ans. (b) Hostile Aggression

3. The friction force acts in a/an _____ motion of an object. direction to the direction of.

- (a) Opposite (b) Same (c) Downwards (d) Diagonal

Ans. (a) Opposite

4. The irregular tear-like wounds caused by some blunt trauma _____.

- (a) Laceration (b) Contusion (c) Abrasion (d) Incision

Ans. (a) Laceration

5. Given below are two statements, one of which is labelled as Assertion (A) and the other is labeled as Reason (R).

Assertion (A) : For improvement of performance in long distance running, continuous training is effective.

Reason (R) : Continuous method of training improves basic endurance.

Which one of the following statement is correct?

- (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

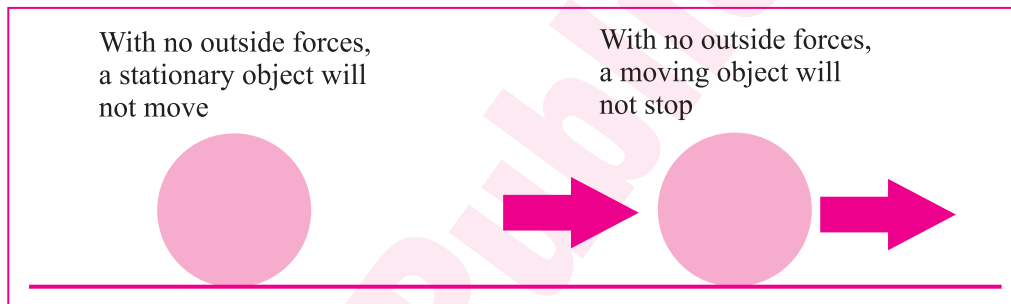
Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A)

6. What do you mean by iso and metric?

- (a) Iso means constant and metric means length
- (b) Iso means change and metric means size
- (c) Iso means constant and metric means velocity
- (d) Iso means size and metric means constant

Ans. (a) Iso means constant and metric means length

7. It is the amount of blood pumped out by each side of the heart (actually each ventricle) in 1 minute _____.



- (a) Blood pressure (b) Cardiac Output (c) Blood volume (d) Both (a) and (b)

Ans. (b) Cardiac Output

8. Newton's Third Law of Motion is also known as _____.

- (a) Law of Reaction (b) Law of Inertia (c) Resultant Force (d) Law of Effect

Ans. (a) Law of Reaction

9. Match List-I with List-II and select the correct answer from the code given below :

List-I

- 1. Extraversion
- 2. Conscientiousness
- 3. Agreeableness
- 4. Neuroticism

List-II

- (i) Enthusiasm
- (ii) Responsible
- (iii) Compassionate behavior
- (iv) Emotional Stability

Code :

- | | (i) | (ii) | (iii) | (iv) |
|-----|-----|------|-------|------|
| (a) | 1 | 2 | 3 | 4 |
| (b) | 4 | 3 | 2 | 1 |
| (c) | 3 | 4 | 2 | 1 |
| (d) | 2 | 3 | 4 | 1 |

Ans. (a) 1 2 3 4

10. Given below are two statements, one of which is labelled as Assertion (A) and the other is labeled as Reason (R).

Assertion (A) : Scurvy is caused due to the deficiency of Vitamin-C.

Reason (R) : The disease sets in when the diet does not include fresh vegetables and fruits for a long time.

Which one of the following statement is correct?

- (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

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

11. One gram of carbohydrate contains _____ calories.

- (a) 2
- (b) 3
- (c) 4
- (d) 5

Ans. (c) 4

12. Which gland is associated with Diabetes?

- (a) Endocrine glands
- (b) Pituitary
- (c) Pancreas
- (d) Hypothalamus

Ans. (c) Pancreas

13. What is the formula to determine number of matches in League fixture for even number of teams?

- (a) $N + \frac{1}{2}$
- (b)
- (c)
- (d)

Ans. (c)

14. Which of the following tournament helps save money?

- (a) Knock-out tournament
- (b) League tournament
- (c) Combination tournament
- (d) Round Robin tournament

Ans. (a) Knock-out tournament

15. School management needs to recognize the essential place of physical activity in the education of children with special needs.

Which of these is not one of the results of physical activities in children with special needs?

- (a) Improvement in confidence
- (b) Improvement in endurance
- (c) Increase in depression
- (d) Better hand-eye coordination

Ans. (c) Increase in depression

16. If the menstruation cycle does not begin at puberty, the condition is called _____.

- (a) Primary Amenorrhea
- (b) Secondary amenorrhea
- (c) Oligomenorrhea
- (d) Dysmenorrhea

Ans. (a) Primary Amenorrhea

17. Senior Citizen Fitness Test the range of age group is _____.

- (a) 60–94
- (b) 55–79
- (c) 65–95
- (d) 50–90

Ans. (a) 60–94

18. Kyphosis is also known as _____.

- (a) Hollow Back
- (b) Hunch Back
- (c) Curve Back
- (d) Both (a) and (b)

Ans. (b) Hunch Back

Section-B
(Attempt any 5 questions)

19. Point out physiological factor for strength.

Ans. Strength of a person depends on the following physiological factors :

(i) Percentage of slow and fast twitch fibres :

- Each muscle basically consists of two types of muscle fibres, *i.e.*, fast twitch fibres (white fibres) and slow twitch fibres (red fibres). Different sports require different amount of strength and according to that, mixture of the slow twitch fibre and fast twitch fibre is needed.
- The fast twitch fibres are capable to contract faster and therefore they can produce more force.
- Slow twitch fibres are capable of contracting for a longer duration rather than contracting faster.
- Fast twitch fibres can produce more strength. That is why in all the strength related sports where sudden burst of energy is required, high percentage of fast twitch fibre is required.
- In games like weightlifting, jumps, sprint or power, agility and strength dominating sports where force production is high, fatigue is quick, and fast twitch fibre percentage must be high in muscles.
- The percentage of fast twitch fibres and slow twitch fibres is genetically determined and cannot be changed through training.

(ii) Size of the muscles : It is a fact that, bigger and larger muscles produce more force. Muscle size can be increased with the help of different methods of strength training such as weight training etc.

(iii) Body weight : It's a well-known fact that the individuals who have more body weight are generally stronger than the individuals who have less body weight.

(iv) Number of motor units and intensity of nerve impulse : Every muscle is made up of number of motor units which act together to generate intensity in nerve impulse and produce force accordingly. More the number of motor units in the muscles, more will be the intensity of nerve impulse, hence, more strength will be produced.

(v) Age : Muscle strength declines with the age due to a decrease in muscle cross-sectional area and a decline in the number of contractile tissues within the muscle fibres.

20. Write short note on Goal setting.

Ans. Goal setting refers to the process of systematic planning to achieve a specific goal/aim. In other words– Goal setting is a mental training technique that is used to increase an individual's commitment towards achieving a specific standard of proficiency within a specified time. It can also be defined as a process of enhancing level of performance within a prescribed time period.

Various studies have proved that– goal setting is very effective in enhancing performance and productivity in every sphere of life. It enhances a person's self-efficacy and provides a base for instilling a task with intrinsic worth. While setting a goal, special attention is focused on– demands related to the task, intensity and amount of efforts required for the task, self-encouragement during adverse situations, develop strategies and problem solving to move toward goal achievement. Mental skills get enhanced when athletes focus on the right goals at the right time. In short– goal setting in sport is considered to be an effective method for improving sport performance.

21. Explain Isokinetic exercise with suitable examples.

Ans. Isokinetic exercises are a combination of isotonic and isometric contractions in which a particular type of muscle contraction called isokinetic contraction takes place. These exercises are performed on specially designed instruments. Such exercises are performed to develop both bulk and tone of muscles. Isokinetic exercises are performed by athletes who take part in sporting events like– rowing and swimming.

22. Write a key point on cardio respiratory factors determining fitness.

- Ans.** ○ The cardio-respiratory system is combination of respiratory and cardiovascular systems which jointly work to transport oxygen to the cells which provide energy to various systems in the body.
- During exercise, the demand for energy increases and to meet this demand, oxygen is required in appropriate volume.
 - Demand of energy depends on intensity, duration, and type of activity. Our respiratory and cardiovascular system response and work directly proportional to the demands of muscles for oxygen.
 - Maximal oxygen consumption (VO_2 Max), blood pressure, blood volume, oxygen diffusion and extraction, muscle and arterial blood flow etc. simultaneously varies as per the level of activity.

23. Explain the procedure and scoring of 600meter run/walk.

Ans. Procedure : The participants begin on signal, “ready, start”. As they cross the finish line, the elapsed time should be announced to the participants. Walking is permitted but the objective is to cover the distance in the shortest possible time.

Scoring : The total time taken to complete the distance between the command “Go” and when the student crosses the finish is recorded in minutes and seconds and is considered as the score of the student.

24. Explain the importance of fluid intake during a competition.

Ans. The main aim of fluid intake during a competition is to maintain water balance, control body temperature, sustain normal blood sugar levels and delay fatigue. Even slight dehydration brings in mental and physical fatigue and weakens the performance.

Section-C
(Attempt any 5 questions)

25. Explain any three strategies to Make Physical Activities Accessible for CWSN.

Ans. (i) Communication :

- Advance information about activity, space, resource person should be communicated clearly.
- Instructional strategies such as- verbal and visual should be used for performing various types of physical activities.
- Teachers should also use visuals or social story about the activity.
- Instruction must be provided in simple words and sentences and in low tone.
- Communication board or communication book can also be used.

(ii) Space :

- For CWSN, space should be approachable according to the physical disability.
- The area for the physical activity should be limited, disturbance free (noise, heat, cold, texture of floor, audience etc.) and preferably an indoor space.
- All boundaries including starting point, finishing point, sitting area should be marked clearly.
- Children suffering from autism should be provided specific area as they need some time to relax.

(iii) Equipment :

- CWSN should be provided with appropriate equipments and trained professionals.
- If possible, CWSN should be provided with modified devices and sophisticated equipments, such as-battery operated wheelchairs, etc.

26. What are the benefits of Non-Nutritive foods?

Ans. ○ Phytochemicals : Phytochemicals are believed to act as antioxidants and protect cells from damage that could lead to cancer. They are found in colourful vegetables and fruits.

- **Anthocyanins** : They have anti-inflammatory and anti-tumour properties.
- **Flavonoids/isoflavones** : They help in lowering the risk of osteoporosis, heart disease, breast cancer and symptoms of menopause.
- **Artificial sweeteners** : These are synthetic compounds that duplicate the taste of sugar, but contain less energy, and, therefore, are often added to diet foods and beverages. They maintain the desired taste, but reduce the caloric value.
- **Preservatives** : They slowdown microbial growth and are used in food and beverage products to prolong their shelf life.
- **Spices** : Various spices are used for flavouring, colouring or preserving food and also to hide other flavours. Spices have various uses, including medicinal, religious ritual, cosmetics or perfume production, or as a vegetable. *For example*, turmeric roots are also consumed as a vegetable and garlic as an antibiotic.
- **Coffee** : Coffee has a stimulating effect on humans because of its caffeine content.

27. What should be the role of technical and marketing committee while organizing the event?

Ans. (i) Technical Committee : Technical committee looks after all technical aspects related to the event, such as– Requisitions, selection and procurement of sports equipments and other related items; Conducting matches on time; Selection of officials such as– referees, umpires, judges, timekeepers etc.

(a) Pre Event Responsibilities : Before the event, technical committee has following responsibilities:

- To put forward a requisition, selection and purchase of sports and other related equipments.
- Send invitation to guests.
- Selection of officials and confirm their acknowledgement.
- Cleaning and layout of the fields.
- Arrangement of equipments and stationery.
- Preparation of fixtures, rules and regulation of the sports event.

(b) Responsibilities During the Event/Tournament : When the tournament is in progress, the technical committee is responsible for–

- Conducting matches as per schedule and on time.
- Ensure timely presence of the jury and other officials.
- Regular cleaning, maintenance and layout of the fields.
- Collection of score sheets and other related papers from officials.
- Preparation of merit lists.

(c) Post Event Responsibilities : Once the event is over, the technical committee is responsible for–

- Cleaning and layout of the fields.
- Maintenance of the field.
- Collecting and placing of all equipments back to the store.

(ii) Marketing Committee : The marketing committee is responsible for developing plans and strategies to popularise the event in order to generate more revenue, sponsorships, spectators and media coverage. Sponsorship are generated in terms of cash or kind by making media partners, food partners, drink partners etc. Marketing Committee also organises campaigns related to the event.

(a) Pre Event Responsibilities :

- Prepares a strategy to attract more sponsors, spectators and media coverage.
- Adopt various means and modes for the publicity of the event.
- Meet sponsors for branding related issues and media houses for proper coverage of the event.

(b) Responsibilities During the Event/Tournament :

- Issues regular press releases.
- Maintains a harmonious coordination with media personnels and sponsors.
- Arrangements for live telecast of the events and ceremonies.

(c) Post Event Responsibilities : Once the event is over, the marketing committee–

- Issues a press release.
- Arrange for a re-telecast of the event.

28. Differentiate between Introvert and Extrovert personality?

Ans.

Introvert	Extrovert
• Reserved (interested in their own self). • Self-aware and introspective. • Take pleasure in reading, writing. • Tend to shy away from public. • Think before acting.	• Highly socialized • Broad-minded • Highly expressive • Enjoy being centre of attention • Meet unknown people easily • Bold and outgoing • Optimistic and action oriented

29. Define Fracture and explain any four types of fracture.

Ans. A fracture is a break in a bone and is caused by a direct impact, such as a fall or a severe tackle.

Types of Fracture

- (i) **Greenstick Fracture :** Greenstick fracture is a fracture in which a young, soft bone bends instead of break. Such fracture is rare in adults but very common in children, who still have high levels of calcium in their bones that make them flexible. Arms and legs are more susceptible to this type of fracture.
- (ii) **Comminuted Fracture :** A comminuted fracture is a fracture in which a bone is broken, splinted, or crushed into number of pieces.
- (iii) **Transverse Fracture :** It is a fracture in which there is a straight break across a bone at a right angle.
- (iv) **Oblique Fracture :** Oblique fractures are slanted fractures, *i.e.*, when the bone breaks diagonally.
- (v) **Impacted Fracture :** An impacted fracture occurs when the broken ends of the bone are jammed together by the force of the injury. This condition is often seen in athletes and sportspersons.

30. Write in brief the corrective measures of Bow Leg, Knock Knee and Flat Foot.

Ans. (i) **Corrective Measures for Bow Legs**

- Walk for some distance on the inner edge of the feet.
- Walk by bending the toes inward.
- Perform ardhha-matsyendrasana, garudasana and ardhha-chakrasana.
- Use of braces and modified shoes.
- Sufficient intake of balanced diet.

(ii) **Corrective Measures for Flat Foot**

- Walking, jumping and standing on heels, toes and feet parallel to each other.
- Walking on sloping, sandy or uneven surfaces.
- Picking up objects with toes, flexing the toes around a point of resistance, such as a strap or band placed under the ball of the foot.

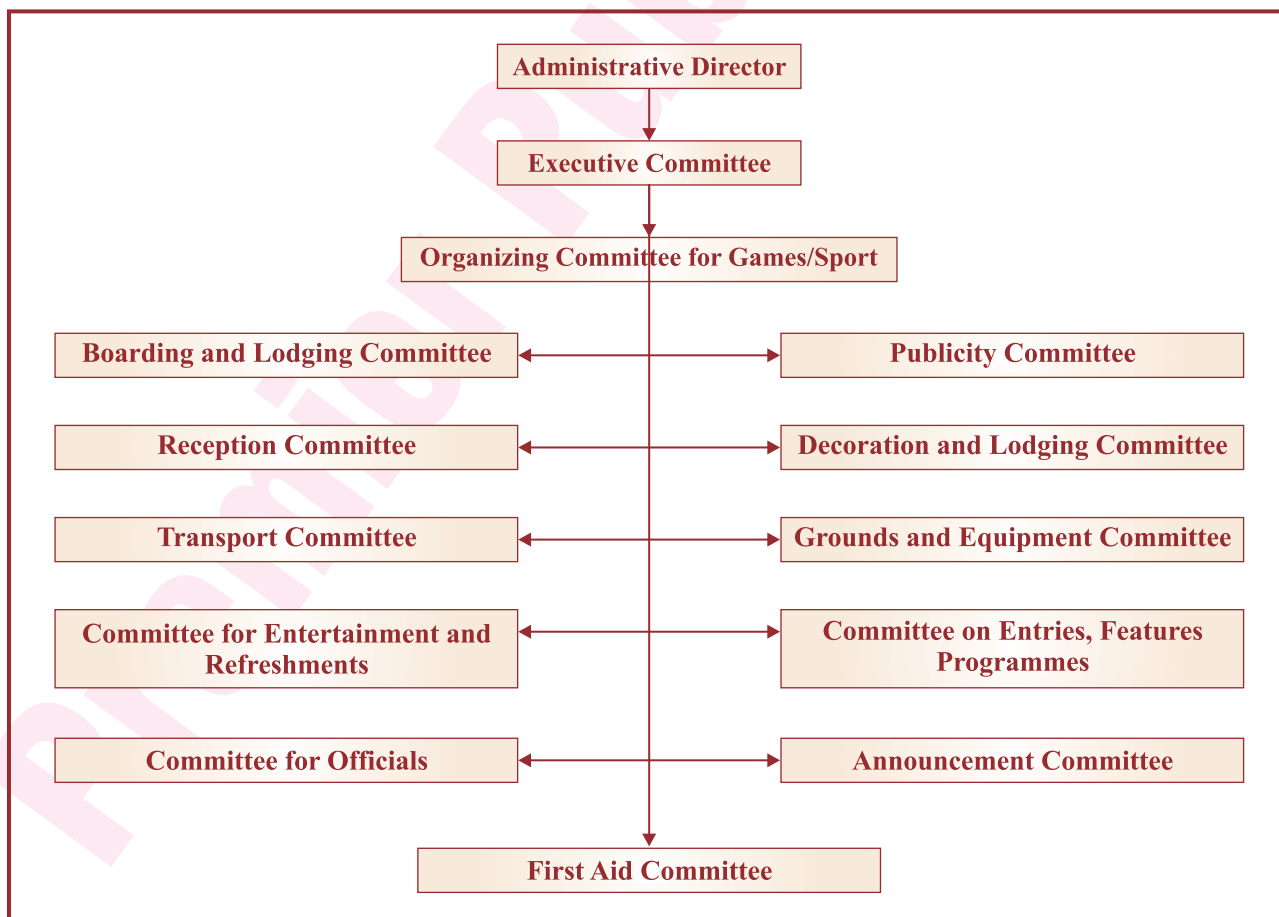
- Backward and forward hopping with knees bent.
- Yoga asanas like Adhomukhsavasana performed in Surya Namaskar, Vajrasana and other therapeutic massages are also helpful in developing the arch.
- Writing numbers in the sand with the toes will also help in developing the arch.

(iii) Corrective Measures for Knock-Knees

- Exercises like horse-riding.
- Keeping the pillow between the knees.
- Standing erect for some time.
- Performing padmasana and gomukhasana regularly can help strengthen muscles of the legs and realign the knees.
- Strengthening exercises, such as leg raises while seated or lying down.
- Use of walking callipers is also a big help at pre-puberty stage.
- Excessive body weight can be a contributing factor to Genu valgum as extra weight puts additional strain on the legs and knees, and this can cause knock-knees to worsen. A person who is overweight should lose weight through a combination of diet and exercise.

Section-D
(Attempt any 5 questions)

31. While organizing sports events for the Annual Sports Day, Arjun and Ravi being the captain and vice-captain of sports, formed various committees as shown below.



On the basis of above given picture answer the following questions:

- (a) The members of this _____ committee are responsible for welcoming guests and spectators
- (b) The _____ Committee responsible for liaison with Print media.
- (c) Purchase of sports equipment is a work of the _____ Committee.
- (d) Publication of rules and regulations should be done _____

OR

- (d) To prepare a proper score sheet for record is _____ responsibility.

- Ans.** (a) Logistic Committee
(b) Marketing Committee
(c) Finance Committee
(d) Pre Event

OR

- (d) During the event

- 32. During her gymnastics practice, Zoya was finding it difficult to maintain her balance on the balancing beam. Her coach tried to explain to her about basic principles of equilibrium.**



According to the principles of equilibrium Centre of gravity plays a very important role.

- (a) The nearer the Center of Gravity to the Center of the base of support the more will be the _____
- (b) The position of the centre of gravity changes depending upon the _____.
- (c) The sum of all the vertical and horizontal forces acting on the body must be _____
- (d) Centre of gravity is the average location of an object's _____

OR

- (d) When the sum of force acting upon the object and sum of the movement acting upon the body is both equal to zero then the body is said to be in _____

- Ans.** (a) Stability
(b) Position of the intersection of force
(c) Zero
(d) Weight

OR

- (d) Equilibrium

- 33. School management needs to recognize the essential place of physical activity in the education of children with special needs. In order to develop lifelong habits for fitness and to provide them with**

many opportunities of socialization, schools need to understand that physical education is not a secondary subject but it is just as important as other skills.



On the basis of above given picture answer the following questions:

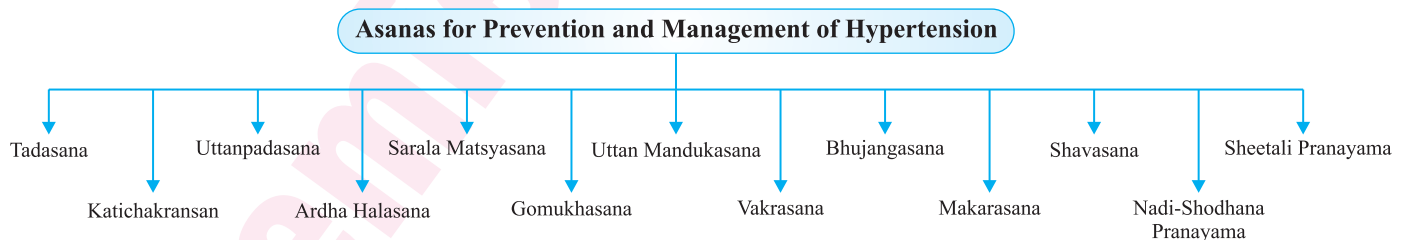
- Development of Gross Motor and Fine Motor skills are benefits which are part of _____.
- Graded activities as strategy for effective inclusive physical education program includes _____
- _____ for activities should be disturbance free (noise, heat, cold, texture floor, audience etc.)
- The activities that include running, jumping, hopping, galloping, rolling, leaping and dodging, horizontal jump, slide are _____.

- Ans.** (a) Physical Benefits
 (b) Simple to Complex
 (c) Space
 (d) Locomotor Activities

Section-E (Attempt any 3 questions)

34. Discuss the asanas helpful for a person suffering from Hypertension. Write down the procedure and contraindications of Sarala Matsyasana in detail.

Ans. Following asanas are considered to be the best to control, manage and cure hypertension :



Procedure of Saral Matsyasana

- Lie flat on the back. With the support of your hands keep the top of your head on the mat.
- Neck, upper back and shoulders will be lifted from the ground.
- Relax your hands at the side of your body, breathe normally and keep your toes stretched out.
- Hold the position for 30 seconds, then relax.

Contraindications : People with cervical spondylitis and frozen shoulder should avoid practicing this asana.

35. Make a table of test items listed under fitness test by SAI (Age group 9-18 years). Explain the Procedure and Scoring of 50 Meters Run and Partial Curl Up.

Ans. Test items listed under fitness test by SAI for the age group 9-18 years

- | | |
|-------------------------------------|--|
| (i) Body Composition (BMI) | (ii) 50 Meters Standing Start |
| (iii) 600 Meters Run/Walk | (iv) Sit and Reach Test |
| (v) Partial Curl-Up Test– Abdominal | (vi) Push-ups for Boys and Modified Push-ups for Girls |

I. 50 Meters Run

Procedure :

- In this test two lines are marked on the floor 60 mts. apart. One line is used as a starting line and the other as the finish line.
- The test involves running a single sprint of 50 meters with maximum speed in minimum time.
- Participant/student start from a stationary standing position (hands cannot touch the ground) with one foot in front of the other. The front foot must be behind the starting line. Once the subject is ready, the starter gives the instructions “set” then “go”
- It is preferable to administer this test of two pupils at a time.

Scoring : The score is the amount of time between the starter’s signal and the instant the student crosses the finish line. Time take to cover 50 mts. distance is expressed in seconds. The score is recorded in seconds to the nearest 10th of a second.

II. Partial Curl-Up Test– Abdominal

Procedure :

- The subject lies on a cushioned, flat, clean surface with knees flexed at 90 degrees, with hands straight on the sides (palms facing downwards) closer to the ground, parallel to the body.
- The subject raises the trunk in a smooth motion, keeping the arms in position, curling up the desired amount (at least 6 inches above/along the ground towards the parallel strip).
- The trunk is lowered back to the floor so that the shoulder blades or upper back touch the floor.

Scoring : Record the maximum number of Curl-ups in a certain time period (30 seconds).

36. Define Flexibility. Explain its types and any two methods to develop flexibility.

Ans. Flexibility refers to, the range of motion around a joint.

Types of Flexibility

- (i) **Active flexibility :** Active flexibility is the ability of a joint to move in maximum range without any external help, *for example*, stretching exercise by an athlete himself. Active flexibility is always less than passive flexibility and depends on muscular strength and coordination. Active flexibility is further classified into the following two categories:
 - (a) **Static flexibility :** It is the flexibility which is required to perform movements while an individual is in a stationary position such as– while sitting, toe touching, sideward bending, etc.
 - (b) **Dynamic flexibility :** It is the flexibility which is required to perform movements while an individual is in a moving position such as– gymnastics, diving, etc.
- (ii) **Passive flexibility :** Passive flexibility is the ability of a joint to move in maximum range with external help, *for example*, stretching with the help of a partner. Passive flexibility is always more than active flexibility and is primarily determined by the joint structure and stretch ability of the muscles and ligaments. Passive flexibility is the base of operational flexibility.
- (iii) **General flexibility :** General flexibility refers to the flexibility of all the critical joints of the body, such as– the shoulder, hip, and trunk. This type of flexibility is not used for any sporting event or physical activity.

- (iv) **Specific flexibility** : Specific flexibility refers to the ability to perform specific movements related to a specific sport.

Methods to Improve Flexibility

- (i) **Slow stretching** : It is the first and foremost way to improve flexibility by slowly stretching the muscles around the joint. Stretching should be slow and without any jerky movements.
- (ii) **Slow stretch and hold** : In this stage stretching is to hold for about 6-8 seconds at the maximum stretching point. This method is considered to be the most commonly used method in the field of games and sports.
- (iii) **Static stretching method** : Static stretching is an extremely popular and effective technique to improve flexibility. In static stretching, the muscle is stretched to its maximum limit and then released gradually to return to its original position. The duration of stretching varies according to the requirement/ purpose of the individual. For cooling down, 10 seconds can be applied, and for flexibility stretches up to 30 seconds are performed. This method is considered better and safer as there are fewer chances of getting injured.
- (iv) **Dynamic stretching method** : Dynamic stretching consists of controlled leg and arm swings that gradually reaches the limit of range of motion. Dynamic stretching exercises are suitable for players who are involved in sports that require dynamic movements. The movement initially should be started at almost half of the speed for couple of times and then can be done with maximum speed. This type of stretching helps in extending muscles, enhances range of movement and improves balance and coordination.

37. With the help of suitable examples, discuss the application of Newton's Laws of Motion in sports.

Ans. According to Newton's Law of Motion– The rate of change of movement is proportional to the resultant force and takes place in the direction of the force applied.

- When a force acts on an object, the acceleration of the object it produces is directly proportional to the magnitude of the force applied and that too in the same direction of the force and inversely proportional to the mass of the object.
- The more mass the thing has, the more net force has to be used to move it.

Application of Newton's Law of Motion in Sports

- A volley ball player pushes the ball slowly for a drop whereas hits the ball hard for a smash. Thus drop is slow as there is less force whereas smash is very fast as there is greater force involved.
- In a shot-put event, a player who exerts more force and tosses the shot-put at correct angle has greater displacement of shot-put, whereas a player who exerts less force has lesser displacement of shot-put.
- In soccer, a players will require more force to kick the ball high and faster. This law of motion is fundamental in soccer as one can assess the force needed to give a pass or kick the ball to the net without missing.
- When a ball is kicked with force, it tends to travel in the direction of the line of action of the applied force. The greater the amount of force applied, the greater the speed the ball has. If a player improves leg strength through training while maintaining the same body mass, they will have an increased ability to accelerate the body using the legs, resulting in better agility and speed.

Premier Test Paper-4
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Long Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A
(All Questions are compulsory)

1. Which of the following pranayama is helpful to reduce obesity?

- (a) Kapalbhati Pranayama
- (b) Anulom Vilom Pranayama
- (c) Suryabhedan Pranayama
- (d) Sitili Pranayama

Ans. (c) Suryabhedan Pranayama

2. International Paralympic Committee was formed in _____.

- (a) 1985
- (b) 2003
- (c) 1989
- (d) 2001

Ans. (c) 1989

3. Which of the following is NOT the cause of Food Intolerance?

- (a) Toxins formation due to food poisoning
- (b) Absence of an enzyme
- (c) Roughage
- (d) Gluten

Ans. (c) Roughage

4. Given below are two statements labelled Assertion (A) and Reason (R).

Assertion (A) : The Basal Metabolic Rate (BMR) is the number of calories needed to maintain body function at resting condition.

Reason (R) : A person who does not engage in any work, still requires energy for the functioning of their internal organs.

In the context of the above two statements, which of the following option is correct?

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
- (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- (c) Assertion (A) is true, but Reason (R) is false.
- (d) Assertion (A) is false, but Reason (R) is true.

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

5. Given below are functions of Sports Management in List-I and their Explanation in List-II :

List-I

I. Planning

II. Controlling

III. Directing

IV. Staffing

List-II

1. It is a function of guiding, inspiring and instructing people to accomplish organizational goals.

2. Preparing a layout for the future course of action.

3. Ensuring that proper talent is serving that specific job.

4. Establishing performance standards, measuring actual performance and comparing them for irregularities.

Match the items of List-I with List-II and choose the correct option from the following :

- | | I | II | III | IV |
|-----|---|----|-----|----|
| (a) | 1 | 2 | 3 | 4 |
| (b) | 1 | 2 | 4 | 3 |
| (c) | 2 | 4 | 1 | 3 |
| (d) | 2 | 4 | 3 | 1 |

Ans. (c) 2 4 1 3

List-I

I. Planning

II. Controlling

III. Directing

IV. Staffing

List-II

2. Preparing a layout for the future course of action.

4. Establishing performance standards, measuring actual performance and comparing them for irregularities.

1. It is a function of guiding, inspiring and instructing people to accomplish organizational goals.

3. Ensuring that proper talent is serving that specific job.

6. Given below are two statements labelled Assertion (A) and Reason (R).

Assertion (A) : In a normal standing posture, both knees touch each other, while there is a gap of 3-4 inches between the ankles.

Reason (R) : It occurs due to Genu Valgum and it can develop due to an injury or infection in the knee or leg, rickets, severe lack of vitamin D and calcium, obesity, or arthritis in the knee.

In the context of the above two statements, which one of the following option is correct?

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
- (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- (c) Assertion (A) is true, but Reason (R) is false.
- (d) Assertion (A) is false, but Reason (R) is true.

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

7. In which of the following fitness component an athlete gives better performance, if he/she has more slow twitch fibre in comparison to fast twitch fibres.

- (a) Speed
- (b) Strength
- (c) Endurance
- (d) Flexibility

Ans. (c) Endurance

8. Identify the factor which decreases equilibrium.

- (a) Larger base
- (b) Greater weight
- (c) Lower centre of gravity
- (d) Higher centre of gravity

Ans. (d) Higher centre of gravity

9. Identify the characteristic of introvert personality.

- (a) Meet unknown people easily
- (b) Self-centered
- (c) Highly socialized
- (d) Expressive nature

Ans. (b) Self-centered

10. Jump for smash in volleyball is an example of ____.

- (a) Static strength
- (b) Maximum strength
- (c) Explosive strength
- (d) Strength endurance

Ans. (c) Explosive strength

11. Which of the following is the objective of Intramural competition?

- (a) To achieve high performance
- (b) To provide career opportunities
- (c) To promote health and fitness
- (d) To promote cultural and economic development

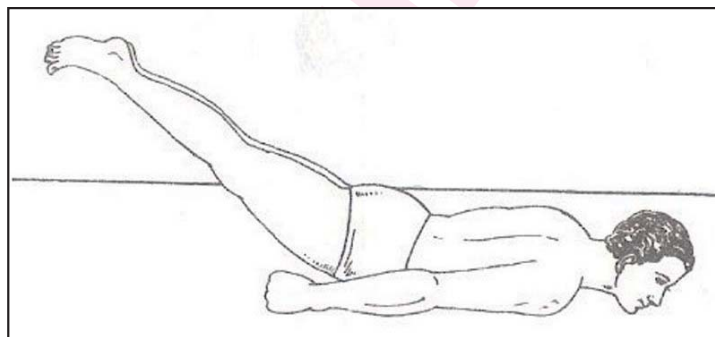
Ans. (c) To promote health and fitness

12. According to W.H.O. (World Health Organisation) recommendations, children of ____ should be engaged in physical activities for 180 minutes and should have 10-13 hours of good quality sleep per day.

- (a) Less than 1 year
- (b) 1-2 year
- (c) 3-4 year
- (d) 5-17 year

Ans. (c) 3-4 year

13. Identify the asana shown in the picture given below and choose the correct option from the following:



- (a) Bhujangasana
- (b) Katichakrasana
- (c) Pawanmuktasana
- (d) Shalabhasana

Ans. (d) Shalabhasana

14. Which is the main governing body responsible for the organization of Deaflympics?

- (a) World Deaf Champions Committee
- (b) National Sports Federation
- (c) International Co-ordinating Committee for Disabled Sports.
- (d) International Committee of Sports for the Deaf

Ans. (d) International Committee of Sports for the Deaf

15. Body Mass Index is one of the common way of assessing healthy body weight. Which of the following BMI range is considered for healthy weight?

- (a) 25.0-29.0
- (b) 30.0-34.9
- (c) 18.5-24.9
- (d) 35.0-39.9

Ans. (c) 18.5-24.9

16. In partial curl up test the difference between two parallel lines is _____.

- (a) 8 inches (b) 4 inches (c) 6 inches (d) 10 inches

Ans. (c) 6 inches

17. Goal setting is a _____ approach, under motivational technique.

- (a) Cognitive (b) Pedagogical (c) Social (d) Facilitation

Ans. (a) Cognitive

18. Which functional fitness component of senior citizens is determined in the test shown below?



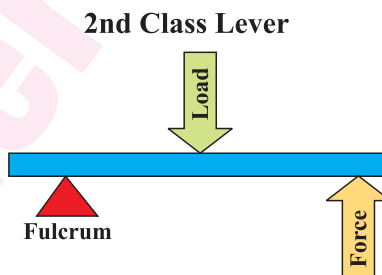
- (a) Physical Mobility (b) Upper Body Flexibility
(c) Lower Body Flexibility (d) Upper Body Strength

Ans. (c) Lower Body Flexibility

Section-B
(Attempt any 5 questions)

19. Describe the second class lever with suitable example from sports.

Ans. Second Class lever: It has the load resistance between the fulcrum and the force. So, there is always mechanical advantage as force arm is always greater than resistance arm.



Example: Full body push up/Wheel barrow/ wall climbing/ taking off for a jump/pushing against starting blocks in sprints
(or any other relevant example)

20. Enlist four test items of Johnson - Metheny Test of Motor Educability.

- Ans. (i) Front Roll (ii) Back Roll (iii) Jumping Half-Turns (iv) Jumping Full-Turns

21. Write a short note on 'Menarche'.

Ans. Menarche (first menstruation) is considered to be the point of sexual maturity for girls. During menarche, female reproduction system matures and the body prepares itself for potential pregnancy. It is associated with the development of secondary sexual characteristics. The average age of menarche in girls ranges from 8 to 15 years old.

22. Enlist four asanas those help to control asthma.

Ans. Asanas which help to control asthma : Tadasana, Urdhwahastottansana, Uttan Mandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana, Matsyasana, Anuloma-Viloma.

23. Write any two advantages of physical activities for Children With Special Needs (CWSN).

Ans. Advantages of physical activities for children with special needs :

(i) Physical benefits

- Improved level of well-being and physical health.
- Helps to develop their gross motor and fine motor skills which improves their overall performance.

(ii) Mode of recreation and fun : Generally, CWSN don't engage much in social activities, recreation and fun. Participation in sports activities helps them overcome this obstacle and also providing them a chance to make friends.

(iii) Improved emotional health :

- Helps to overcome and control depression.
- Regular participation in physical activities improves mental health and wellbeing.
- Physical activities also improve general mood and wellness, which aids in empowering the lives of CWSN.

(iv) Channelizing the surplus energy : Regular participation in physical activities helps CWSN to direct their energy into constructive manner. *For example*– children suffering from ADHD display hyperactivity which, if appropriately directed, can bear positive cognitive benefits & constructive behaviour.

(v) Psychological benefits : Regular participation in sports and physical activities improves general mood and wellness in CWSN by improving their self-esteem, social awareness, and self-confidence. Physical activities also play a vital role in managing anxiety, stress and depression. While participating in physical activities CWSN get opportunity to interact and involve with other children. This interaction gives CWSN a sense of accomplishment and confidence.

(vi) Healthy lifestyle : CWSN are more prone to obesity and other lifestyle related diseases due to being sedentary because of their disability. Regular participation in sports and physical activities according to their limitations helps CWSN to avoid such lifestyle diseases.

(vii) Behavioural benefits : Participation in sports and physical activities on regular basis results in cognitive improvements due to development of various skills that they may not develop in a traditional classroom setting.

Participating in sports and games according to specially modified rules and regulations helps the CWSN to learn self-regulation and enhance their decision-making skills. Specially modified games and sports also help CWSN to learn skills such as– teamwork, problem solving abilities, increased attention span, and focus on task-based behaviour.

(ix) Increased independence : Participation in physical activities and sports enables CWSN to attain greater independence and freedom due to improved daily life skills. Increased physical strength and energy that come from regular exercise allows persons with disability to do more daily tasks without assistance.

24. Mention any two types of friction by giving suitable examples from sports.

Ans. Types of Friction

- **Static friction :** Weightlifting, Holding the parallel bar
- **Sliding friction :** Icehockey, ice skating,
- **Rolling friction :** Rolling of the football, cricket ball, tennis ball
- **Air friction :** Riding a bicycle, skydiving
- **Water friction :** Swimming in water, diving

Section-C
(Attempt any 5 questions)

25. Mr. X performs the Harvard step test for 275 seconds and his pulse in 1-1.5 min after exercise was 100. Write the formula of fitness index score for Harvard step test and calculate the fitness index score of Mr. X.

Ans. Duration of exercise = 275 seconds

Pulse count of 1–1.5 min after exercise = 100

Formula :

$$\text{Fitness Index (Short form)} = \frac{100 \times \text{Test Duration in Seconds}}{5.5 \times \text{Pulse Count Between 1 and 1.5 Minutes}}$$

$$\text{Fitness index score : } \frac{275 \times 100}{5.1 \times 100} = \frac{27500}{550} = 50$$

26. Comment on the concept of 'Talent Identification' and 'Talent Development'.

Ans. • Talent Identification : Talent identification in sports refers to the search for young athletes who have the potential to become an elite athlete in the future.

- **Talent Development :** Talent development refers to the whole process through which abilities and skills of a young talented player is further nurtured and enhanced.

27. Explain the responsibilities of any two committees during sports competition.

Ans. • Responsibilities of Technical Committee During the Event/Tournament : When the tournament is in progress, the technical committee is responsible for–

- (a) Conducting matches as per schedule and on time.
- (b) Ensure timely presence of the jury and other officials.
- (c) Regular cleaning, maintenance and layout of the fields.
- (d) Collection of score sheets and other related papers from officials.
- (e) Preparation of merit lists.

- **Responsibilities of Logistics Committee During the Event/Tournament :** While the event is in progress, logistics committee is responsible for–

- (a) Conducting the opening and closing ceremonies.
- (b) Transportation of players/participants from place of stay to the field and back.
- (c) Checking registration, distribution of refreshment, management of spectators.
- (d) Handing over of medals and certificates.

28. Explain the procedure and benefits of any one asana for back pain.

Ans. Asanas beneficial for back pain : Tadasana, Urdhawahastottansana, Ardh-chakrasana, Ushtrasana, Vakrasana, Sarala Matsayasana, Bhujangasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama.

Ardh-Chakrasana : The name Ardh-Chakrasana is derived from the Sanskrit ardha, meaning “half,” chakra, meaning “wheel,” and asana, meaning “pose.” Therefore, Ardh-Chakrasana means half-wheel postures. It is a simpler version of chakrasana (wheel pose).

Procedure

- (i) Stand straight and bring your hands together in a clasped position.
- (ii) Raise and rotate your hands above the shoulders.

- (iii) Slowly bend the upper part of your body along with the hands, as far as possible.
- (iv) Remain in this position for some time according to capacity.
- (v) Then bring back slowly to the standing position with hands on your side.

Benefits

- This asana strengthens the back and abdominal muscles.
- Tones the organs in the abdomen including the digestive, excretory and reproductive organs.
- Provides relief from back problems and postural defects.
- Opens the chest and strengthens the arms and shoulder muscles.
- Prepares beginners for the more difficult full wheel pose or Chakrasana.

29. Write short note on Female Athlete Triad.

Ans. Participation in sports and physical activities provides a lot of benefits such as– longer and better quality of life, reduced risks of a variety of diseases and many psychological and emotional benefits.

However, participation in sports is not without certain health risks. For regular participation in sports athletes have to take a balanced diet since these demand high levels of energy and a good quantity of dietary intake. Such pressures put the athlete's health at risk and leads to Female Athlete Triad.

In the recent past, the terms to describe Female Athlete Triad were revised. The new terms to indicate problems are–

- (i) **Low Bone Mineral Density– BMD (Osteoporosis) :** Low bone mineral density, also termed as osteoporosis can be defined as a disease which is marked by increased bone fragility, disturbance in bone structure due to low bone mineral density (BMD). Low BMD is generally caused due to improper diet and amenorrhoea. Due to low level of oestrogen and progesterone in female athletes, their bones become weaker and lose minerals.
- (ii) **Amenorrhoea :** Amenorrhoea is the medical term used for the absence of menstrual period for 3 months or more. Amenorrhoea is a menstrual disorder or illness due to which girls of 18 years and above either never began menstruating or there is an absence of menstruation for three months or more in women with a history of normal menstrual cycle.
- (iii) **Eating Disorders :** Eating disorder, also known as 'gross disturbance in eating behaviour' is one such mental disorder which can occur in anyone i.e., men, women, rich, poor, young, old and even in a person from any cultural background. A person suffering from eating disorder has disturbed eating behaviour i.e., eating either too much or too little along with extreme concerns about his/her body shape, weight and body image.

Types of Eating Disorders

- (a) **Anorexia Nervosa :** Anorexia nervosa is an eating disorder in which a person suffering from it tries to reduce his/her body weight abnormally. They control calorie-intake by vomiting after eating or by misusing laxatives, diet aids and diuretics. They also try to lose weight by exercising excessively. Anorexia nervosa usually begins during the teenage and is more common in females.
- (b) **Bulimia** Bulimia is an eating disorder in which the patient consumes a large quantity of food within a short period and then adopts unhealthy ways such as– vomiting, taking laxatives, weight loss supplements, diuretics, excessive exercises etc. to cut down calories.

30. Describe any three physiological changes due to ageing.

Ans. Physiological changes due to ageing :

- (i) **Impact on muscular strength :** Due to ageing, concentric strength of most muscle groups declines slowly at first and then more rapidly after middle age. Eccentric strength also declines but at a slower rate as compared to concentric strength.

- (ii) **Impact on neural functions :** A nearly 40% decline in the number of spinal cord axons and a 10% decline in nerve conduction velocity reflects the cumulative effects of ageing on central nervous system functioning. Ageing most adversely affects the time required to detect a stimulus and process the information to produce the response.
- (iii) **Impact on endocrine system :** As a person grows in age he/she experiences thyroid dysfunction due to lowered release of the thyroid-stimulating hormone thyrotropin.
- (iv) **Impact on pulmonary function :** As a person grows in age his/her pulmonary functions get affected. This leads to deterioration in pulmonary ventilation and gas exchanges which with passage of time negatively affects the functioning of the lungs.
- (v) **Impact on cardiovascular function :** Maximum cardiac output decreases with age due to lower maximum heart rate. Blood flow capacity in muscle mass also decreases.
- (vi) **Impact on body composition :** After 60 years of age, total body mass decreases despite increasing body fat.
- (vii) **Impact on bone mass :** As a person grows in age, he/she losses of bone mass as a result the skeleton demineralizes and becomes so porous that they can get break even with a small jerk. This condition is known as Osteoporosis. It is a major problem with ageing.

SECTION-D
(Internal choices available)

31. A survey in an inclusive school setup found the discrepancies between the participation of normal and special child during annual sports meet. Study the table given below carefully–

S.No.	Event	Normal Child (150)	Special Child (10)
1.	100 Mtr.	40	5
2.	400 Mtr.	25	2
3.	Long Jump	20	0
4.	High Jump	15	1
5.	Relay Race	8	4

Based on the above study and your knowledge, answer the following questions :

- (a) As per the above table, in _____ event, there is no participation of Special Child.
- (b) Participation of students with disabilities in regular physical education classes is known as _____.
- (c) Enlist any two strategies to make physical activities accessible for children with special needs.
- (d) Motto of Special Olympic is _____.

Ans. (a) Long jump

(b) Inclusion/ Adaptive Physical Education.

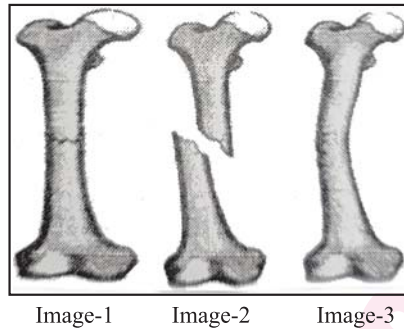
(c) Strategies :

- To Create Specific Environment
- To assess physical and mental ability
- To assess the interest of child
- Plan for different strategies for instruction
- Modified Rules
- Use of modified equipment

- Plan activity as per need
- Plan for implementation from easy to difficult
- Extra Care or Concern for safety
- Plan for additional support of parents and trained assistants

(d) "Let me win. But if I cannot win, let me be brave in the attempt." (OR) "Joy and Happiness for all the children of the world."

32. Study the pictures given below :

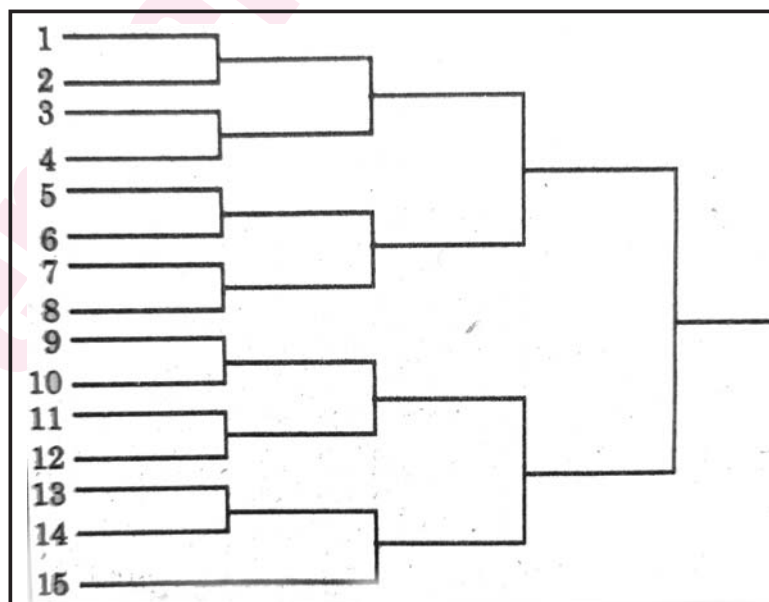


Based on the above study and your knowledge, answer the following questions :

- Which type of fracture you see in image-1?
- When a bone breaks diagonally as shown in image-2, it is known as _____.
- _____ fracture occurs when the broken ends of the bones are jammed together by the force of the injury.
- In which type of fracture bone is broken, splintered, or crushed into number of pieces?

Ans. (a) Transverse fracture in image-1
 (b) Oblique fracture in image-2
 (c) Impacted fracture
 (d) Comminuted fracture

33. Study the fixture given below :



On the basis of the above study and your knowledge, answer the following questions :

- (a) According to the above fixture total number of rounds will be _____.
- (b) As shown in the fixture if the winner team plays least number of matches, then which number of team is the winner?
- (c) What is the formula for calculating number of matches in a knockout tournament?
- (d) If 19 teams are participating in a knockout tournament, then how many byes will be given to draw a knockout fixture?

OR

- (d) What is the formula for calculating total number of byes in a knockout tournament?

Ans. (a) Number of rounds : $2 \times 2 \times 2 \times 2 = 2^4 = 4$ rounds.

- (b) Team No. 15, as it got bye in the 1st round.
- (c) $N - 1$, formula is used for calculating total number of matches to be played in a knockout tournament, where 'N' is the total numbers of teams participating.
- (d) If 19 teams are participating in a knockout tournament, then 6 byes in the upper half and 7 byes in the lower half will be given to draw a knockout fixture.

OR

- (d) Formula for calculating total number of byes in a knockout tournament

No. of byes = (Next higher power of 2 – Number of teams)

Section-E

(Attempt any 3 questions)

34. What do you understand by Aggression in sports? Explain any 2 types of Aggression by giving suitable examples from sports.

Ans. Aggression refers to a behaviour that is hostile and violates other people's rights. In other words—Aggression refers to a range of behaviour by an individual that can result in both physical and psychological harm to one self, others or objects in environment.

Types of Aggression

(i) Hostile Aggression :

- An aggression is said to be hostile when the primary intention of the behaviour is to harm the other player *i.e.*, violent and angry behaviour. Thus, it is also sometimes known as reactive aggression.
- Hostile Aggression refers to violent attitudes or actions that are associated with anger and a desire to dominate a situation or player.
- This type of aggression could be verbal, non-verbal (physical) or both.
- This type of aggression is committed in response to a possible threat or insult. This aggression is expressed by anger, and an urge to see the opponent suffer.
- It is an unplanned, momentary, impulsive, and fueled by intense emotion or desire to achieve a goal.
- **Example :** A boxer who punches the opponent below the belt with the primary aim of injuring him because he is losing or his opponent used abusive words or angered him with better skills.

(ii) Instrumental Aggression :

- An aggression is said to be instrumental when the aggression is being used just as an instrument to gain advantage or win and not because of anger or enmity.

- Such an aggression is adopted to attain some goals like– winning, getting money, prestige or gaining any other advantage.
- An instrumental aggression does consist of an aggressive intent to harm an opponent physically or psychologically without necessarily being angry.
- Instrumental aggression is a behaviour directed at the target as a means to an end.
- **Example** : Elbowing and injuring a player to gain a competitive advantage, or late tackling to stop an opponent from scoring a goal.

(iii) Assertive Behaviour :

- Aggression is said to be assertive behaviour when a player uses the oral methods to draw attention of others and disturb the concentration of the opponent player. This type of aggression is generally seen as a positive form of expression.
- Assertive behaviour is all about standing up for self and moral values in an unthreatening manner, while aggression puts others down.
- Assertive behaviour has its roots in respect for the other individual.
- Aggression also is often counter-productive, while assertive behaviour leads to a more positive resolution.
- **Example** : A bowler often uses stimulating words to distract the attention of a set batsman and break his concentration.

35. What is Balanced Diet? What is the significance of pre and post competition meals for an athlete? Explain.

Ans. A balanced diet can be defined as a diet which contains different types of food items in balanced quantity so that the nutritional requirements of the body are met adequately and a small provision of nutrients is made to withstand the period of leanness i.e., when adequate food or a particular nutrient is not consumed.

Importance of pre competition meals for an athlete

- Pre-exercise or pre-event meal is to increase glycogen levels to maintain energy supply and proper hydration.
- Pre-exercise or pre-event meal controls hunger, fatigue, weakness, light-headedness which could affect the sports performance.
- Pre-exercise meal also provide a comfortable gastrointestinal state for sports performance.

Importance of post competition meals for an athlete

- Post-training/competition meal helps to recovery the best body state to play or to train the next day and reduce the chances of injury.

36. What do you understand by projectile trajectory? Explain the factors affecting projectile trajectory in sports.

Ans. The path taken by a projectile is called its **trajectory**. All projectiles when thrown/released into the air follows a curved or parabolic path due to gravitational force acting on it, this path is called **projectile trajectory or parabola**.

Factors that affect projectile trajectory:

- Angle of projection** : When it is 45 degree, maximum horizontal distance is achieved.
- Initial velocity** : The horizontal range depends on initial velocity. Greater the initial velocity applied on the projectile during release, greater horizontal distance is achieved.
- Gravity** : It is the force of attraction exerted by the earth. The greater the weight of an object, the greater is the influence of gravity upon it. Gravitational pull stops the upward movement of an object resulting into decreased height of projectile.

- (iv) **Air resistance** : Surface area, speed, surface of object and mass of object all have an impact on air resistance.
- (v) **Spin** : It changes the path of projectile. The amount and direction of spin directly affects the distance that projectile travels because the air pressure acts on the ball. *(Or any other relevant point)*

37. What is Endurance? Explain any two types of Endurance on the basis of duration of the activity with suitable examples from sports.

Ans. Endurance is the ability of the body to sustain a physical activity for longer duration of time.

Types of endurance on the basis of duration of activity:

- (i) **Speed endurance** : Speed endurance is the ability to resist fatigue caused due to intense activities lasting upto 45 seconds. 400 mts. sprint is the most suitable example of speed endurance. Speed endurance of a player mainly dependent upon his/her power and capacity of energy production.
- (ii) **Short term endurance** : Short term endurance is the ability to resist fatigue caused due to sporting activities lasting from about 45 seconds to 2 minutes. This endurance mainly depends on strength and speed endurance. Endurance needed for 800 mts. race is the most suitable example of short term endurance.
- (iii) **Middle term endurance** : Middle term endurance is the ability to resist fatigue caused due to sporting activities lasting from 2 to 11 minutes. To a limited extent, it also depends on strength and speed endurance. Endurance needed for 1500 mts. race and steeple chase race is the most suitable example of middle term endurance.
- (iv) **Long term endurance** : Long term endurance is the ability to resist fatigue caused due to sporting activities which last for more than 11 minutes. 5000 mts., 10,000 mts., cross country and marathon races require such type of endurance.

Premier Test Paper-5
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Short Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A
(All Questions are compulsory)

1. How many total matches will be played in a knock out fixture of 19 teams.

- (a) 18 (b) 17 (c) 20 (d) 16

Ans. (a) 18

2. Given below are the two statements labeled Assertion (A) and Reason (R). Read the statements and choose the appropriate option from the options given below :

Assertion (A) : The knock-out tournament is an elimination tournament

Reason (R) : In knock-out tournament, winner of each match advances in the tournament and the loser gets eliminated.

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

- (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

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

3. Match the following :

List-I

- I. Knock Knee
- II. Kyphosis
- III. Lordosis
- IV. Bow legs

List-II

- 1. Increase exaggeration of backward curve
- 2. Wide gap between the knees when standing with feet together
- 3. Knees touch each other in normal standing position
- 4. Inward curvature of the spine

- (a) I-3, II-1, III-4, IV-2 (b) I-1, II-3, III-4, IV-2 (c) I-4, II-2, III-1, IV-3 (d) I-2, II-3, III-4, IV-1

Ans. (a) I-3, II-1, III-4, IV-2

4. For developing muscles, which nutrient should be increase in diet.

- (a) Vitamins (b) Protein (c) Minerals (d) Carbohydrates

Ans. (b) Protein

5. Identify the asana :



- (a) Paschimottanasana (b) Halasana (c) Vajrasana (d) Dhanurasana

Ans. (b) Halasana

6. Which asana is pose like cobra?

- (a) Bhujangasana (b) Dhanurasana
(c) Vajrasana (d) Ardhamatsyendrasana

Ans. (a) Bhujangasana

7. Deaflympics Games was first organized in the year _____.

- (a) 1896 (b) 1960 (c) 1924 (d) 1951

Ans. (c) 1924

8. Menarche is defined as the :

- (a) Ending of menstrual period of women (b) Beginning of menstrual period in women
(c) Time of pregnancy (d) Missing of menstrual cycle

Ans. (b) Beginning of menstrual period in women

9. Which of the following are fat soluble vitamins.

- (a) Vitamin D and K (b) Vitamin B and C
(c) Vitamin A and E (d) Both option (a) and (c)

Ans. (d) Both option (a) and (c)

10. Match the following :

List-I

- I. Plate Tapping Test
II. Push-up
III. Partial Curl-up
IV. Modified push-up

- (a) I-2, II-1, III-4, IV-3
(c) I-1, II-3, III-2, IV-4

Ans. (a) I-2, II-1, III-4, IV-3

List-II

1. Upper body strength boys
2. Reaction time
3. Upper body strength girls
4. Abdominal strength

- (b) I-2, II-3, III-1, IV-4
(d) I-2, II-3, III-4, IV-1

11. Which of the following is a physiological factor determining flexibility?

- (a) Bone density (b) Joint structure (c) Cardiac output (d) Tidal Volume

Ans. (b) Joint structure

12. The ability to tolerate higher concentration of _____ Can help in improving endurance performance.

- (a) Lactic acid (b) Hydrochloric acid (c) Acetic acid (d) Sulphuric acid

Ans. (a) Lactic acid

13. If a ball is hit and it is stop by gravitational force, this is an example of which Law of Motion.

- (a) Law of Inertia (b) Law of acceleration
(c) Law of action and reaction (d) Both (a) and (b)

Ans. (a) Law of Inertia

14. In which of the following sport friction plays the least important role.

- (a) Car race (b) Football (c) Ice skating (d) Hockey

Ans. (c) Ice skating

15. Instrumental aggression is related to :

- (a) Accepting defeat (b) Achieving goal
(c) Only performance (d) Hurting someone to gain something

Ans. (b) Achieving goal

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

Assertion (A) : Aggression is part of human behavior and is necessary for an individual to live and struggle for higher achievements

Reason (R) : Aggression is inevitable and inseparable in sport activities

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

- (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.

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

17. Which of these is a type of endurance?

- (a) Static (b) Specific (c) Dynamic (d) Relative

Ans. (b) Specific

18. Which type of coordinative ability is required in game like judo and wrestling.

- (a) Orientation ability (b) Coupling ability (c) Adaptation ability (d) Differentiation ability

Ans. (c) Adaptation ability

Section-B
(Attempt any 5 questions)

19. Enlist different types of postural deformities.

Ans. Different types of postural deformities :

- (a) Kyphosis (b) Lordosis (c) Scoliosis (d) Knock-Knee
(e) Flat Foot (f) Bow legs (any four)

20. How we can say that protein is an essential component of diet?

Ans. Protein is essential component of diet because protein is known as building block of life and it increase the strength of muscle fibers, repair and maintenance of body tissue and also connected with immune mechanism of the body.

21. Mention the test performed on 9 to 18 yrs. of age group in SAI Khelo India fitness test and explain any one?

Ans. Following tests performed on 9 to 18 yrs. of age group in SAI Khelo India fitness test

- (a) Body Mass Index (BMI)
- (b) 50 mt. Standing Start
- (c) 600 Meter Run/Walk
- (d) Sit and Reach Test
- (e) Partial Curl-up
- (f) Push Ups for Boys, Modified Push Ups for Girls

50 Meters Standing Start

Purpose : Purpose of this test is to determine the acceleration and speed of a student.

Equipments Required : Measuring tape or marked track, stopwatch, cone markers, flat and clear surface of at least 60 metres.

Procedure :

- (i) In this test two lines are marked on the floor 60 mts. apart. One line is used as a starting line and the other as the finish line.
- (ii) The test involves running a single sprint of 50 meters with maximum speed in minimum time.
- (iii) Participant/student start from a stationary standing position (hands cannot touch the ground) with one foot in front of the other. The front foot must be behind the starting line. Once the subject is ready, the starter gives the instructions "set" then "go"
- (iv) It is preferable to administer this test of two pupils at a time.

Scoring : The score is the amount of time between the starter's signal and the instant the student crosses the finish line. Time take to cover 50 mts. distance is expressed in seconds. The score is recorded in seconds to the nearest 10th of a second.

22. List down the types of bone injuries.

- Ans.**
- | | |
|--------------------------|--------------------------|
| (a) Stress fracture | (b) Green stick fracture |
| (c) Comminuted fracture. | (d) Transverse Fracture |
| (e) Impacted fractures | |

23. What do you understand by the term goal setting?

Ans. Goal setting refers to the process of systematic planning to achieve a specific goal/aim. It is a mental training technique that is used to increase an individual's commitment towards achieving a specific standard of proficiency within a specified time. It can also be defined as a process of enhancing level of performance within a prescribed time period.

24. Define Flexibility and list down its type.

Ans. Flexibility refers to, the range of motion around a joint.

Type of Flexibility

- | | |
|-----------------------|------------------------|
| • Active flexibility | • Passive flexibility |
| • General flexibility | • Specific flexibility |

Section-C
(Attempt any 5 questions)

25. Specify the purpose of specific sports programme organised for community services.

- Ans.**
- These days it is very common that specific sports programmes are organised to make people aware regarding particular cause or any particular issue.
 - These programmes are not related to competitions only, but it has special reason.
 - They create awareness related to a disease like AIDS, Swine Flu, collecting funds for special cause like flood, earth quakes etc.

26. What are the health problem face by a woman due to female athlete triad in its sports and athletic performance.

Ans. The female athlete triad is a problem face by a women consist of Eating Disorder, Osteoporosis and Amenorrhea. The following problem are faced by a woman due to the female athlete triad in sports performance :

- | | |
|----------------------------|--------------------------|
| • Increased risk of injury | • Feeling tired |
| • Shortness of breath | • Stomach inflammation |
| • Muscle weakness | • Weak bones |
| • Hormonal imbalance | • Psychological effects. |

27. Write in detail the aims and objectives of Paralympic games.

Ans. The Paralympic games are a multi – sports event for athletes with physical, mental and sensorial disabilities. This includes mobility, disabilities, amputees, visual disabilities. The main objective of Paralympics are as follows :

- (a) Promote Para sport worldwide, without unlawful discrimination on the grounds of disability, race, skin colour, national, ethnic or social origin, age, sex, gender, sexual orientation, language, political or other opinion, religion or other beliefs, circumstances of birth, or other unlawful ground.
- (b) Support and encourage educational and cultural activities and exchanges that contribute to the development and promotion of the Paralympic Movement, enhance awareness of disability, and drive social inclusion.

28. Differentiate between nutritive and non-nutritive components of a diet on the basis of their functions. 3

Ans.

Nutritive Component	Non-Nutritive Component
• Nutritive components of food are those elements that provide a considerable quantity of energy to the system, such as protein, carbohydrates and fats, all of which are essential to the body.	• Non-nutritive components of the diet are those components that do not have any nutritional value but are nonetheless necessary for the body in tiny quantities.
• Provide Energy	• Provide flavour and texture.
• Support growth and repair	• Acts as food addictive.
• Regulate metabolism	• Provide antioxidant.

29. With the help of suitable sports example explain the application of Newtons third law in sports.

Ans. Newton's third law states that– for every action, there is an equal and opposite reaction.

Example : In swimming, Newton's third law is evident in the propulsion generated by a swimmer's arm strokes against the water. When a swimmer pulls their arm through the water with force (action), the water exerts an equal and opposite force backward on the swimmer's hand (reaction). This reaction force propels the swimmer forward through the water.

30. How we can enhance the performance with the help of self-talk and self-esteem.

Ans. Self-talk and self-esteem play significant roles in enhancing sports performance. Motivational self-talks are necessary and productive. It boosts performance by helping you to build confidence, enhance your belief in your ability to perform. It also athletes maintain a positive mindset, enhance their confidence, and improve their performance.

Self-esteem is also crucial in sports performance. It helps in taking effective decision, Educated anxiety and stress. Individuals with high self-esteem are better equipped to bounce back from setbacks and failures.

Section-D (Attempt any 5 questions)

31.



(i) Choose the function of boarding committee–

- (a) To take teams to the venue of match
- (b) To provide them meals
- (c) To take care of their stay
- (d) To arrange opening ceremony

(ii) What is the work of ceremony committee?

- (a) To take teams to the venue of match
- (b) To provide them meals
- (c) To take care of their stay
- (d) To arrange opening ceremony

(iii) Ground and equipment committee should not perform–

- (a) To arrange teams match venues
- (b) To provide them meals
- (c) To take care of proper officiating
- (d) To make fixtures

(iv) Why committees are required?

- (a) To organize the event in perfect manner
- (b) To distribute the work
- (c) To make the best use of resources
- (d) All of the above

- Ans.** (i) (c) To take care of their stay
(ii) (d) To arrange opening ceremony
(iii) (b) To provide them meals
(iv) (d) All of the above

32.



(i) The first paralympics was organised in–

- (a) 1960 (b) 1970 (c) 1965 (d) 1985

(ii) Special education is a branch of education that deals with–

- (a) Educating children in special schools
(b) Instructions designing for students with special needs
(c) To provide opportunity of special education
(d) More than one of the above

(iii) Why is it called the Paralympics?

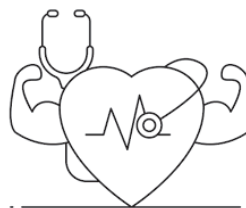
- (a) The first competition was held in Paraguay
(b) It was originally for paramilitary soldiers injured in WW2
(c) The event runs parallel with the Olympics
(d) It's an event for paraplegics

(iv) What is the motto of the Paralympic Games?

- (a) Spirit in motion (b) Citius, Altius, Fortius
(c) Faster, Higher, Stronger (d) Diversity, Equality, Inclusion

- Ans. (i) (a) 1960
(ii) (b) Instructions designing for students with special needs
(iii) (c) The event runs parallel with the Olympics
(iv) (a) Spirit in motion

33.



(i) What is the primary effect of exercise on cardio respiratory system.

- (a) Decreased heart rate (b) Increased stroke volume
(c) Decreased lung capacity (d) Decreased blood pressure

(ii) What is stroke volume?

- (a) The volume of blood ejected by the heart per minute
(b) The volume of blood ejected by the heart per beat

- (c) The volume of blood in the ventricles at the end of diastole
- (d) The volume of blood pumped by the heart during exercise

(iii) Cardiac output is–

- (a) The volume of blood ejected by the heart per minute
- (b) The volume of blood ejected by the heart per beat
- (c) The volume of blood in the ventricles at the end of diastole
- (d) The volume of blood pumped by the heart during exercise

(iv) Blood pressure is–

- (a) The volume of blood ejected by the heart per minute
- (b) The force exerted by blood against the walls of arteries
- (c) The rate of blood flow through the veins
- (d) The amount of oxygen carried by red blood cells

Ans. (i) (a) Decreased heart rate

(ii) (b) The volume of blood ejected by the heart per beat

(iii) (a) The volume of blood ejected by the heart per minute

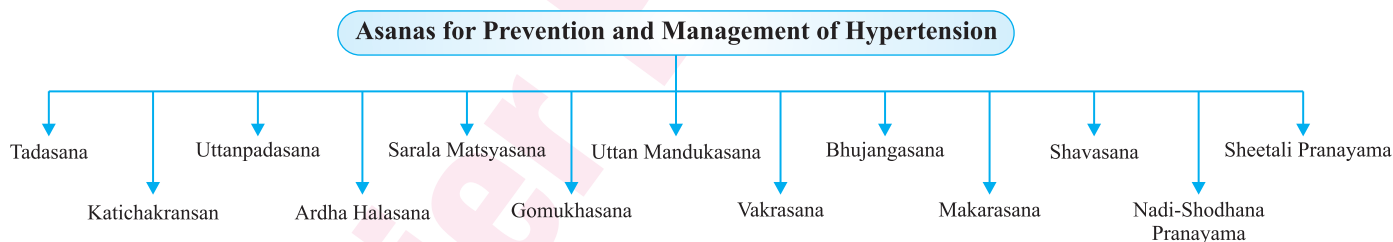
(iv) (b) The force exerted by blood against the walls of arteries

Section-E

(Attempt any 3 questions)

34. List down any four asanas used for prevention of Hypertension. Explain the procedure, benefits and contraindicate of any one of them with help of a stick diagram.

Ans. Asana for the prevention of hypertension :



Tadasana : Tadasana is a traditional posture. The final position of this asana resembles like a palm tree which stands erect and straight. Therefore, one should be straight and erect while doing this asana.

Procedure

- (i) Stand with feet together or about 10 cm apart (for beginners), hands by the side of the thighs.
- (ii) Distribute weight equally on both the feet to keep the body steady.
- (iii) Raise arms over the head. Interlock the fingers and turn the palms upward.
- (iv) Place hands on top of the head.
- (v) Fix eyes at a point on the wall slightly above the level of the head. The eyes should remain fixed on this point throughout the asana.
- (vi) Inhale and stretch the arms, shoulders and chest upward.
- (vii) Raise heels, coming up onto the toes.
- (viii) Stretch whole body without losing balance or moving the feet.

- (ix) Hold the breath and the position for a few seconds.
- (x) Lower the heels while breathing out and bring hands to the top of the head. This is one round.

Benefits of Tadasana

- Strengthens the legs, knees, ankles, arms, and chest.
- Stretches and opens the hips, groins, hamstrings, and calves; shoulders, chest, and spine.
- Increases mental and physical equilibrium.
- Helps improve digestion.
- Reduce anxiety, stress, back pain and sciatica.

Contraindications : This asana should be avoided if a person is suffering from– migraine, diarrhoea, low or high blood pressure or neck and back injuries.

35. Discuss the purpose of Rikli and Jones fitness test and explain procedure of any two test batteries in detail.

Ans. Rikli and Jones fitness test is the senior citizen's fitness test (SFT) and it was developed by Roberta E. Rikli and C. Jessie Jones for older people aged between 60 to 94 years.

Purpose of the test : This test is conducted to evaluate functional ability and monitor the physical fitness status of older people and to identify problems and work on the weakness.

Test Items : The senior citizen's fitness test (SFT) includes the following six items :

- | | |
|--------------------------------|----------------------------|
| (i) Chair Stand Test | (ii) Arm Curl Test |
| (iii) Chair Sit and Reach Test | (iv) Back Scratch Test |
| (v) Eight Foot Up and Go Test | (vi) Six Minutes Walk Test |

(i) Chair Stand Test for Lower Body Strength

Purpose : To determine lower body strength, particularly legs strength.

Objective : To complete maximum stands in 30 seconds.

Materials Required : A chair with a straight back and a stopwatch.

Procedure :

- Place the chair against the wall in such a way so that it gets stabilized.
- The subject then sits on the chair, back straight, arms crossed and feet firmly on the floor, shoulder width apart.
- On the command 'Go' the subject will stand up completely, then return back to the initial position. This will be counted as one stand. The individual has to complete maximum stands in 30 seconds.

Scoring : Total number of complete stands will be counted as the score. If the individual is in half way of the stand when the time gets over, then it will be counted as a full stand.

(ii) Arm Curl Test for Upper Body Strength

Purpose : To determine upper body strength.

Objective : To complete maximum arm curls in 30 seconds.

Equipments Required : A chair without arms; dumbbell for men-8 pounds (3.6kgs) and women-5 pounds (2.3kgs); stopwatch.

Procedure :

- Place the chair against the wall in such a way so that it gets stabilized.
- The subject then sits on the chair with back straight, feet on floor, holding dumbbell with dominant hand using handshake grip.

- On the command “Go” the individual flexes the elbow or curls the arm with full range of motion then returns back to its initial position.
- In the down position dumbbell will return to handshake grip.
- The individual can perform as many arm curls as possible in 30 seconds.

Scoring : Maximum number of correct arm curls in 30 second will be counted as the score.

36. Define strength and differentiate between Isometric, Iso-tonic and Iso-kinetic exercises.

Ans. Strength is the ability of muscles to overcome the resistance. Strength is necessary for the performance of physical activities, whether it is a physical activity associated with daily living.

- (i) **Isometric Exercises :** Isometric exercises are those exercises in which muscular tension is developed without any visible movement of muscles or any body part, while doing such exercises. Therefore, isometric exercises cannot be observed. In these exercises, work performed cannot be seen directly. *For example*, pushing a wall, while pushing a wall, work is done, *i.e.*, the force is being exerted, but the work done cannot be seen as the wall doesn't move a bit. These exercises involve muscles carrying out tension against the other group of muscles. As there is no change in the muscle length when such exercises are done, hence they are called “iso” metric.

Isometric exercises are useful in training where the gain in maximum strength of muscles is more important, as compared to gain in flexibility. Such exercises are useful for weightlifters, wrestlers, gymnasts and body builders etc.

- (ii) **Isotonic Exercises :** Isotonic exercises are those exercises in which muscular effort results in movement of an object on which force is applied. In simple words, those exercises in which movements can be seen directly are called isotonic exercises.

Isotonic exercises are performed to improve elastic strength or muscular flexibility and strength. Such exercises are considered to be the best method to develop strength.

- (iii) **Isokinetic Exercises :** Isokinetic exercise method was introduced by J.J. Perrine in 1968. Isokinetic exercises are a combination of isotonic and isometric contractions in which a particular type of muscle contraction called isokinetic contraction takes place. These exercises are performed on specially designed instruments. Such exercises are performed to develop both bulk and tone of muscles. Isokinetic exercises are performed by athletes who take part in sporting events like– rowing and swimming.

37. What are the various types of friction? With the help of suitable example explain why friction is necessary in sports.

Ans. Friction refers to the resistance to motion at the contact of two surfaces.

Types of Friction

- (i) **Static friction :** It occurs when the force applied to an object does not cause the object to move in the direction of the force. Because of static friction, extra force is required to start the motion of stationary objects, *for example*, if we try to push a heavy object with less force than the force of static friction between the object and the floor, the object will not move. To make the object move, we have to exert more force than the force of static friction. Once the object starts moving, static friction no longer exists.
- (ii) **Dynamic/kinetic friction :** Dynamic friction is the opposing force that comes into play when a body actually moves over the surface of another body. Dynamic friction is of following two types–
- (a) **Sliding friction :** Sliding friction is the opposing force that comes into play when one body is actually sliding over the surface of the other body. *For example*, ice-skating and planting the pole in pole vault.
- (b) **Rolling friction :** It is the opposing force that comes into play when one body is actually rolling over the surface of the other body. *For example*, when a hockey or cricket ball is hit, it rolls on the

surface of the ground. It stops after some time due to rolling friction. Such type of friction is very common in games and sports.

(iii) Fluid friction : It occurs when motion of objects is opposed while traveling through any fluid such as– gas, air or water.

For example,

- While cycling, fluid friction occurs between the cyclist and the air. This is why cyclists often wear streamlined helmets and specially designed clothing to reduce fluid friction.
- While Paragliding when an athlete glides on air.

Premier Test Paper-6
CLASS-XII (Physical Education)
(With Solutions)

Time Allowed : 3 hours

Max. Marks : 70

General Instructions :

- (i) The question paper consists of 5 sections and 37 questions.
- (ii) **Section-A** consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
- (iii) **Section-B** consists of question 19-24 carrying 2 marks each and are Very Short Answer Types and should not exceed 60-90 words. Attempt any 5.
- (iv) **Section-C** consists of question 25-30 carrying 3 marks each and are Short Answer Types and should not exceed 100-150 words. Attempt any 5.
- (v) **Section-D** consists of question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
- (vi) **Section-E** consists of question 34-37 carrying 5 marks each and are Short Answer types and should not exceed 200-300 words. Attempt any 3.

Section-A

(All Questions are compulsory)

1. As per the division process of age in Special Olympics, which of the following is the appropriate age division for team games?

- (a) 13 and under (b) 8 – 11 years (c) 30 and above (d) 16 – 21 years

Ans. (d) 16 – 21 years

2. A girl is participating in sports for 2 years. Identify the psychological benefits for her from the following :

- (a) Helps in increasing bone density
- (b) Helps in improving muscle tone
- (c) Helps to improve self-esteem
- (d) Helps in improving communication

Ans. (c) Helps to improve self-esteem

3. _____ is characterized by high sociability, if a person is outgoing and has a tendency to seek stimulation in the company of others.

- (a) Conscientiousness (b) Agreeableness (c) Extraversion (d) Neuroticism

Ans. (c) Extraversion

4. Which of the following is a short term effect of exercise on the muscular system?

- (a) Hypertrophy of muscles (b) Increase in glycogen storage
- (c) Increase in muscle temperature (d) Increase in lactic acid tolerance

Ans. (c) Increase in muscle temperature

5. Which of the following is a macro mineral?

- (a) Iodine (b) Copper (c) Iron (d) Sodium

Ans. (d) Sodium

6. Given below are the options for number of participating teams in a tournament. Which option will have highest number of 'Byes' while drawing a fixture?

- (a) 17 (b) 18 (c) 19 (d) 20

Ans. (a) 17

7. Match the following :

Column I

- I. Sliding friction
- II. Fluid friction
- III. Rolling friction
- IV. Static friction

- (a) I-2, II-1, III-3, IV-4
(c) I-2, II-4, III-1, IV-3

Column II

- 1. Cycling
- 2. Ice skating
- 3. Try to push heavy object
- 4. Swimming

- (b) I-2, II-1, III-4, IV-3
(d) I-4, II-2, III-3, IV-1

Ans. (c) I-2, II-4, III-1, IV-3

8. Identify the asana shown in the picture given below :



- (a) Tadasana (b) Katichakrasana (c) Pawanmuktasana (d) Garudasana

Ans. (b) Katichakrasana

9. SAI Khelo India Fitness Test is introduced in schools for two groups, namely class 1-3 and class 4-12. Which of the following test item is common for both groups?

- (a) Plate Tapping Test (b) Body Mass Index Test
(c) Sit and Reach Test (d) 50 mts Dash

Ans. (b) Body Mass Index Test

10. In which of the following methods to develop flexibility, an individual performs the movement with swing and rhythm?

- (a) Slow stretching method (b) Slow stretch and hold method
(c) PNF method (d) Ballistic method

Ans. (d) Ballistic method

11. There are _____ different types of physical impairment in Paralympics.

- (a) Seven (b) Six (c) Eight (d) Nine

Ans. (c) Eight

12. The height of bench used in Harvard Step Test for men is _____.

- (a) 16 inches (b) 20 inches (c) 22 inches (d) 15 inches

Ans. (b) 20 inches

13. Preparing budget of the tournament and maintaining a record of income and expenditure of the tournament are the responsibilities of which committee?

- (a) Technical (b) Finance (c) Transport (d) Medical

Ans. (b) Finance

14. Which of the following asana is performed in a sitting position?

- (a) Bhujangasana (b) Matsyendrasana (c) Garudasana (d) Mandukasana

Ans. (d) Mandukasana

15. Given below are two statements labelled Assertion (A) and Reason (R) :

Assertion (A) : Self-esteem is centred around a belief in the self and respect for the self.

Reason (R) : Mental imagery is a psychological skill, that can be created in the mind in the absence of any external stimuli.

In the context of the above two statements which one of the following is correct ?

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of the Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

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

16. Given below are two statements labelled Assertion (A) and Reason (R) :

Assertion (A) : Menarche is usually considered the point of sexual maturity for girls.

Reason (R) : Menstrual dysfunction is an abnormal condition in a woman's menstrual cycle.

In the context of the above two statements which one of the following is correct ?

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of the Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

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

17. Fat soluble vitamins include the following vitamins except _____.

- (a) Vitamin-B (b) Vitamin-D (c) Vitamin-A (d) Vitamin-E

Ans. (a) Vitamin-B

18. Johnson-Metheny Test Battery does not consist of _____ motor stunt.

- (a) Front Roll (b) Side Roll (c) Back Roll (d) Jumping Full Turns

Ans. (b) Side Roll

Section-B
(Attempt any 5 questions)

19. Briefly explain 'Health Run'.

Ans. Health runs are generally conducted for the purpose of improving the health standards in society and creating awareness about the importance of physical activities for maintaining good health or for raising charity. The purpose of the runners is not to win, but to participate in the events. To get its full impact, a large number of registrations are required.

There is no age bar for participants. It is not a professional race so there is no need to run a long distance. These runs are conducted by NGOs or health departments to spread awareness about health related issues.

20. Briefly explain 'R.I.C.E.' Therapy to manage soft tissue injuries.

Ans. Soft tissue injuries like sprain and strain can be managed by giving first aid. R.I.C.E is the therapy that helps to reduce pain and swelling.

The principle of R.I.C.E denotes :

R : Rest and protect the injured or sore area.

I : Ice or cold packs are used as soon as possible.

C: Compression, or wrapping the injured or sore area with an elastic bandage.

E : Elevate the injured or sore area.

21. Explain the procedure of Dhanurasana as a preventive measure for Asthma.

Ans. Procedure of Dhanurasana

- (i) Take prone position, legs together, and hands straight by the side of the thighs, chin resting on the ground.
- (ii) Fold the legs at the knee and bring them to the thighs. Knees must remain together.
- (iii) Bring hands backward and hold the toes of respective legs with the thumb and forefinger of the respective hands.
- (iv) Raise legs up a bit and simultaneously raise the head and chest.
- (v) Holding the toes, pull the legs towards the ears. Gaze in front.
- (vi) While returning to the original position loosen your hands, take legs backward, let the thighs touch the ground, leave the toes and ultimately bring the legs and hands to the first position.

22. What do you understand by Macro-cycle?

Ans. ○ The duration of this cycle is 3 to 12 months and is considered the longest of the three cycles of sports training.

- Macro cycle activities include– endurance, intensity, competition and recovery programmes.
- The purpose of the macrocycle is to enable the sportsperson to improve the performance capacity to put up an optimal performance, at a specific time, during the competition.
- A macro cycle comprises several meso cycles and the last meso cycle focuses on recovery.

23. Enlist four non-nutritive food items.

- Ans.**
- Phytochemicals
 - Artificial sweeteners
 - Coffee
 - Anthocyanins
 - Preservatives
 - Flavonoids/isoflavones
 - Spices

24. Suggest any two strategies to make physical activities accessible for CWSN.

- Ans.**
- Advance information about activity, space, resource person should be communicated clearly.
 - Instructional strategies such as– verbal and visual should be used for performing various types of physical activities.
 - Instruction must be provided in simple words and sentences and in low tone.
 - For CWSN, space should be approachable according to the physical disability.
 - The area for the physical activity should be limited, disturbance free (noise, heat, cold, texture of floor, audience etc.) and preferably an indoor space.
 - CWSN should be provided with appropriate equipments and trained professionals.
 - Initial stage activities of CWSN should be simple and based on a single action.
 - Teacher's body action (demonstration) and videos should be used to make them learn fundamental motor skills before practising it.
 - A CWSN must be allowed to choose a sport she/he enjoys so that he/she remains motivated.
 - CWSN should be encouraged to watch others before performing themselves.
 - Initially, children with disabilities need a lot of motivation to participate in physical activities.

Section-C
(Attempt any 5 questions)

25. Briefly explain the concept of Talent Identification in sports.

Ans. Talent identification in sports refers to the search for young athletes who have the potential to become an elite athlete in the future. Talent identification parameters are those norms which are designed to predict performance capacity, taking into account the child's current level of fitness and maturity. Talent identification in sports and games is a long term process comprising of various stages explained below :

Stages of Talent Identification

- **First Stage :** The first stage starts when a potentially talented child is around 10 to 12 years of age. During this stage some essential fields tests are conducted. These tests are easy to administer and generally carried out in schools by the teachers. Those who seem talented are then encouraged to participate in general training in schools and clubs.
- **Second Stage :** This stage starts when a potentially talented child is around 13 to 16 years of age. During this stage, some tests which are easy to administer are carried out in schools. Those selected after these tests undergo more sophisticated tests, administered by specialists in their respective areas. Test battery during this stage include– player's background information, training history, competition results, anthropometric measurements, and psychological and physiological test results.
- **Third Stage :** The third and final stage of talent identification in sports and games begin when those who qualified the second stage participate in elite junior programmes. Whereas, those who showed promising results in the second-stage tests but were not able to qualify for the third stage are encouraged to participate in training programmes so that they can later qualify for third stage.

26. Explain the purpose and procedure of 'Flamingo Balance Test'.

Ans. Aim : This test aims to assess the strength of leg, pelvic and trunk muscle as well as static balance.

Infrastructure/Equipment Required : Non slippery even surface, a beam and a stopwatch.

Procedure :

- Participant is asked to stand on the beam. He/she may hold the instructor's hand if required to start.

- While balancing on the preferred leg, the free leg is flexed at the knee and the foot of this leg held close to the buttocks.
- As the participant releases the hand of the instructor start the stopwatch and pause the stopwatch each time the subject loses balance either by falling off the beam or letting go of the foot being held.
- Resume over, again timing until they lose balance. Count the number of falls in 60 seconds of balancing.
- If there are more than 15 falls in the first 30 seconds, the test is terminated.

Scoring : The total number of falls or loss of balance in 60 seconds of balancing is recorded as the score.

27. Elucidate any three factors, affecting projectile trajectory.

Ans. Factors that affect projectile trajectory :

- Angle of projection :** When it is 45 degree, maximum horizontal distance is achieved
- Initial velocity :** The horizontal range depends on initial velocity.
Greater the initial velocity applied on the projectile during release, greater horizontal distance is achieved.
- Gravity :** It is the force of attraction exerted by the earth. The greater the weight of an object, the greater is the influence of gravity upon it. Gravitational pull stops the upward movement of an object resulting into decreased height of projectile.
- Air resistance :** Surface area, speed, surface of object and mass of object all have an impact on air resistance.
- Spin :** It changes the path of projectile. The amount and direction of spin directly affects the distance that projectile travels because the air pressure acts on it.

28. Enlist any two tests to measure functional fitness of senior citizens and describe the procedure of any one of them.

- Ans.**
- Chair Stand Test for lower body strength
 - Arm Curl Test for upper body strength
 - Chair Sit and Reach Test for lower body flexibility
 - Back Scratch Test for upper body flexibility
 - Eight Foot Up and Go Test for agility
 - Six Minute Walk Test for aerobic endurance

Chair Stand Test

Purpose : To determine lower body strength, particularly legs strength.

Objective : To complete maximum stands in 30 seconds.

Materials Required : A chair with a straight back and a stopwatch.

Procedure :

- Place the chair against the wall in such a way so that it gets stabilized.
- The subject then sits on the chair, back straight, arms crossed and feet firmly on the floor, shoulder width apart.
- On the command 'Go' the subject will stand up completely, then return back to the initial position.
This will be counted as one stand. The individual has to complete maximum stands in 30 seconds.

Scoring : Total number of complete stands will be counted as the score. If the individual is in half way of the stand when the time gets over, then it will be counted as a full stand.

29. Describe three food myths and their related facts.

- Ans. (i) Drinking water in between meals affects digestion :** Most people think that drinking water during meals affects the process of digestion. The truth is that, drinking water simply fills up stomach and as a result one tends to eat less which is especially good when someone is trying to lose weight.
- (ii) Milk should be avoided after eating fish :** It is one of the most widely circulated myth. Many people believe that drinking milk immediately after eating fish can cause skin disease like leukoderma, or white patches on skin. While various research shows that there is no problem with drinking milk after eating fish.
- (iii) Apples and brinjals are rich in iron because they turn brown when cut :** Many people believe that apples and brinjals are good sources of iron. They are an excellent source of fibre but not of iron. This change in colour is an enzymatic reaction and has nothing to do with iron.
- (iv) Oils have lesser calories as compared to ghee or butter :** Ghee, Butter and Oils have almost the same amount of calories. Earlier margarine was considered as a healthier alternative to butter, but later it was found that some margarines are actually healthier as they contain trans-fats, which have even more adverse effects on cholesterol and heart health.
- (v) Eat less carbohydrates to become healthier :** Healthier carbohydrates such as– whole grains, is important for health and well-being as they are associated with a decreased risk of chronic diseases and premature mortality.. However, refined carbohydrates should be avoided.

30. Describe any two methods to develop strength, by giving suitable examples from sports.

Ans. Methods to Develop Strength

- (i) Isometric Exercises :** Isometric exercises are those exercises in which muscular tension is developed without any visible movement of muscles or any body part, while doing such exercises. Therefore, isometric exercises cannot be observed. In these exercises, work performed cannot be seen directly. *For example*, pushing a wall, while pushing a wall, work is done, *i.e.*, the force is being exerted, but the work done cannot be seen as the wall doesn't move a bit. These exercises involve muscles carrying out tension against the other group of muscles. As there is no change in the muscle length when such exercises are done, hence they are called "iso" metric.

Some examples of isometric exercises are :

- Balancing on one foot.
- Standing erect or maintaining an upright posture.
- Standing with heavy load on one's head.
- Pressing against a wall.
- Maintaining a sitting posture without a chair.

- (ii) Isotonic Exercises :** Isotonic exercises are those exercises in which muscular effort results in movement of an object on which force is applied. In simple words, those exercises in which movements can be seen directly are called isotonic exercises.

Isotonic exercises are performed to improve elastic strength or muscular flexibility and strength. Such exercises are considered to be the best method to develop strength.

Some examples of isotonic exercises are :

- Light rhythmic exercises.
- Exercises with light weights.
- Running and jumping on the spot.
- Calisthenics exercises.

Section-D
(Attempt any 5 questions)

31. Study the table given below :

Round I	Round II	Round III	Round IV	Round V	Round VI	Round VII
7 Bye 6 5 4 1 2 3	6 Bye 5 4 3 7 1 2	5 Bye 4 3 2 6 7 1	4 Bye 3 2 1 5 6 7	3 Bye 2 1 7 4 5 6	2 Bye 1 7 4 5 6 3	1 Bye 7 6 5 2 3 4

Based on the above study and your knowledge, answer the following questions :

- League Tournament is also known as _____.
- Identify the method used in the above fixture.
- How many rounds will be played if 6 teams are participating in a league tournament?
- How many matches are played in the above fixture?

Ans. (a) Round Robin
(b) Cyclic Method
(c) 5 Rounds
(d) 21 matches

32. Study the picture given below :



Based on the above study and your knowledge, answer the following questions :

- The above logo incorporates four colours, red, blue, yellow and _____.
- The logo of Deaflympics was designed in the year _____.
- In the above logo, the hand shapes, "Ok", "Good" and "_____" overlap each other.
- The first Deaflympics were held in the year _____ in Paris.

Ans. (a) Green
(b) 2003
(c) Great
(d) 1924

OR

First Deaflympics Games were also known as _____.

Ans. International Silent Games.

33. Study the picture given below :



Based on the above study and your knowledge, answer the following questions :

- Identify the injury shown in picture 'A'.
- The injury shown in picture 'A' occurs due to overstretching of _____.
- Identify the type of fracture shown in picture 'B'.

OR

Fracture is a _____ tissue injury.

- _____ is a joint injury that forces the ends of bones out of position.

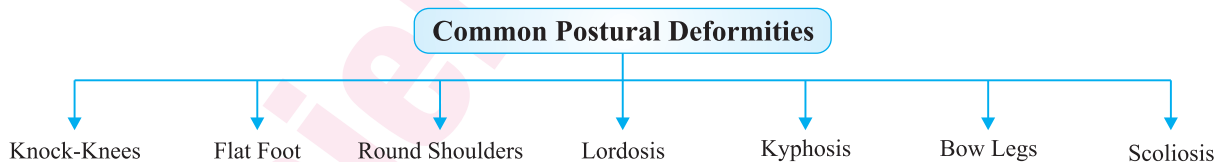
- Ans. (a) Sprain (b) Ligaments
(c) Oblique OR Hard tissue (d) Dislocation

SECTION – E

(Attempt any 3 questions)

34. Explain any two postural deformities and suggest their corrective measures.

Ans.



- Knock-Knees (Genu Valgum)** : Knock-knees, also known as **Genu valgum**, is a knee misalignment that turns the knees inward. As a result, both knees touch or knock against each other in a normal standing posture but there is a gap of 3-4 inches between the ankles. It is generally first noticed during early childhood, but in most cases, it usually corrects itself naturally by the time children are 7-8 years old. However, in some cases it continues till adolescence.

Corrective Measures for Knock-Knees

- Exercises like horse-riding.
- Keeping the pillow between the knees.
- Standing erect for some time.
- Performing padmasana and gomukhasana regularly can help strengthen muscles of the legs and realign the knees.
- Strengthening exercises, such as leg raises while seated or lying down.

- Use of walking callipers is also a big help at pre-puberty stage.
 - Excessive body weight can be a contributing factor to Genu valgum as extra weight puts additional strain on the legs and knees, and this can cause knock-knees to worsen. A person who is overweight should lose weight through a combination of diet and exercise.
- (ii) **Flat Foot (Pes Planus)** Flat foot, is the most common deformity of the foot. Flat foot is also known as pes planus or fallen arches. As the name flat foot suggests, people suffering from this deformity have either no arch in their feet, or one that is very low, allowing the entire soles of the feet to touch the floor in standing position.

It is a condition that can be easily diagnosed by looking at the arch of the foot or by taking a water print test. Majority of babies are born with flat feet but as they grow or get involved in physical activities the arch in the foot develops.

Corrective Measures for Flat Foot

- Walking, jumping and standing on heels, toes and feet parallel to each other.
- Walking on sloping, sandy or uneven surfaces.
- Picking up objects with toes, flexing the toes around a point of resistance, such as a strap or band placed under the ball of the foot.
- Backward and forward hopping with knees bent.
- Yoga asanas like Adhomukhsavasana performed in Surya Namaskar, Vajrasana and other therapeutic massages are also helpful in developing the arch.
- Writing numbers in the sand with the toes will also help in developing the arch.

35. Define Equilibrium. Explain Static and Dynamic Equilibrium by giving suitable examples from sports.

Ans. A body or object is said to be in equilibrium when, the sum of the forces acting on it is equal to zero, i.e., there are no imbalance force.

Two types of equilibrium are :

(i) Static Equilibrium :

- Static equilibrium can be defined as a state when a body is at rest or completely motionless.
- Static equilibrium is the balance of the body during rest or stationary position.
- For a body or an object to be in static equilibrium it must be completely motionless and meet three conditions–
 - (a) The sum of all the vertical forces acting on the body must be zero.
 - (b) The sum of all the horizontal forces acting on the body must be zero.
 - (c) The sum of all torques must be zero.

Examples : Stance maintained by the batsmen in cricket, on the starting block by the sprinter, wide stance maintained by the wrestler, etc.

(ii) Dynamic Equilibrium :

- Dynamic equilibrium was first described by Galileo.
- Dynamic equilibrium can be defined as– a state when all the applied and inertial forces applied to a moving body are in balance, resulting in movement with unchanging speed or direction. In simple words–

Dynamic equilibrium or dynamic stability is a balance of the body during movement.

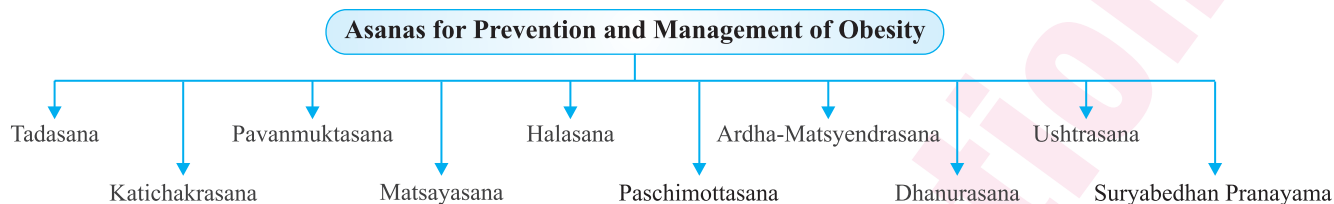
- To control the equilibrium and achieve balance, stability needs to be maximised.
- When the body or an object is moving with a constant velocity, i.e., with no change in speed or direction it is said to be in dynamic equilibrium.

Examples : Body position maintained by a sprinter while running on the track, cyclist while cycling, dribbling of the football by a soccer player etc.

36. What do you understand by Obesity ? Explain the procedure of any two asanas to manage obesity.

Ans. Obesity can be defined as abnormal or excessive fat accumulation in the body that poses a risk to health. Overweight or obesity is considered to be one of the major factor for a number of chronic diseases such as– diabetes, cardiovascular diseases, cancer, etc.

Following asanas are considered to be the best to control and cure obesity :



(i) Procedure of Katichakrasana

- Keep the legs 2-3 feet apart.
- Raise both the arms up to shoulder level with palm facing each other and keep them parallel.
- While exhaling, twist the body towards the left side so that the right palm touches the left shoulder, come back with inhalation.
- While exhaling, twist the body towards the right side so that the left palm touches the right shoulder, come back with inhalation.
- This is one round : repeat it two more times.
- Relax in Samasthiti.

(ii) Procedure of Pawanmuktasana

- Lie on back, stretching your legs straight.
- Now bend your right knee and hold it with your hands, pressing it towards your abdomen. Breathe out, while lifting up your head and try to touch your knee with your chin.
- Breathe in and stretch your legs straight.
- After that press your abdomen with your left leg.
- Then press your abdomen with both legs, placing your chin between your knees. From this position, swing your body back and forth 5 to 10 times, then swing your body left to right and vice versa 5 to 10 times.

37. Define Motivation. Differentiate between Intrinsic and Extrinsic Motivation.

Ans. Motivation is a type of force that helps a person to start some work, carry it out and achieve success in it.

Intrinsic Motivation V/s Extrinsic Motivation

Basis	Intrinsic Motivation	Extrinsic Motivation
Definition	Driving force to pursue an action for fun, joy or any other inner satisfaction.	Driving force to pursue an action due to reward, trophy, money, promotions or praise.
Factors	Internal factors like– joy, enjoyment.	External factors like– reward, promotion, praise.
Method	Goal setting, family and community support.	Associating success with future benefits, awards, promotions and avenues.
Benefits	Long term benefit of maintaining a behaviour.	Helpful to initiate or create a drive towards a desired behaviour when internal factors are missing.

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