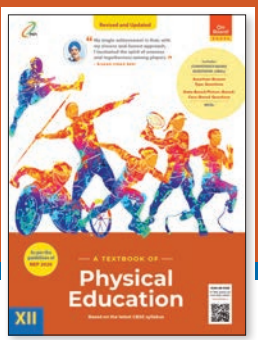
As per the guidelines of NEP 2020

— SUPPLEMENT —

A Textbook of Physical Education Class XII

Based on 2022–23 CBSE syllabus



1 Management of Sporting Events

FUNCTIONS OF SPORTS EVENT MANAGEMENT (PLANNING, ORGANISING, STAFFING, DIRECTING AND CONTROLLING)

Concept of Sports Management

As a concept, the word 'management' has multiple meanings. The verb 'to manage' means 'to master, to control or to lead'. Management can be understood as a creative process, which allows an organisation to reach the set goals.

"Sports management can be defined as the coordination of resources, technologies, processes, personnel and situational contingencies for the efficient production and exchange of sports services."

– P Chelladurari

"Management in sport may be recognised as dynamic acquisition and coordination of resources that are necessary to implement the mission of sport organisations, whereby managers take decisions and responsibility for them.

– Retar

In a nutshell, sports management involves any combination of skills related to planning, organising, staffing, directing, controlling, budgeting, evaluating, etc. of any organisation or department whose primary product or service is related to sport or physical activity.

To meet the needs of their duties, sports managers must perform a variety of functional areas and carry out a number of tasks. Planning, organising, leading and reviewing are some of the functional domains used to characterise what managers perform. These functional categories may be useful in giving a rough understanding of what a manager performs, but these do not give a complete list of a manager's activities and roles.

Organisations as well as managers and the tasks they do, are always changing. The functional categories highlighted below provide an overview of what a manager performs; however, keep in mind that a manager's operations cannot be reduced to those of a robot following a predetermined pattern of tasks.

Functions of Sports Management

1. **Planning:** Planning is a goal-oriented activity. The planning role entails identifying organisational goals and selecting the best methods for achieving these goals. The initial step in performing managerial duties should always be planning. Strategic planning is a phrase used by many companies to describe the development and implementation of their planning process. Setting a path of action for the sports organisation is what planning entails.

   Both short- and long-term planning are part of the planning process. Short-term planning is setting goals that the organisation hopes to achieve within the next few months to a year. An athletic shoe firm, for example, could aim to buy enough inventory of a specific model of shoe so that its salesperson can stock suppliers with enough shoes to match customer demand for the future year. Long-term planning entails

setting goals that the company would like to achieve over a longer period of time, such as 5 to 10 years.

2. **Organising:** After planning, the sports manager then takes up the task of organising. The organising function kickstarts the implementation of plans. The manager selects which sorts of duties must be completed and who will be accountable for doing them as part of the organisational role.

   An organisational chart is created to show graphically which duties must be completed. It depicts the various jobs within an organisation as well as their reporting structures. An organisational chart may also include information on the individuals who work in the various jobs. This chart depicts the various roles and reporting lines in the company, with position descriptions detailing the actions and duties of the individual positions. Soliciting corporate sponsors, forming marketing teams or doing special events, directing the department's social media campaign, and selling stadium signs are all possible job duties for an Assistant Athletic Director for marketing.

   The organisational chart may be very useful in displaying workers, the various jobs within the company, who occupies those positions, what their tasks are, and who reports to whom.

3. **Staffing:** Staffing can begin after the organisational chart has been created and the position qualifications have been determined. The responsibility for the roles in the organisational structure is determined by staffing. Staffing is the process of effectively recruiting and selecting people to fill roles in a company. Position qualifications obtained during the organising function are used in this situation.

   Recruiting and hiring an employee entail identifying the suitable individual for the position, who possesses the necessary qualities. Managers must do their study and follow appropriate measures to truly get to know and understand the people they interview in order to identify that person. These procedures involve promoting the post appropriately, analysing submitted applications, selecting competent persons for the interview process, verifying references, and selecting the 'best match' candidate for the job. Staffing covers orientation, training, and professional development of employees in addition to the selection process.

4. **Directing:** This is the activity element of the management process. It is commonly referred to as the directing or leading function. This is the step where everything takes place. The sports manager is responsible for coordinating the actions of the personnel in order to achieve corporate goals. The manager's responsibilities as a leader include delegating, communicating, managing conflict, managing change, and inspiring staff. The manager employs a variety of talents to carry out these tasks, which are detailed in the following section of this chapter.

   The practice of delegation, which entails giving authority and accountability for results to workers, is the first step in the leadership role. The delegating process requires effective communication. Employees must understand what they are being asked to accomplish, should be given the necessary authority to do the assignment, and should be informed about how their performance will be judged.

5. **Controlling:** Controlling entails ensuring that performance adheres to established guidelines. Controlling consists of three steps:
   - Setting performance criteria.
   - Comparing actual performance to standards.
   - Taking remedial action as needed.

   The existence of plans is essential for effective controlling. Planning provides necessary performance standards or objectives. Controlling also needs a clear understanding of where responsibility for deviations from standards lies. Budget and performance audits are two traditional control techniques. An audit is an examination and verification of records and supporting documents.

   A budget audit explains where the business is in relation to what was planned or budgeted for, but a performance audit verifies whether the data provided accurately represent actual performance.

EXERCISES

A. Objective Type/Multiple-Choice Questions

1 mark

I. **Multiple-Choice Questions:**

1. Which of the following is a part of sports management?
   (a) Planning
   (b) Directing and Organising
   (c) Staffing and Controlling
   (d) **All of these**
2. What is the meaning of staffing?
   (a) Interviewing staff
   (b) **Selecting and recruiting staff**
   (c) Promoting staff
   (d) All of these

B. Short Answer Type Question

2 marks

1. Define sports management.

C. Short Answer Type Questions

3 marks

1. What is controlling in sports management?
2. What is directing in sports management?

D. Long Answer Type Question

5 marks

1. What are various functions of sports management?

3 Yoga as Preventive Measure for Lifestyle Diseases

OBESITY: PROCEDURE, BENEFITS AND CONTRAINDICATIONS FOR TADASANA, KATICHAKRASANA, PAVANMUKTASANA, MATSAYASANA, HALASANA, PASCHIMOTTANSANA, ARDHA MATSYENDRASANA, DHANURASANA, USHTRASANA, SURYABEDHANA PRANAYAMA

Tadasana

Refer to page 62 of textbook.

Katichakrasana

'Kati' in Sanskrit means 'waist' and 'Chakra' means 'wheel'. This asana is also called waist rotating pose or lumbar twist pose. It is a simple and basic-level yoga pose suitable for beginners.

Procedure

1. Stand straight with both legs 12 inches apart, keeping the arms sideways.
2. Now, bring your hands in front of the chest, with palms facing each other. Exhale and twist the body towards left.
3. While inhaling, take the hands slowly towards the left side of your body. Simultaneously, twist your body from the waist to the left side and take your arms back as far as possible. Turn the head towards the right side and look over the right shoulder.
4. While swinging towards the left side, keep the left arm straight and right arm bent. Look in the back. Inhale and come back to the original position.
5. Repeat towards the right side.

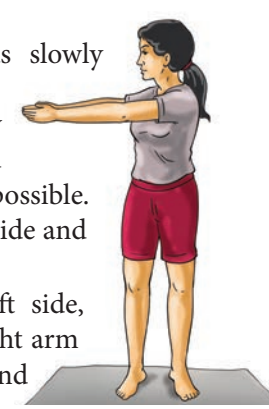


Figure 3.1
Katichakrasana

Benefits

- It stretches the waist region and thus, tones up the lower back region.
- It strengthens shoulders, neck, arms, abdomen, back and thighs.
- It helps to burn extra calories and fat, and thus reduces body weight.

Contraindications

1. People suffering from spinal problems should avoid this pose.
2. Pregnant women should not perform this pose.

Pavanmuktasana

Refer to pages 56-57 of textbook.

Matsayasana

Refer to page 61 of textbook.

Halasana

'Hala' in Sanskrit and Hindi means 'plough'. This asana resembles the shape of a plough.

Procedure

1. Lie in supine position with your arms next to your body and palms pressing onto the floor.
2. Keeping the knees straight and together, lift your legs up to 30 degrees, then up to 60 degrees and further to 90 degrees.
3. Pressing the arms, raise the trunk by lowering the legs over the head, the toes touching the ground. Move the legs a little beyond the head.
4. Position your hands on your lower back for support. Maintain this pose for 5–10 seconds. Slowly, come back to the initial position.

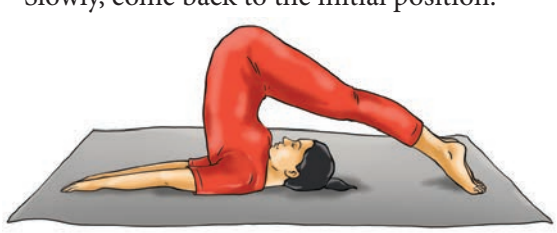


Figure 3.2 Halasana

Benefits

- This asana is a good exercise for thyroid and parathyroid glands.
- It boosts blood circulation, improves blood pressure and lowers blood sugar levels.
- It helps in increasing the height of children.

Contraindications

1. Do not perform this asana if you have stiffness in spine, cervical spondylitis, blood pressure or any other health complications.

Paschimottansana

Refer to page 56 of textbook.

Ardha Matsyendrasana

Refer to page 54 of textbook.

Dhanurasana

'Dhanur' in Sanskrit means 'bow' and 'asana' means 'pose'. In this pose, the posture of the body resembles a bow with string attached to it.

Procedure

1. Lie in prone position with your arms placed beside your body and feet hip-width apart.
2. Now, gently fold your knees and try to place your ankles on your hips.
3. Hold your ankles firmly with your hands.
4. Inhaling, try to raise your thighs and chest off the ground as high as possible.
5. Now try to maintain this position for about 5–10 seconds.
6. To come back, leave your ankles and lie down straight again.

Figure 3.3 Dhanurasana

Benefits

- This asana is helpful in managing diabetes as it massages the liver and pancreas.
- It strengthens the back and abdominal muscles and increases the flexibility of the spine.
- This asana helps in stimulating reproductive organs.

- It helps in reducing stress and anxiety.
- It is good for people having hunched back and drooping shoulders.

Contraindications

1. Do not practice this asana if you have neck or lower back injuries, high blood pressure, hernia, peptic ulcer, colitis, slipped disc or spondylitis.
2. Do not practice this asana if you have undergone any abdominal surgery recently.

Ushtrasana

'Ushtra' is a Sanskrit word, meaning 'camel'. This asana is easy to perform. In the final position of this asana, the body resembles a camel.

Procedure

1. Sit on mat in Vajrasana.
2. Keep your knees and shoulders straight.
3. Inhale and arch your back and place your palms on the respective heels or soles.
4. Keep your head tilted backwards.
5. Do not strain your neck; keep it natural. Let your neck be free.
6. Stay in this final position for 5–10 seconds.
7. Breathe out and slowly come to the Vajrasana position by releasing your hands one by one.

Figure 3.4 Ushtrasana

Benefits

- This asana improves the function of thyroid glands.
- It improves the flexibility of spine, loosens up the vertebra and stimulates spinal nerves.
- It stretches the anterior muscles of the body.
- It is beneficial for people having indigestion problems.
- It is useful for people with drooping shoulders and hunched back.

Contraindications

1. Do not practice this pose if suffering from hernia, abdominal diseases, vertigo, high or low blood pressure, migraine or severe headache.

Suryabhedana Pranayama

'Surya' in Sanskrit and Hindi means the 'sun' and 'Bhedana' means 'piercing, enter or breaking through something'. According to Yoga, the Surya nadi or *pingala* is the right nostril and Chandra nadi or *ida* is the left nostril. In this pranayama, right nostril is used for inhalation and the left nostril for exhalation. The same process is repeated in each round.

Procedure

1. Sit on a mat in Padmasana, Sukhasana, etc. Keep your head and spine erect with eyes closed.
2. Keep the left nostril closed with your middle and ring finger of the right hand.
3. Inhale slowly, without making any sound, through the right nostril comfortably.
4. Now bring your hand down and place it on your knees. Retain the breath by firmly pressing the chin against the chest in *Jalandhara Bandha*.
5. Then contract your rectum muscles in *Mool Bandha*. This point cannot be reached at the very outset. You need to increase the period of retaining breath (*Kumbhaka*).
6. This pranayama is known as Suryabhedana Pranayama.
7. Without making any sound, exhale slowly through the left nostril by closing the right nostril. You need to release the Mool Bandha, Uddiyan bandha and Jalandhar bandha.
8. Come back to original position. Do this pranayama 3 – 5 times in one round.

Figure 3.5 Suryabhedana Pranayama

Benefits

- Suryabhedana Pranayama helps in managing rhinitis and various sorts of neuralgia.
- This pranayama purifies the brain and destroys the intestinal worms and cures diseases arising from excess of wind.
- It helps in removing the worms that are found in the frontal sinuses.
- It is helpful for people suffering from low blood pressure.
- It cures all diseases that are caused by the insufficiency of oxygen in the blood.
- It is the best breathing exercise for people having asthma or other respiratory diseases.

Contraindications

1. Do not perform this pranayama if undergone brain surgery or heart surgery.
2. People with high blood pressure should avoid this.

DIABETES: PROCEDURE, BENEFITS AND CONTRAINDICATIONS FOR KATICHAKRASANA, PAVANMUKTASANA, BHUJANGASANA, SHALABHASANA, DHANURASANA, SUPTA VAJRASANA, PASCHIMOTTANASANA, ARDHA MATSYENDRASANA, MANDUKASANA, GOMUKHASANA, YOGAMUDRA, USHTRASANA, KAPALABHATI

Katichakrasana

Refer to previous section.

Pavanmuktasana

Refer to pages 56–57 of textbook.

Bhujangasana

Refer to pages 55–56 of textbook.

Shalabhasana

Refer to page 65 of textbook.

Dhanurasana

Refer to previous section.

Supta Vajrasana

Supta Vajrasana is the further extension of Vajrasana. It is Vajrasana in lying position.

Procedure

1. Sit comfortably in Vajrasana. Slowly bend your back with the support of one elbow first and then with the other elbow.
2. Allow your elbows to support the body.
3. Now, stretch your arms behind and hold one elbow/arm with the hand of another arm.
4. To come back to the original position, first take out your hands and place them by the sides of your body.
5. Now, with the help of elbows come to the initial position.

Figure 3.6 Supta Vajrasana

Benefits

- This asana improves the digestive system and removes constipation.
- It strengthens the abdominal muscles.
- It is useful in the management of high blood pressure and sciatica.
- It improves blood circulation and induces calmness.
- It is beneficial for asthma and respiratory disorders.

Contraindications

1. Do not practice if suffering from high blood pressure.
2. Avoid this asana in the case of slipped disc or other knee or back problems.

Paschimottanasana

Refer to page 56 of textbook.

Ardha Matsyendrasana

Refer to page 54 of textbook.

Mandukasana

In Sanskrit, 'Manduka' means 'frog' and 'Asana' means 'pose'.

So, it is known as the frog pose. This asana is excellent for diabetes.

Procedure

1. Sit comfortably in Vajrasana.
2. Make the fists with thumbs inside.
3. Place the two fists near the navel and press the navel area.
4. Exhale and slowly bend forward from the waist and lower the chest.
5. Keep the head and neck raised and look forward in the bent position.
6. Keep the breath outside in this position and maintain it for 5–10 seconds.
7. To release this posture, inhale and slowly raise the trunk up to kneeling position.
8. Remove your fists from the navel area and sit in Vajrasana.
9. Repeat this asana 3–5 times.

Figure 3.7 Mandukasana

Benefits

- Mandukasana is beneficial for the people suffering from diabetes, constipation and digestive disorders.
- It can reduce extra fat in the belly, waist and thighs and helps in weight management.
- It helps in eliminating gas from the stomach.

Contraindications

1. Avoid this asana in case of back pain, slipped disc or any other spine problems.
2. Pregnant women should avoid this asana.
3. Avoid this in case of any recent surgery of the abdomen, chest, knees or legs.

Gomukhasana

Refer to pages 59–60 of textbook.

Yogamudra

Mudras are powerful centres of energy. Practising yogamudra positions helps in improving well-being, fitness and strength of the practitioner. There are various types of hand mudras in yogamudra. We will discuss only five of them. As mentioned in our ancient texts that human body is made up of five elements (*tatva*), i.e. earth, water, fire, air and sky. These elements present in human body have relations with hands and fingers. We must have all these elements in control to live a healthy and happy life.

Five Elements of Body and Their Relation with the Fingers of Hand

1. Thumb Finger : Agni Tatva
2. Index Finger : Vayu Tatva
3. Middle Finger : Aakash Tatva
4. Ring Finger : Prithvi Tatva
5. Little Finger : Jal Tatva

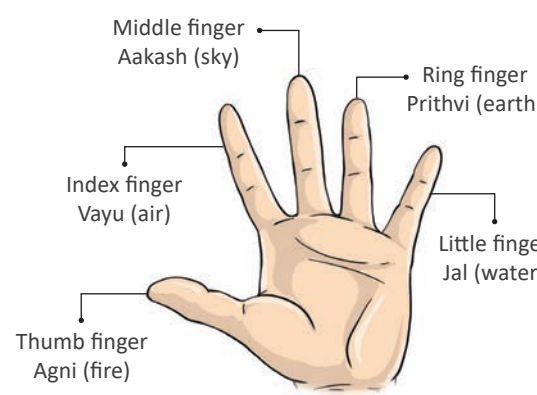


Figure 3.8 Fingers corresponding to different elements

Prithvi Mudra or Mudra of Earth

- Sit in Padmasana or Sukhasana.
- Now, let the tip of the ring finger touch the tip of the thumb with the other three fingers stretched out.
- Earth element gains strength and reduces all physical weaknesses.

- Skin shines and face glows.

Figure 3.9 Prithvi Mudra

Vayu Mudra or Mudra of Air

- Keep the index finger on the base of the thumb and press with thumb, keeping the other three fingers straight.
- It prevents all the diseases that occur due to the imbalance of air in the body.
- It corrects the disorder of the gas in stomach.
- It is useful for curing parkinson, gout, arthritis and paralysis with no need for any medicine.
- Pran Vayu Mudra and Apan Vayu Mudra are its two main variations.

Figure 3.10 Vayu Mudra

Shunya Mudra or Mudra of Emptiness

- Keep the middle finger at the mount of Venus and press it with the thumb.
- It reduces the dullness of the body.
- It helps in relieving earache quickly. This is the best hand mudra to overcome hearing related problems.

Figure 3.11 Shunya Mudra

Agni Mudra or Mudra of Sun

- First of all, bend the ring finger and press it with the thumb.
- It sharpens the centre of thyroid gland.
- It corrects indigestion problems.
- It helps in reducing cholesterol.
- It reduces anxiety.

Figure 3.12 Agni Mudra

Jal/Varun Mudra or Mudra of water

- Jal mudra is formed when the tip of the little finger touches the thumb, with the other three fingers stretched out.
- It balances the water content and prevents all diseases which arise due to the lack of water in the body.
- It retains the clarity of water content in the body.
- It prevents muscular shrinkage.

Figure 3.13 Jal Mudra

Yoga Mudrasana

Yoga Mudrasana is also known as forward bend sitting on heels.

1. Sit in Vajrasana. Keep your body straight and let the hands rest on the thighs. Relax the whole body.
2. Inhale slowly and stretch the arms above the head. Now bring them behind the back and grasp the left wrist with the right hand.
3. Exhale slowly and bend the body forward from the hips, keeping the back straight, until the forehead touches the floor. Your hip should remain on the heels.

4. Breathe normally and concentrate on the whole body.
5. Remain in this position for as long as you are comfortable.
6. Again inhale slowly and bring the body upright. At the same time, stretch the arms above the head.
7. Exhale and return to the initial position. Repeat this for 3 times.

Figure 3.14 Yoga Mudrasana

Benefits

- It calms the mind and nerves, and increases blood supply to the head.
- It increases the ability to concentrate and improves digestive function.

Contraindications

1. Avoid this asana in case of high blood pressure or dizziness.

Ushtrasana

Refer to previous section.

Kapalabhati

In Sanskrit, 'Kapal' means 'skull' and 'Bhati' means 'to shine'. So this can be translated as skull-shining or skull-cleaning breathing exercise. It purifies the head and the lungs.

Procedure

1. Sit in Padmasana and close your eyes and keep the spine straight.
2. Rest your hands on your knees or lower belly. Breathe normally for some time.
3. Now in a quick motion, contract your abdominal muscles and exhale all your air from the lungs.
4. Allow your lungs to fill without effort. Repeat this cycle for 5 times.
5. Allow your breathing to return to normal.

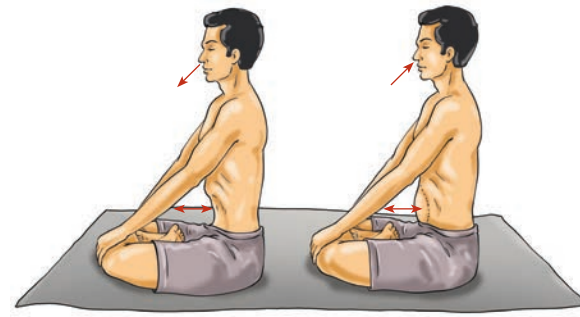


Figure 3.15 Kapalabhati

Benefits

- It helps in cleansing the respiratory tract.
- It helps in balancing and strengthening the nervous system.
- It helps in increasing concentration and reducing stress, anxiety and tension.
- It cures dark circles around the eyes.
- It is beneficial for diabetic patients.

Contraindications

1. Avoid this pranayama in case of ulcers, high blood pressure, slipped disc and spondylosis.
2. People suffering from headache, abdominal pain, nosebleed or respiratory injury should avoid this kriya.

ASTHMA: PROCEDURE, BENEFITS AND CONTRAINDICATIONS FOR TADASANA, URDHWAHASTOTTANASANA, UTTANMANDUKASANA, BHUJANGASANA, DHANURASANA, USHTRASANA, VAKRASANA, KAPALBHATI, GOMUKHASANA, MATSYASANA, ANULOMA-VILOMA

Tadasana

Refer to page 62 of textbook.

Urdhwahastottanasana

In Sanskrit 'Urdhwa' means 'upright', 'Hast' means 'hand' and 'Uttan' means 'stretched up'. This asana is performed in a standing position.

Procedure

1. Stand straight on the ground with feet together.

2. Raise your arms over your head while inhaling and interlocking the fingers of both hands.
3. Exhaling, bend your waist to left.
4. Hold this posture for some time. Inhale and come back to centre.
5. Repeat the practice towards right side.

Figure 3.16 Urdhwahastottanasana

Benefits

- This asana improves the curvature of the spine and cures spinal problems.
- It is useful in reducing obesity and relieving constipation.
- It is useful in curing neck pain also.
- It helps in increasing the height of children.

Contraindications

1. Avoid this asana in case of back, neck and shoulder pain.
2. People suffering with sciatic pain should not practise this asana.

Uttanmandukasana

In Sanskrit 'Uttana' refers to 'stretched up' or 'upright', 'Manduka' means 'frog', and 'asana' refers to 'pose'. The final position of this asana resembles an upright frog.

Procedure

1. Sit in Vajrasana.
2. Spread both the knees wide apart with the toes remaining together.
3. Now, raise your right arm and bend it at the elbow to place the right palm below the left shoulder.
4. Similarly, raise the left arm and fold it to place the left palm below the right shoulder.
5. The left wrist is placed crossing over the right one behind the head.
6. Maintain this pose for 5–10 breaths, expanding the chest fully and lengthening and arching the spine.
7. Release by lifting the left arm followed by the right arm and lower them to the knees.
8. Bring your knees closer to sit again in Vajrasana.

Figure 3.17 Uttanmandukasana

Benefits

- This asana improves the lung capacity.
- It is helpful in curing back pain and neck pain.
- It enhances the abdominal strength.
- It stretches the lungs and diaphragm and hence improves diaphragmatic movements.

Contraindications

1. Pregnant women should avoid this pose.
2. Avoid this in case of disability in the hip joint.

Bhujangasana

Refer to pages 55–56 of textbook.

Dhanurasana

Refer to previous section.

Ushtrasana

Refer to previous section.

Vakrasana

Refer to pages 64–65 of textbook.

Kapalbhati

Refer to previous section.

Gomukhasana

Refer to pages 59–60 of textbook.

Matsyasana

Refer to page 61 of textbook.

Anuloma-Viloma

In Sanskrit 'Anuloma' means 'in a natural order or direction' and 'viloma' means 'produced in reverse order'. Anuloma-viloma pranayama (Alternate Nostril Breathing) is practised to relax the body and mind. For managing stress, this pranayama should be practised daily.

Procedure

1. Sit in Padmasana or in any comfortable meditative position.
2. Keep the body straight and rest your hands on the respective knees.
3. Raise the right hand and place the right thumb on the right nostril and close it.
4. Now, inhale slowly through the left nostril.
5. Close the left nostril by the ring finger and the little finger and exhale slowly through the right nostril.
6. Again inhale through the right nostril.
7. Close the right nostril with thumb and exhale through the left nostril. This completes one round of Anuloma-viloma. Repeat this process 10 times.

Figure 3.18 Anuloma-Viloma

Benefits

- This pranayama helps in regulating blood pressure.
- It helps in curing depression, anxiety, stress, tension, etc.
- This is beneficial for people suffering from Bronchitis (Asthma).
- It improves blood supply to the brain.
- It purifies the blood.
- It improves the working of the lungs.
- This is the best breathing technique for boosting one's memory.

HYPERTENSION: PROCEDURE, BENEFITS AND CONTRAINDICATIONS FOR TADASANA, KATICHAKRASANA, UTTANPADASANA, ARDHA HALASANA, SARALA MATSYASANA, GOMUKHASANA, UTTAN-MANDUKASANA, VAKRASANA, BHUJANGASANA, MAKARASANA, SHAVASANA, NADISHODHANA PRANAYAMA, SITALI PRANAYAMA

Tadasana

Refer to page 62 of textbook.

Katichakrasana

Refer to previous section.

Uttanpadasana

In Sanskrit 'Uttana' means 'raised' and 'Pada' means 'leg'. In this asana, legs are raised. This is a traditional pose. It can be practised by raising one leg at a time or by raising both legs simultaneously.

Procedure

1. Lie on the back (supine) with legs together, hands by the sides of the body, palms facing the floor.
2. Inhaling, slowly raise the left leg at 30°, 45° and up to 60° angle and maintain the posture for 5-10 seconds.
3. Lower down the leg slowly at 45° and 30° come back on the floor while exhaling. Practise with right leg in a similar way. This is Ek-Pada Uttanasana.
4. Now, inhaling, slowly raise both the legs at 30°, 45° and up to 60° angle and maintain the posture for 5–10 seconds.
5. While exhaling slowly lower down both the legs at 45°and 30° angle and then to the floor. This is Dvi-Pada Uttanasana. You can perform this pose 3–5 times with one or both the legs.

Figure 3.19 Uttanpadasana

Benefits

- This asana is helpful in losing weight, especially the lower belly fat.
- It is beneficial in curing constipation, indigestion, nervous weakness and diabetes.
- It strengthens the abdominal muscles.
- It balances the navel centre (*nabhimandal*).
- It makes one's legs stronger.

Contraindications

1. Do not practise with both legs if suffering from back ache.
2. Avoid in case of ulcer and slipped disc.

Ardha Halasana

In Sanskrit 'Ardha' means 'half' and 'Hala' means 'plough'. It is a preparatory practise of Halasana. So, this is half plough pose.

Procedure

1. Lie in supine position or in Shavasana with legs together. Keep hands by the side of the body, palms facing the floor.
2. Raise your both legs up, stopping at 30°, 45° and 60° angles.
3. Further raise and bring the legs up to 90° without bending at knees. Maintain the posture comfortably for 10 seconds.
4. Lower down the legs, stopping at 60°, 45° and 30° angles.
5. Lower down slowly the legs on the floor. Keep hands by the sides of the body. Repeat this process 3–5 times.

Figure 3.20 Ardha Halasana

Benefits

- This asana strengthens the thigh muscles and calf muscles.
- It stretches leg muscles and ligaments of leg.
- It improves digestion and removes constipation.
- It helps in bringing about stability in the body and mind.

Contraindications

1. People having complaints of hernia, slipped disc, high blood pressure and sciatica should avoid the practice of this asana.
2. Avoid this asana if suffering from urinary disorders.

Sarala Matsyasana

Sarala Matsyasana is a back-bending asana. It is also known as easy fish pose.

Procedure

1. Lie flat on back (supine position).
2. Keep the top of your head on the yoga mat with the help of your hands.
3. Your neck, upper back and shoulders should be lifted from the ground.
4. Keep your hands at the sides of your body.
5. Breathe normally and keep your toes stretched out.
6. Maintain this position for 30 seconds and then relax.

Figure 3.21 Sarala Matsyasana

Benefits

- This asana stretches and relieves the neck and chest muscles.
- It is helpful in curing irritable bowel syndrome.

Contraindications

1. People suffering from high or low blood pressure should not practise this pose.
2. Avoid in case of cervical spondylitis and frozen shoulder.

Gomukhasana

Refer to pages 59–60 of textbook.

Uttanmandukasana

Refer to previous section.

Vakrasana

Refer to pages 64–65 of textbook.

Bhujangasana

Refer to pages 55–56 of textbook.

Makarasana

In Sanskrit, 'Makara' means 'crocodile'. The other name of this asana is crocodile pose or relaxation pose. In this pose, the body resembles the shape of a crocodile.

Procedure

1. Lie down on your stomach.
2. Keep the legs at a comfortable distance, with heels inside and toes pointing outward.
3. Now, fold your arms and elbows, and keep them under the head.
4. Place your head on the cushion of the arms. Close your eyes and relax.
5. To release the pose, bring the arms alongside the body and both the legs together.

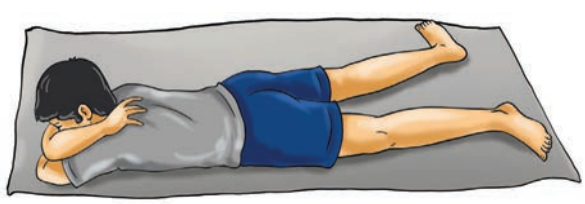


Figure 3.22 Makarasana

Benefits

- As it is a relaxing posture, so it calms the body and mind.
- It is beneficial in almost all psychosomatic disorders.
- It is beneficial for respiratory organs as well as digestive organs.
- It helps in getting rid of stress, anxiety, depression, tension and fatigue.

Contraindications

1. Do not give stress on the body during this asana.
2. Those having complaints of obesity and cardiac problems should avoid this pose.

Shavasana

Refer to pages 63–64 of textbook.

Nadishodhana Pranayama

'Nadishodhana' is a Sanskrit word meaning 'to purify the channel or nadis'. It is also known as anuloma-viloma. In this pranayama, the nostrils are alternatively used during each inhalation and exhalation.

Procedure

1. Sit in Padmasana or any comfortable meditative posture.
2. Keep the head and spine erect, and close your eyes.
3. Peacefully pay attention to the breath.
4. Keep the hands on the respective knees.
5. Adopt *nasagran mudra* of the right hand and *jnana mudra* of the left hand.
6. Close the right nostril with the thumb.
7. Keeping the respiration rate slow, deep and silent, inhale through the left nostril and exhale through the right nostril.
8. Inhale through the right nostril again.
9. Keeping the respiration rate slow, deep and silent, exhale through the left nostril.

Figure 3.23 Nadishodhana Pranayama

Benefits

- Nadishodhana Pranayama calms the mind, and improves focus and concentration.

- It improves blood supply to the brain.
- It helps in balancing the left and right hemispheres and promotes clear thinking.
- It is beneficial in asthma, allergies, high or low blood pressure, stress-related heart conditions, insomnia, chronic pain, endocrine imbalances and psychological conditions, such as tension, stress, anxiety, etc.
- It removes waste products like carbon dioxide and other toxic gases from body.

Contraindications

1. Perform this pranayama on empty stomach.
2. Keep the ratio of 1 : 1 between inhalation and exhalation.
3. Avoid producing any sound from the nose.
4. Avoid pressing hard on the nostrils.

Sitali Pranayama

'Sitali or Sheetali' means 'cooling'. It also means calm and passionless. As the name indicates, this pranayama cools the mind–body system. It is specially designed to reduce the body temperature. Practise of this pranayama brings harmony in the physical body and calms the mind.

Procedure

1. Sit comfortably in any meditative pose like Padmasana, Sukhasana, etc.
2. Keep the hands on the respective knees in *Jnana* mudra or *Anjali* mudra.
3. Roll the tongue from the sides to make the shape of a tube.
4. Inhale through this tube shaped tongue, fill the lungs with air to their maximum capacity and close the mouth.
5. Then slowly exhale through the nostrils.
6. Repeat this practice 8 to 10 times.

Figure 3.24 Sitli Pranayama

Benefits

- This pranayama purifies the blood.
- It has a cooling effect on the body.
- It is beneficial for people suffering from high blood pressure.
- It quenches thirst and appeases hunger.
- It relieves indigestion and disorders caused by phlegm (cough) and bile (*pitta*)
- It cures the disorders of *gulma* (chronic dyspepsia) and spleen or other related diseases.
- It is beneficial for skin and eyes.

Contraindications

1. Avoid this pranayama in case of cold, cough or tonsillitis.

EXERCISES

A. Objective Type/Multiple-Choice Questions

1 mark

I. **Multiple-Choice Questions:**

1. Which one of the following asanas is not done for obesity?

(a) Tadasana (b) Pavanmuktasana (c) Ardha Matsyendrasana (d) **Mandukasana**

2. Which of the following asanas is the best for asthma?

(a) Trikonasana (b) Chakrasana (c) **Bhujangasana** (d) Pavanmuktasana

3. Gomukhasana, Vakrasana and Matsyasana are helpful in the treatment of which disease?

(a) Diabetes (b) Obesity (c) **Asthma** (d) Back Pain

4. Which mudra is useful in ear pain?

(a) **Shunya Mudra** (b) Apan Vayu Mudra (c) Varun Mudra (d) Earth Mudra

B. Short Answer Type Questions

2 marks

1. Write any two benefits of katichakrasana.
2. Karthik's body weight is 20% more than his ideal body weight. He is a student of class 10. According to you, what can be the reasons for the extra weight of his body?
3. What is the procedure of Dhanurasana?
4. Write any two contraindications of Suryabhedana pranayama.
5. Write any two benefits of yoga mudrasana.

C. Short Answer Type Questions

3 marks

1. Write any three benefits of Ardha Halasana.
2. What is Yoga Mudra? Write about any two hand mudras.
3. Mention any three asanas to prevent diabetes.
4. Write the procedure of Anuloma-Viloma.
5. Explain the procedure of any two asanas for the prevention and management of hypertension.
6. Write any three benefits of sitali pranayama.

D. Long Answer Type Questions

5 marks

1. Explain the procedure, benefits and contraindications of Dhanurasana.
2. Explain the procedure, benefits and contraindications of Mandukasana.
3. Explain the procedure, benefits and contraindications of Uttanpadasana.
4. Explain the procedure, benefits and contraindications of Ushtrasana.
5. Explain the procedure, benefits and contraindications of Sarala Matsyasana.
6. Write the benefits and contraindications of Makarasana.

4 Physical Education and Sports for CWSN (Children With Special Needs – *Divyang*)

ORGANISATIONS PROMOTING DISABILITY SPORTS (SPECIAL OLYMPICS, PARALYMPICS, DEAFLYMPICS)

Special Olympics

The Special Olympics begun in 1968 by the efforts of Eunice Kennedy Shriver, the sister of former US President John F Kennedy, who believed in providing equal rights and opportunities to everyone, including people with intellectual disabilities for whom sports could act as a motivating factor for the stimulation of physical and mental growth.

Figure 4.1 Eunice Kennedy Shriver

The mission of the Special Olympics is to provide year-round sports training and organise athletic competitions in various Olympic-type sports for children and adults with intellectual disabilities. Its aim is to provide them continuing opportunities to develop physical fitness and courage, make them experience joy and help them in sharing of skills and bonds with their families, other Special Olympics athletes and the community.

Figure 4.2: Special Olympics logo is based on the sculpture "Joy and Happiness to All Children of the world."

It provides training to 5 million athletes and Unified Sports partners in around 172 countries and prepares them for competitions. Special Olympics competitions are organised all around the world. These include local, national and regional competitions, adding up to more than one lakh events in a year. The Special Olympics organisation is recognised by the International Olympic Committee. Special Olympics World Games are not held in the same year as the Olympic Games. Special Olympics has more than 30 Olympic-type individual and team sports that provide adequate training and competition opportunities to people with intellectual disabilities.

These games and sports include Athletics (Track and Field), Badminton, Basketball, Bocce, Bowling, Cricket, Cycling, Equestrian, Figure Skating, Floorball, Floor Hockey, Football (Soccer), Golf, Gymnastics (Artistic and Rhythmic), Handball, Judo, Kayaking, Netball, Powerlifting, Roller Skating, Sailing, Snowboarding, Snowshoe running, Skiing (Alpine and Cross-Country), Softball, Speed Skating (Short-track), Swimming (Pool and Open-Water), Table Tennis, Tennis, Triathlon and Volleyball. Table 2.3 lists year and host city/country of the Special Olympics (Summer) held so far.

Table 4.1: Year and host city/country of the Special Olympics (Summer)

Year	No.	Host city/Country
1968	1	Chicago, USA
1970	2	Chicago, USA
1972	3	Los Angeles, USA
1975	4	Mount Pleasant, USA
1979	5	Brockport, USA
1983	6	Baton Rouge, USA
1987	7	Notre Dame and South Bend, USA
1991	8	Minneapolis and Saint Paul, USA
1995	9	New Haven, USA
1999	10	Chapel Hill, Durham and Raleigh, USA
2003	11	Dublin, Ireland
2006	12	El Salvador San Salvador, El Salvador
2007	13	Shanghai, China
2011	14	Athens, Greece
2015	15	Los Angeles, USA
2019	16	Abu Dhabi, United Arab Emirates
2023	17	Berlin, Germany (Scheduled)

Special Olympics Bharat

Founded in 1988 as Special Olympics India, Special Olympics Bharat is a programme of Special Olympics International authorised to conduct Special Olympics for sportspersons with intellectual disabilities in India. Its name was changed to Special Olympic Bharat in 2001. It is now a National Sports Federation registered under the Indian Trust Act 1882 and the official nodal agency for all disabilities.

Following the principles of Special Olympics, Special Olympics Bharat aims to work for the inclusion of this previously neglected group in the field of sports. Till now, it has drawn an impressive number of nearly nine lakh athletes from all over the country.

In its own words, Special Olympics Bharat believes that:

- people with intellectual disabilities can also learn, enjoy and benefit from participation in sports, with the right help and encouragement.
- consistent training helps develop their sports skills, and also helps competing with those with equal abilities, tests those skills, measures their progress and provides incentives for personal growth.
- sports strengthen and benefit people with intellectual disability physically, mentally, socially and spiritually. These also help their families and the community at large, both through participation and observation.

Vision

The vision of Special Olympics Bharat is to:

- promote holistic development and training that go beyond the classrooms and bring the participants to the sports arenas, and further to the larger cultural and community spaces.
- encourage children to join and remain in school so that they receive the same education as their more abled counterparts.
- produce inspiring role models and also to give a moral and beneficial incentive to parents to send their children to school for both academic education and participation in sports.
- prepare and sensitise teachers to the specific needs of special children and build a cadre of physical education teachers from among the disabled community with the ability to work both within and outside of the school.
- involve the community at large for understanding and accepting people with intellectual disabilities and encourage local people to volunteer.
- make sure that all Special Olympic Bharat activities reflect the Olympic movement values and standards.

Mission

Special Olympics Bharat aims to provide year-round sports training and athletic competition. The types of sports included in the curriculum are all Olympic approved sports. Both children and adults with intellectual disabilities are covered in the programmes, thereby giving them a chance to strengthen their physique, boost their self-esteem and stimulate their emotional and social intelligence by engaging them in an atmosphere of active and healthy communication and friendship.

Oath

"Let me win. But if I cannot win, let me be brave in the attempt."

Achievements

1. Organised competitions in a wide variety of disciplines since 2002 on the national level, such as National Games, National Floor Hockey Championships, National Football and Table Tennis Championship, National Volleyball and Basketball Championship and National Badminton Championship.
2. A total of 1258 athletes from Special Olympics Bharat have participated in six World Winter Games and nine World Summer Games. Up to 2019, they have won 444 gold, 508 silver and 552 bronze medals in the World Summer and World Winter Games bringing a total of 1504 medals.
3. Around 400 sportspersons participated in the first Regional Asia Pacific Games held in 2013. Special Olympics Bharat brought home a total of 387 medals, with 111 gold, 136 silver and 140 bronze.
4. A total of 23,750 athletes participated in the five National Games held between 2001 and 2011.

Paralympics

The word 'Paralympics' is derived from the two Greek words 'para' means 'beside or alongside' and the other word is 'Olympics'. So, Paralympics are the parallel Games to the Olympics. The journey of the Paralympic Games started in 1960 side-by-side of the Olympics. For example, Olympic Games Tokyo 2020 was organised between 23 July and 8 August 2021. By the side of the Summer Olympics Tokyo 2020, the 16th Summer Paralympic Games was also held in Tokyo, Japan between 24 August and 5 September 2021.

The term 'paralympic' was officially used in the 1988 Summer Paralympics in Seoul, South Korea. This is organised by the International Paralympic Committee. This international sports event

Table 4.2: Year and host city/country of Paralympic games (Summer)

Year	No.	Host city
1960	1	Rome, Italy
1964	2	Tokyo, Japan
1968	3	Tel Aviv, Israel
1972	4	Heidelberg, Germany
1976	5	Toronto, Canada
1980	6	Arnhem, Netherlands
1984	7	New York, USA & Stoke Mandeville, UK
1988	8	Seoul, South Korea
1992	9	Barcelona & Madrid, Spain
1996	10	Atlanta, USA
2000	11	Sydney, Australia
2004	12	Athens, Greece
2008	13	Beijing, China
2012	14	London, UK
2016	15	Rio de Janeiro, Brazil
2020	16	Tokyo, Japan
2024	17	Paris, France (Scheduled)
2028	18	Los Angeles, USA (Scheduled)
2032	19	Brisbane, Australia (Scheduled)

involves athletes with a range of disabilities, which include impaired muscle power (for example, complete or incomplete, tetra-or paraplegia or paraparesis, muscular dystrophy, post-polio syndrome and spina bifida), impaired passive range of movement, limb deficiency (for example, amputation or dysmelia), leg length difference, short stature, hypertonia, ataxia, athetosis, intellectual impairment and vision impairment.

Table 4.2 lists the year and host city/country of Paralympic games (summer) held so far.

International Paralympic Committee

The International Paralympic Committee (IPC) was founded on 22 September 1989. It is an international non-profit organisation in Dusseldorf, Germany, to act as the global governing body of the Paralympic Movement.

IPC organises not only the Summer and the Winter Paralympic Games but it also coordinates and administers world championships and other competitions. The vision statement of IPC is 'To enable Para athletes to achieve sporting excellence and inspire and excite the world.'

The Paralympic Games are an international multi-sporting event involving athletes with a variety of physical and intellectual disabilities, including mobility disabilities, amputation, blindness, short stature, and cerebral palsy. The IPC oversees the organisation of these Games, which are held immediately after the Summer and Winter Olympics as Summer Paralympic Games and Winter Paralympic Games, respectively.

There are currently 28 Paralympic sports (22 summer and 6 winter) approved by the IPC. Table 4.3 lists the approved sports for Summer and Winter Paralympics.

Figure 4.3 The Paralympic logo

The Paralympic Movement

The Paralympic movement was started by Sir Ludwig Guttmann, who believed in the power of sports to change lives for the better. He valued the ability to participate and competing spirit in sports for those with disabilities. He envisioned how they could overcome their physical limitations to the greatest extent possible, and how they could also build their self-esteem by performing well. Guttman, a Jewish German who had fled Nazi Germany and was working at the Stoke Mandeville Hospital, organised the first games for the disabled in 1948. The participants were British World War II veteran patients with spinal cord injuries. The games were given the name '1948 International Wheelchair Games'.

Table 4.3: List of Summer and Winter sports for Paralympics

List of Summer Paralympic sports	
1.	Archery (since 1960)
2.	Athletics (since 1960)
3.	Boccia (since 1984)
4.	Cycling : Track & Road cycling (since 1984)
5.	Equestrian (since 1996)
6.	Football 5-a-Side (since 2004)-for vision impaired
7.	Goalball (since 1980)
8.	Judo (since 1988)
9.	Para-Badminton (since 2020)
10.	Paracanoe (since 2016)
11.	Paratriathlon (since 2016)
12.	Para-Taekwondo (since 2020)
13.	Powerlifting (since 1984)
14.	Rowing (since 2008)
15.	Shooting (since 1976)
16.	Sitting Volleyball (since 1976)
17.	Swimming (since 1960)
18.	Table tennis (since 1960)
19.	Wheelchair Basketball (since 1960)
20.	Wheelchair Fencing (since 1960)
21.	Wheelchair Rugby (since 2000)
22.	Wheelchair Tennis (since 1992)
List of Winter Paralympic sports	
1.	Alpine skiing
2.	Biathlon
3.	Cross-country skiing
4.	Para ice hockey
5.	Snowboard
6.	Wheelchair curling

Figure 4.4 The Paralympic games

The Mandeville Games became quite popular. They were held right after the Rome Olympics of 1960 in the same city. Over time, the number of participants increased to 400 athletes and 23 nations. In 1976, events for amputees and visually impaired sportspersons were added, and in 1980, athletes with cerebral palsy could participate for the first time.

A governing body was finally formed in 1982 called the International Coordination Committee of World Sports Organisations for the Disabled (ICC). The term 'paralympic' was officially used in the 1988 Summer Paralympics in Seoul, South Korea – the first time the games were held in the same Olympic host city and permitted to use the same facilities. Though the first Winter Paralympics took place in Örnsköldsvik, Sweden, in 1977, it was only in 1992 that the Winter Paralympics enjoyed the same privileges as their summer counterpart to make use of the host city's Olympic facilities.

The IPC replaced the ICC in 1989. In 1994, the IPC organised its first Paralympic Games. It consists of 176 National Paralympic Committees (NPC) and four disability-specific international sports federations. Although the IPC is a separate

body, it has close working ties with the IOC with members on the latter's committee participation. Its headquarters are located in Bonn, Germany.

The motto of the Paralympic Games is 'Spirit in Motion', and its symbol are three asymmetrical crescents called agito, circling around a central point. The crescents are red, blue and green in colour. The French musician Thierry Darnis composed the anthem 'Hymne de l'Avenir' ('Anthem of the Future').

Ceremony

The opening ceremony of the Paralympic Games is similar to that of the Modern Olympics, following the rituals of the Antwerp Summer Olympics of 1920. First, the flag of the host nation is hoisted and the national anthem is played. This is followed by a march past of participating nations in alphabetical order (according to the host's chosen language), with the host nation's participants entering last. After the speeches and entertainment programmes, the torch is lit.

DID YOU KNOW?

World Record Holders

1. Trischa Zorn, a swimmer, has won the most medals in the Summer Paralympic Games – a total of 55 medals (41 gold, 9 silver and 5 bronze).

Trischa Zorn

2. Ragnhild Myklebust, a skier, has won the highest number of medals in the Winter Paralympic Games. She won 27 medals (22 gold, 3 silver and 2 bronze).

India at the Paralympics

1. Murlikant Petkar, a swimmer, won India's first gold medal in the 1972 Paralympic Games in Germany.
2. In the 2021 Summer Paralympic Games in Tokyo, Avani Lekhara won a gold medal in 10 m Air Rifle and a bronze medal in 50 m Rifle events. She is the first Indian woman to win a gold medal in the Paralympic Games.

Avani Lekhara

Deaflympics

The Deaflympics are an international sports event for deaf athletes, held every four years, with both summer and winter games held alternately after a gap of two years. First held in Paris in 1924, it is the second oldest multination sports tournament. Over the years, it has gone by several other names, such as 'International Games for the Deaf' from 1924 to 1965, the 'World Games for the Deaf' from 1966 to 1999. The games were also sometimes referred to as 'World Silent Games'. The name 'Deaflympics' was adopted in 2001. Since its inception, it has been organised by *Comité International des Sports des Sourds* (CISS, 'The International Committee of Sports for the Deaf'). The CISS was recently renamed '*Le Comité International des Sports des Sourds*' (The International Committee of Sports for the Deaf, or ICSD). The CISS was inducted into IOC in 1955.

Figure 4.5 The Deaflympics logo

Though the Games started with just 148 athletes from nine countries, 336 participants from 27 nations participated in the 2015 Winter Deaflympics, while 3148 athletes from 97 countries competed in the 2017 Summer Deaflympics. The 2021 summer Deaflympics will be held in 2022 in Brazil.

The criteria of participating in Deaflympics are as follows:

- Participating athletes must have a hearing loss of at least 55 decibels in their 'better ear'.
- Hearing aids and cochlear implants are not allowed during the competition.
- The athletes cannot be guided by sounds, such as bullhorns, whistles and bells. Visual tactics such as waving flags, flashing lights, etc. are used for commencing and refereeing the games.

- Like all other sporting events, it also enforces a drug-free sports environment for all deaf athletes in collaboration with the World Anti-Doping Agency (WADA).
- It aims to provide deaf athletes a platform free of discrimination where they can compete under conditions of fairness and equality.

Table 4.4 Summer Deaflympics and Host City/ Country

Games	Year	Host City	Country
1	1924	Paris	France
2	1928	Amsterdam	The Netherlands
3	1931	Nuremberg	Germany
4	1935	London	Great Britain
5	1939	Stockholm	Sweden
6	1949	Copenhagen	Denmark
7	1953	Brussels	Belgium
8	1957	Milan	Italy
9	1961	Helsinki	Finland
10	1965	Washington DC	The United States
11	1969	Belgrade	Yugoslavia
12	1973	Malmo	Sweden
13	1977	Bucharest	Romania
14	1981	Koln	West Germany
15	1985	Los Angeles	The United States
16	1989	Christchurch	New Zealand
17	1993	Sofia	Bulgaria
18	1997	Copenhagen	Denmark
19	2001	Rome	Italy
20	2005	Melbourne	Australia
21	2009	Taipei	Chinese Taipei
22	2013	Sofia	Bulgaria
23	2017	Samsun	Turkey
24	2022	Caxias do Sul (Proposed)	Brazil

- Events included in Summer Deaflympics are athletics, badminton, beach volleyball, volleyball, basketball, bowling, road cycling, football, golf, handball, judo, karate, mountain biking, orienteering, shooting, swimming, table tennis, taekwondo, tennis, freestyle wrestling and Greco-Roman wrestling. Winter events include alpine skiing, cross-country skiing, curling, ice hockey and snowboarding. Tables 4.4 and 4.5 summarise the host city/country of various summer and winter deaflympic held so far.

Table 4.5 Winter Deaflympics and Host City/ Country

Games	Year	Host City	Country
1	1949	Seefeld	Austria
2	1953	Oslo	Norway
3	1955	Oberammergau	Germany
4	1959	Montana-Vermala	Switzerland
5	1963	Are	Sweden
6	1967	Berchtesgaden	West Germany
7	1971	Adelboden	Switzerland
8	1975	Lake Placid	The United States
9	1979	Méribel	France
10	1983	Madonna di Campiglio	Italy
11	1987	Oslo	Norway
12	1991	Banff	Canada
13	1995	Ylläs	Finland
14	1999	Davos	Switzerland
15	2003	Sundsvall	Sweden
16	2007	Salt Lake City	The United States
17	2015	Khanty-Mansiysk	Russian Federation
18	2019	Valtellina - Valchi-avenna	Italy
19	2023	Quebec City	Canada

EXERCISES

A. Objective Type/Multiple-Choice Questions

1 mark

I. **Multiple-Choice Questions:**

1. Which one of the following was the founder of Special Olympics games?

   (a) John F Kennedy (b) **Eunice Kennedy Shriver**

   (c) Baron de Coubertin (d) Sir Dorabji Tata

2. Which of these is not one of the colours of the three crescents in the Paralympics logo?

   (a) Red (b) **Yellow** (c) Blue (d) Green

3. What is the meaning of ataxia, which is one of the types of physical impairments recognised by the International Paralympic Committee?

   (a) Reduced ability of a muscle to stretch (b) Significant bone shortening due to trauma

   (c) Partial or total absence of bones (d) **Lack of coordination of muscle movement**

B. Short Answer Type Questions

2 marks

1. What is Special Olympics?
2. Who participate in the Paralympic Games?
3. Who started the Paralympic Games?
4. What are the Deaflympics about?

C. Short Answer Type Questions

3 marks

1. Write briefly about the Special Olympics?
2. What do you understand by Paralympics?
3. How are the Paralympic Games held?

D. Long Answer Type Questions

5 marks

1. Write a note on the history of Paralympic Games.
2. Discuss Paralympic in detail.
3. Discuss about Special Olympics Bharat.

6 Test and Measurement in Sports

FITNESS TEST – SAI KHELO INDIA FITNESS TEST IN SCHOOL

AGE GROUP 5–8 YEARS/ CLASS 1–3

BMI (Body Composition)

Body composition is a physiological characteristic that affects the individual's capacity of doing daily activity. In other words, the productivity of human body performance depends directly on the composition of the body. It is the ratio of the muscle/protein mass and the fat content of the body. Body size such as height, length and circumference are also grouped under this component. The test performed is BMI (Body Mass Index), which is calculated from body Weight (W) and height (H).

BMI = W / (H x H), where W = body weight in kilograms and H = height in meters. The higher score usually indicates higher levels of body fat.

Procedure:

Equipment: Stadiometer

How to Measure Height

1. Stand straight with heels together. Remove shoes or any heavy clothes. Keep arms normally by the side.
2. Both heels must touch the base of the stadiometer.
3. The student is instructed to look straight ahead and take a deep breath and hold for few seconds.
4. Mark the highest point on skull.
5. Measure the height before exhalation.
6. Measurement is taken to the nearest 0.1cm.

Figure 6.1 Measuring height accurately is important to calculate the BMI.

How to Measure Weight

1. Take a digital scale and place it on a horizontal floor.
2. The student is instructed to remove shoes and heavy clothing.
3. The student is directed to stand with both feet in the centre of the scale.
4. Record the weight to the nearest decimal fraction (for example, 26.1 kg).

Flamingo Balance Test (Balance)

Purpose: To check the ability to balance successfully on a single leg.

Objective: This single leg balance is conducted to assess the strength of the leg, pelvic, and trunk muscles as well as static balance.

Equipment: Non-slippery even surface, Stopwatch; this can be done by just standing on a beam.

Procedure:

1. Stand on the beam. Keep balance by holding the instructor's hand (if required to start).
2. 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.
3. Start the watch as the instructor lets go of the participant /student.
4. Pause the stopwatch each time the student loses balance (either by falling off the beam or letting go of the foot being held).
5. Resume the timing again until she/he lose balance. Count the number of falls in 60 seconds of balancing.
6. If there are more than 15 falls in the first 30 seconds, the test is terminated.

Figure 6.2 Flamingo Balance Test

Scoring: The total number of falls or loss of balance in 60 seconds of balancing is recorded.

If there are more than 15 falls in the first 30 seconds, the test is terminated.

Suggestions for Test Administration: Participants should be encouraged to focus eyes on stationary objects straight ahead.

Suggested Physical Activities to Improve Balance (Flamingo Test): To improve balance, participants/ students should practise one foot balance, walking on toes and heel toe walking, walking on beam, walking on straight lines, skipping, hopping, Vrikshasana, etc.

Plate Tapping Test (Coordination)

Purpose: To test the speed and coordination of limb movement.

Equipment: Table (adjustable height), 2 yellow discs (10 cm radius), rectangle (30 × 20 cm), stopwatch

Procedure:

1. Adjust the table height so that the student can stand comfortably in front of the discs. The two yellow discs are placed with their centres

60 cm apart on the table. The rectangle is placed equidistant between both discs.

2. The non-preferred hand is placed on the rectangle. The student should move her/his preferred hand back and forth between the discs over the hand in the middle as quickly as possible.
3. Repeat this action for 25 full cycles (50 taps).

Figure 6.3 Plate Tapping Test

Scoring: The teacher/coach records the time taken to complete 25 cycles.

Suggestions for Test Administration: Students should be encouraged to stand in a balanced posture, feet apart to shoulder width. Results are usually better if the student can maintain constant pace during most of the run.

Suggested Physical Activities to Improve Coordination (plate tapping test): Students can improve by practising paper airplane throw, handkerchief catch, Frisbee and ruler drop.

Computing Basal Metabolic Rate (BMR)

Basal Metabolic Rate (BMR) helps to calculate the daily energy expenditure of an individual to perform basic level of activity. Using BMR, an individual can find out the minimum number of calorie requirement for her/his body needs in order to function for 24 hours.

To calculate BMR, the Harris–Benedict formula or Mifflin-St Jeor formula is used. The Harris–Benedict equation was revised by Mifflin and St Jeor in 1990:

Men: BMR = (10 × weight in kg) + (6.25 × height in cm) – (5 × age in years) + 5

Women: BMR = (10 × weight in kg) + (6.25 × height in cm) – (5 × age in years) – 161

Example: Let the weight of 18-year-old Kunal is 54 kg and height is 166 cm. Then the BMR will be

= (10 × 54 kg) + (6.25 × 166 cm) – (5 × 18 years) + 5

= 1492.5 calories

Factors that Influence BMR: Age, weight, height, gender, genetics, body composition, exercise, food habits, environmental temperature, etc. are the factors that influence the BMR of a person.

If an individual increases her/his daily activity/ exercise regime, the energy requirement in calories also increases. As a result, Active Metabolic Rate (AMR) also increases. AMR can be calculated using the following formulas:

1. Sedentary life (little or no exercise):
   AMR = BMR × 1.2
2. Light active life (exercise 1–3 days/week):
   AMR = BMR × 1.375
3. Moderately active life (exercise 3–5 days/week):
   AMR = BMR × 1.55
4. Active life (exercise 6–7 days/week):
   AMR = BMR × 1.725
5. Very active life (hard exercise 6–7 days/week):
   AMR = BMR × 1.9

EXERCISES

A. Objective Type/Multiple-Choice Questions

1 mark

I. **Multiple-Choice Questions:**

1. Flamingo Balance Test is done to test the

   (a) Strength of leg (b) Strength of pelvic (c) Strength of trunk muscle (d) **All of these**

2. Plate tapping test is conducted to test

   (a) Flexibility (b) Endurance (c) **Limb movement** (d) None of these

B. Short Answer Type Questions

2 marks

1. Write the name of any two equipment needed for Plate Tapping Test
2. How is scoring done in Flamingo Balance Test?
3. Write the formula for calculating Basal Metabolic Rate.

C. Short Answer Type Questions

3 marks

1. Write the steps of Plate Tapping Test.
2. What are the factors on which BMR of a person depends?

D. Long Answer Type Questions

5 marks

1. Write in detail about Flamingo Balance Test.
2. Describe various formulas to find out AMR using BMR values.
3. Explain the procedure to test Body Mass Index of a person.

8 Biomechanics and Sports

EQUILIBRIUM – DYNAMIC AND STATIC AND CENTRE OF GRAVITY AND ITS APPLICATION IN SPORTS

Meaning of Equilibrium

A body is said to be in equilibrium when all the forces acting on it are counterbalanced by equal and opposite forces and their sum becomes equal to zero. A state of equilibrium is also achieved when the body's centre of gravity (COG) is over its base of support and the line of gravity falls within the base. The size of the base of support should be directly proportional to that of the body surface. A sitting position would have a larger base of support than a standing position and a lying position would require a larger base of support than a sitting position.

It should be noted that a body being at equilibrium does not automatically mean that the individual forces involved are of equal magnitude. They should however be so arranged that they cancel out each other. When a body is at equilibrium, it has an acceleration of 0 m/s^2; it can be either at rest or in motion with the same speed and direction.

Centre of Gravity and Types of Equilibrium

To understand the two types of equilibrium, let us first go back to the fundamental physics and remember what COG means. A body's COG is the point at which its weight is evenly distributed and all sides of the body are in balance. It is an imaginary, still an important, point where the entire mass of the body can be located.

The COG of a person standing erect with hands at the side is located at the hips, but it is difficult to determine COG for most positions, whether the body is at rest or in motion (in this case, it may even lie outside of the body). COG shifts in the direction of the movement.

Based on the position of COG, equilibrium is divided into:

1. **Static Equilibrium:** Equilibrium is achieved when the COG is resting or in stable position, such as sitting, standing, etc.
2. **Dynamic Equilibrium:** Equilibrium is achieved when the COG is in motion, like running, doing cartwheels, and so on.

Principles of Stability

What we call 'balance' in sports is another word for 'stability'. The degree of stability is influenced by the following factors.

1. **Area of Base of Support:** Stability is directly proportional to the area of the base on which the body rests. If the base increases, stability increases and vice versa. For example, a person standing with both feet apart is more stable than a person standing with both feet together. In sports like boxing, wrestling and weightlifting, the feet are kept apart to cover a large base of support so that the player can maintain his balance.
2. **Vertical Distance of the COG from the Centre of the Base of Support:** Stability is indirectly proportional to the vertical distance of the COG of the body from the centre of the base of support. The nearer the COG to the centre of the base of support, the more stable the body is. In shot-put, the COG of the body is lowered by bending the knees so that the player can avoid going out of the circle and thus committing a foul.

Figure 8.1 Large base of support when both feet are apart.

3. **Location of the COG:** The COG of a body must fall within its base for equilibrium to exist.
4. **Horizontal Distance of the COG from the Direction of Movement:** Stability is directly proportional to the horizontal distance of the COG from the edge of the base towards the given direction of movement.
5. **Weight of the Body:** Stability is directly proportional to the weight of the body. The heavier the body the more is the stability and hence, this explains the different weight categories in sports like boxing, wrestling and judo.
6. **Friction:** Stability is directly proportional to friction. When there is insufficient friction between two bodies, there is greater chance of slipping and therefore less stability.

Figure 8.2 We see high COG and very less stability in a few movements in gymnastics and other sports.

Equilibrium: It is a state when the resultant of all the forces acting on a body becomes zero.

Based on the degree of stability, equilibrium is divided into three types:

1. **Stable Equilibrium:** When the body tries to come back to its original position after being moved. The base of support widens and COG is closer to this base of support.
2. **Unstable Equilibrium:** When the body never returns to its initial position and shifts to a new equilibrium position. The base of support is narrow and the height of COG is more.
3. **Neutral Equilibrium:** Sometimes, when a body is disturbed, it moves slightly, acquiring a new position where the base of support, the vertical distance of COG and positioning of COG do not change.

Application in Sports Biomechanics

Equilibrium, stability and COG form the bases of many scientific studies of sports mechanics and developments and upgrade of techniques. Understanding these concepts is advantageous for gymnasts, runners, footballers, weightlifters and a host of various other sportspersons, as they give

an idea of how to hold positions and stay balanced while performing; how to increase their speed and minimise physical effort, etc.

PROJECTILE IN SPORTS

Meaning of Projectile

When we throw an object near the surface of the earth obliquely, it follows a curved path. Such a particle is called projectile. A projectile may be defined as any object that once projected, continues in motion by its own inertia and is influenced only by the downward force of gravity. That is, it travels under the influence of gravity. Though it is natural that the projectile in motion must also be acted upon by resistance of air during flight, it should be noted that this force provided by air resistance would be negligible. A balloon filled with helium will rise up on its own but not behave like a projectile, since the drag forces and buoyant forces acting on it actively compete with the force of gravity; a basketball shot towards a hoop, on the other hand, is affected minimally by the other forces. It will go up, undergo a short horizontal journey, but fall vertically quickly enough. Examples of projectiles are rockets and missiles launched into the air, a ball rolling off the edge of a table, a bullet fired from a gun, an arrow released from a bow, etc.

All projectiles when thrown follow a curved or parabolic path; this path is called projectile trajectory. Even in the case of a bullet, the path it travels is curved, not straight. To understand this, let us take the example of a ball thrown into the air. The path it follows is a horizontal one, while the force acting on it (the force of gravity) is a vertical one. The horizontal distance travelled by the ball each second is constant, but due to gravity, its path is deviated with each second as well; it will continue falling vertically with greater distance in a curved manner.

Factors Affecting Projectile Motion

Some of the factors affecting projectile motion are:

1. **Angle of Projection:** The range of a projectile motion depends on the angle of projection. Range is the horizontal distance from the point of projection to where the projectile hits the earth's surface. A particular angle of projection corresponds to the maximum range. When the projectile is projected at an angle of 45°, it will cover the maximum range. An angle larger than 45° will cover a shorter distance, larger height and have a longer time of flight. If an object is projected at 90° angle, it will come back to its original position from where it is being projected.

   Figure 8.4 shows how different angles of projection correspond to different ranges. The projectile projected at an angle of 30° has its range AB; the one projected at 60° has its range as AC; and the third projectile projected at 45° has its range as AD, which gives the maximum range out of the three. In sports, depending on the game one is playing we have to use a different angle of projection. For throwing a basketball, the angle released should be above 45° and in tennis, a lower angle of 40–50° is used

Figure 8.3 A missile launched into air follows a curved path, i.e. a projectile trajectory.

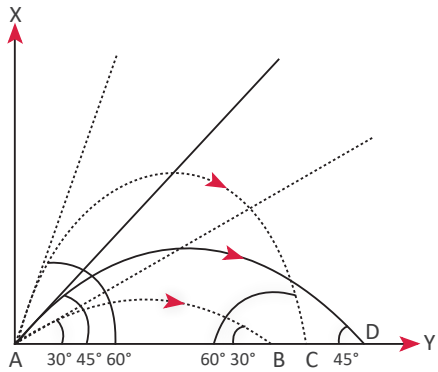
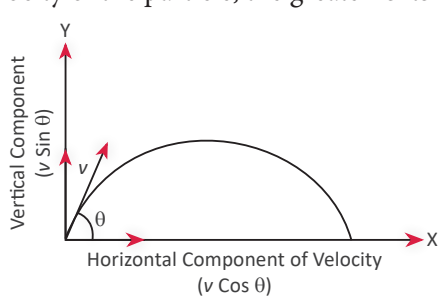


Figure 8.4 When an object follows a parabolic path, it travels different distances at different angles.

2. **Projection Height Relevant to the Landing Surface:** If the height in which the particle has to be projected lies at the same level as the landing surface, maximum range will occur at the angle of 45°. When the level of the landing surface is lower, the angle should be projected with an angle less than 45°. Alternately, when the level of the landing surface is higher, the angle should be greater than 45°. The greater the height of projection, the larger the distance travelled by the projectile. Therefore, for a given value of initial velocity and the angle of release, the maximum range also depends on the height of projection.

3. **Initial Velocity:** Initial velocity is the velocity with which the projectile is being projected. The velocity of a projectile motion can be reduced into two components: the horizontal component along the X-axis and the vertical component along the Y-axis. The higher the initial velocity of the particle, the greater is its range.



v — Initial Velocity
θ — Angle of Projection

Figure 8.5 Graph for initial velocity

4. **Gravity:** Gravity is the downward pull of the object towards the centre of earth. Gravitational force due to earth is always attractive in nature. As discussed above, the parabolic path of a projectile is a product of the gravitational force acting on it. This force helps the projectile to return to the surface of the earth. The greater the mass of the object, the higher the gravitational pull will be.

5. **Air Resistance:** The effect of air resistance on the projectile motion is small; it acts opposite to the direction of flight. Air resistance affects the horizontal component of the projectile. The amount of air drag experienced by a projectile depends on the geometry of the projectile; if the shape of the body is streamlined, it experiences lesser drag and covers a larger range. If the speed of the projectile is higher it will face greater air resistance. Another factor is the surface of the object. Rough surfaces experience greater air resistance. The fourth factor is surface to volume ratio: the larger the surface to volume ratio, the greater the air resistance. The final determinant is mass. Smaller mass translates to greater air resistance. A feather, for example, will experience more air resistance than a cricket ball.

6. **Spin:** Another factor which affects projectile motion is spin. When spin action is induced in a projectile, the motion becomes more stable and accurate. Both the magnitude and the direction of the spin influence the range covered by a projectile.

   One example of spin motion is the game of tennis. There are three ways of hitting a tennis ball: flat (no spin), topspin and backspin. Due to the spinning action, the amount of drag experienced at the top of the ball is different from the one at the bottom. The greater the amount of drag, the greater will be the pressure. In the case of topspin, the top part of the ball experiences higher pressure as compared to the bottom and as air moves from the higher pressure to the lower pressure region, the ball dips and topspin covers less distance. In backspin, lower pressure is created at the top of the ball, hence time of flight of the ball will be longer than the topspin which results in a larger range. Thus, spin effect is related to the pressure created on the top and bottom of the ball.

EXERCISES

A. Objective Type/Multiple-Choice Questions

1 mark

I. Multiple-Choice Questions:

1. What are the two sub-categories of equilibrium based on the position of centre of gravity?
   (a) **Static and dynamic** (b) Stable and potential
   (c) Physical and mental (d) Unstable and neutral
2. Which of the following is not an example of projectile?
   (a) A missile launched into the air (b) An arrow released from a bow
   (c) A bullet fired from a gun (d) **A car running on the road**

II. Case-Based Questions: CBQ

'Balance' in sports is another word for 'stability'. The degree of stability is influenced by a number of factors such as:

- Area of Base Support
- Vertical Distance of the COG from the Centre of the Base of Support
- Location of the COG
- Horizontal Distance of the COG from the Direction of Movement
- Weight of the Body
- Friction

On the basis of the information given above, answer the following questions:

1. Stability is directly proportional to ..... from the edge of the base towards the given direction of movement.
   (a) vertical speed of the COG (b) horizontal speed of the COG
   (c) vertical distance of the COG (d) **horizontal distance of the COG**
2. Why do different sports have different weight categories?
   (a) because stability is inversely proportional to the mass of the body
   (b) because stability is directly proportional to the mass of the body
   (c) because stability is inversely proportional to the weight of the body
   (d) **because stability is directly proportional to the weight of the body**
3. When there is insufficient friction between two bodies there is ..... chance of slipping and Therefore .....
   (a) lesser; less stability (b) greater; more stability
   (c) **greater; less stability** (d) lesser; more stability

B. Short Answer Type Questions

2 marks

1. What is projectile trajectory? (CBSE 2016)
2. An object thrown into the space either horizontally or at an acute angle under the gravity is called a projectile. Name the two forces which act on a projectile. (CBSE 2017)
3. To cover the maximum distance at what angle should an object be released? (CBSE 2016)

C. Short Answer Type Questions

3 marks

1. Give a detailed explanation about centre of gravity and its applications in sports.
2. How can the principles of stability be used in sports?

3. What is projectile? Explain any three factors that affect a projectile trajectory. (CBSE 2017)
4. How is projectile motion influenced by:
   (a) angle of projection (b) height of projection (c) gravity
   (d) air resistance (e) initial velocity (f) spin?
5. Explain why are the angles of release for shot put, javelin and discus throws different. (CBSE SP 2015)

D. Long Answer Type Questions

5 marks

1. Explain the meaning and types of equilibrium.
2. Explain two factors that influence the centre of gravity.
3. Discuss the factors that affect projectile motion.

9 Psychology and Sports

PSYCHOLOGICAL ATTRIBUTES IN SPORTS – SELF-ESTEEM, MENTAL IMAGERY, SELF-TALK, GOAL SETTING

Meaning of Psychological Attributes

An attribute is a quality, character, or characteristic that someone or something has. In other terms, it is a quality or characteristic of an individual that we see in her/his social interactions. A person can also improve her/his psychological attributes like self-esteem, mental imagery, self-talk, goal setting, etc. through the active participation in games and sports.

Let us discuss them one by one.

Self-Esteem

According to Collins Dictionary, "Your self-esteem is how you feel about yourself." For example, if you have low self-esteem, you do not like yourself, you do not think that you are a valuable person, and therefore you do not behave confidently.

In other words, self-esteem may be defined as how much you appreciate and like yourself regardless of the circumstances. It is defined by many factors including self-confidence; feeling of security; identity; sense of belonging and feeling of competence.

Self-esteem is determined by how much worth and competence we place on ourselves.

We may boost our self-esteem by having a favourable perception of our bodies and developing physical skills and talents via sports. We build good self-worth as a consequence of the praise we receive from family and friends, as well as the social interactions we form as a result of our participation in sports and physical exercises.

However, if we believe our bodies are insufficient, unsuited, or improper for our chosen activity, we may be subject to poor self-esteem in sports and physical exercises. We may believe that our self-worth is determined by our successes and losses rather than our talents and objectives. Sport engagement might result in social isolation and a lack of family support. To develop good self-esteem, all of these negative feelings must be refocused.

Participation in sports activities improves positive self-esteem of an individual. Physical education teachers, coaches and trainers play an important role in building positive self-esteem in students, athletes and players. Mutual respect, calling them by their names, positive encouragement, listening to them, acknowledging their feelings, solving their problems, rejecting any type of discrimination on the basis of gender, caste, age, physical appearance, ability, etc. by the PE teachers/ coaches can boost the self-esteem of the students/players.

Mental Imagery

Mental imagery or visualisation means imagination in the mind. Visualisation or mental rehearsal are other terms for imagery.

To practice your sport in your head, you must use all of your senses (for example, see, feel, hear, taste, and smell). Mental imaging is the process through which we recreate experiences in our minds using information from our memories. Dreaming is an unstructured sort of vision, but we are interested in organised imagery, in which the athlete employs his or her imagination to reproduce certain scenes in a controlled manner. There are a variety of methods for visualising images or experiences in the mind (for example, you can imagine yourself feeling movement internally or externally as a spectator), but research shows that the greater an athlete's ability to control imagined movements, the greater the potential performance enhancement.

Mental image helps the players to visualise their problematic situations before, during and after the competitions and helps in advance to coup up with the problems. It brings confidence, awareness and helps the players to control their movements. Athletes or individuals can visualise the dreams or goals of their life and do the efforts to accomplish those goals. It is a kind of mental practice in which a player has to rehearse the skill in her/his mind before applying it in reality. Posturising the perfect skill helps them to prepare to execute the skill. In this way, an athlete enhances her/his performance. There are various uses of imagery in sports.

Self-Talk

Self-talk is the communication which we do with ourselves. We talk to ourselves and these inner dialogues are important. What we say to ourselves usually helps to shape and predict how we act and perform. For example, if an athlete says to herself/himself that she/he can perform the particular skill, this statement can enable her/him to perform the same skill. When she/he says, no, she/he cannot perform the particular skill, then in reality she/he is not able to perform the same skill.

Self-talk is related to motivation. If someone is saying to herself/himself that she/he is looking good and slimmer than before, in this way she/he may improve her/his motivation. Self-talk also helps to deal with distractions. It is categorised into three parts. They are as follows:

Positive Self-talk: It is a motivational talk. For example, an athlete says to herself/himself that she/he can perform well.

Instructional self-talk: In this, a player focuses on the technical or task-related aspects of the performance execution. For example, 'Let the ball go' if it is over the waist during batting in cricket or raise your leg to release the ball for basketball shoot or bend your knees, etc.

Negative talk: It is a critical and self-demeaning. It increases the anxiety and stress level of the player. An athlete says that she/he can never win or she/he cannot perform well. These negative self-talk will not enhance the performance or create positive emotions. These create the self-doubts. There are many uses of self-talk like enhancing focus, increasing confidence, enhancing motivation, improving mental preparation as well as improving skills, acquiring new skills, initiating action, breaking bad habits and sustaining efforts.

Goal Setting

It is one of the psychological factors that have been found to be the most effective performance enhancement techniques in sport psychology. Goal setting not only enhances the performance of the sportspersons, but also improves the psychological state of an athlete. The very few, however, are aware of the goal setting. Once the individual is able to accomplish small targets, she/he can move on to bigger goals, such as getting into the school or local sports teams, for which she/he will have to carve extra time from her/his daily schedule.

Goal setting technique is widely used as a cognitive approach of motivation. To be a successful person, commitment is necessary. Focus can be maintained by keeping the ultimate destination in mind and envisioning the feeling of satisfaction and pride that will come along with victory.

The concept of objective and subjective goals has been used by persons in sport and exercise to look at goals.

- 'Attaining a certain standard of competency on a job, generally within a set period' is the emphasis of objective goals. Objective goals

include attempting to lose a given amount of weight in three months, striving for a specific team win–loss record by the end of the season, and obtaining a faster performance time by the following competition.

- Subjective objectives are broad declarations of purpose that are neither quantifiable or objective (for example, 'I want to perform well'; 'I want to have fun').

Types of Goals

1. **Outcome goals** are usually focused on the competitive outcome of an event, such as winning a race, receiving a medal, or outscoring an opponent. As a result, achieving these objectives is contingent not only on your own efforts but also on your opponent's ability and play. You might play the finest tennis match of your life and yet lose, failing to accomplish your desired outcome of winning the match.
2. **Performance goals** are focused on meeting standards or reaching performance targets independently of other rivals, generally by comparing one's own prior performances. As a result, performance targets are more adaptable and within your control.
3. **Process goals** are concerned with the steps that an individual must take in order to execute or perform effectively during a performance. A swimmer, for example, would establish a goal for herself to maintain a long, stretched-out arm pull in her freestyle stroke.

EXERCISES

A. Objective Type/Multiple-Choice Questions — 1 mark

I. **Multiple-Choice Questions:**

1. Which of the following is not necessary for enhancing the self-esteem of a player?

   (a) Calling her/him by name
   (b) Respecting her/him
   (c) **Asking her/his gender**
   (d) Appreciating her/his efforts

2. An athlete is having doubt about her/his own skills during a match. She/he is showing

   (a) Positive self-talk
   (b) **Negative self-talk**
   (c) Instructional self-talk
   (d) None of these

B. Short Answer Type Questions — 2 marks

1. What are the benefits of positive mental imagery in sports? Write about any two.
2. Write any two ways to improve the low self-esteem.

C. Short Answer Type Questions — 3 marks

1. What is instructional self-talk? Explain with example.
2. Why is goal setting important?

D. Long Answer Type Questions — 5 marks

1. Write about any two psychological attributes in detail.
2. What is self-talk? Describe its types with example.
3. What are different types of goals? Explain briefly.

10 Training in Sports

CONCEPT OF TALENT IDENTIFICATION AND TALENT DEVELOPMENT IN SPORTS

In sports ecosystem, talent is defined as 'the presence or absence of particular skills or qualities identified at earlier time points that correlate to or predict expert future performance.' Talent identification can also be defined as 'that process by which children are encouraged to participate in the sports at which they are most likely to succeed, based on results of testing selected parameters. These parameters are designed to predict performance capacity, taking into account the child's current level of fitness and maturity'.

Experts define talent identification in the following manner:

'Sport talent identification is the process of recognizing current participants with the potential to become elite players. It entails predicting performance over time by measuring physical, physiological, psychological and social attributes as well as technical abilities, either in isolation or in combination'.

– *Regnier et al.*

'Talent identification is the process of recognising current players that have the potential to excel; while talent selection is the acceptance of individuals into representative teams and development programmes'.

– *Vaeyens, Lenoir, Williams and Philippaerts*

'Talent identification involves an attempt to predict the future capacity of performance of an individual'.

– *Abbott and Collins*

The steps involved in talent identification and development include Detection, Identification, Development and Selection.

The key components of talent identification include:

1. Physical characteristics like height, weight, body shape, size, etc.
2. Physiological characteristics like strength, speed, flexibility, endurance, agility, etc.
3. Health and Heredity characteristics like muscles, any hereditary disorder, immunity, etc.
4. Sports Specific Basic Skills like dribbling, passing, etc. for football.
5. Psychological and Cognitive characteristics like learning and adaptation to new skills, behaviour, attitude, effort, motivation, maturation level, perception, etc.
6. In the course of playing a match, it is easy to identify talented players through their performance in competition.
7. Some specialised motor fitness tests, game-related perfection test also help to identify talented players.

Importance of Talent Identification

1. It helps in the discovery of great talents.
2. It helps in recognising the hidden talents.
3. It helps talented students/children recognised at early stage to show their talent at the extreme.
4. It helps in finding big assets for schools/colleges/state/country.

National Talent Search Schemes in India

Sports Authority of India (SAI) under Khelo India Programme selects talented players from all parts of the country and develops them into competitive players. There are many talent identification and development schemes that SAI offers. Schemes are based on age group and discipline. These trained players take part in various national and international tournaments.

INTRODUCTION TO SPORTS TRAINING CYCLE – MICRO, MESO, MACRO CYCLE

In Physical Education Class 11, you have already learnt about meaning and concept of sports training, and principles of sports training.

Sports training is the process through which the athlete's overall physiological efficiency is

maximised in a specific sports discipline and its accompanying rules and limitations. This is achieved by introducing the athletes to, and developing their expertise in the physical component and the technical component.

You read about various principles of sports training like the Principle of Continuity, Principle of Periodisation, the Principle of Overload, the Principle of Progression of Load, the Principle of Rest and Recovery, the Principle of Individual Differences, the Principle of General and Specific Preparation, the Principle of Specificity, the Principle of Active Involvement, the Principle of Variety, the Principle of Warm-up and Cool Down, the Principle of Ensuring Results, and the Principle of Cyclicity.

Sports Training Cycles

In sports training, there are different types of training cycles such as macrocycle, mesocycle and microcycle. Macrocycle is the longest and lasts up to three to 12 months. Mesocycle has a medium period of three to six weeks while microcycle is the shortest of them as it has a duration of only three to ten days.

Macrocycle

This training cycle is considered the longest. Its duration can be from three to 12 months or even longer. Macrocycle is formed by a certain arrangement of mesocycles. In a macrocycle, the last mesocycle is formulated to ensure recovery and relaxation and for effective transition to the next macrocycle.

The macrocycle typically includes four stages of a periodized training programme, for example this maybe;

- Endurance
- Intensity
- Competition
- Recovery

Or alternatively, these stages could be displayed as four periods;

- Preparation
- Pre-competition (optional)
- Competition
- Transition

A macrocycle is a yearly strategy that aims to peak for the year's target competition. There are three periods in the macrocycle: preparatory, competition and transitional. Macrocycle is a yearly cycle of training in the case of single periodisation. But in the case of double or triple periodisation there are two or three macrocycles in a year. In high performance training stage, macrocycles are generally arranged in certain manner to form longer cycles of training. For example, Olympic cycle of training is usually longer. The main objectives of macrocycle are to achieve top form in a particular completion at a particular time, and increase of performance capacity to higher level.

Table 10.1: Division of an annual plan into phases and training cycles

The Annual Plan											
Phases of training	Preparatory					Competitive				Transition	
Sub-phases	General preparation			Specific preparation			Pre-competitive	Competitive			Transition
Macro-cycles											
Micro-cycles											

Mesocycle

Mesocycle is a training cycle of medium duration. It has a definite arrangement of 3–6 micro cycles or weekly cycles, but this can depend on the sporting discipline.

Generally, a mesocycle has one or two aims which can be achieved in 3–6 weeks.

During the preparatory phase, a mesocycle usually consists of 4–6 microcycles, while during the competition phase, it consists of 2–4 macrocycles depending on the competition's calendar. The last microcycle or weekly cycle of a mesocycle mainly aims at recovery and relaxation.

Microcycle

Microcycle is the smallest training cycle and consists of 3 to 10 days. When the duration of microcycle is 7 days, it is known as weekly cycle. For a trained player, the duration of microcycle is generally 5–10 days. The last training session or day of a microcycle aims at recovery and relaxation. A microcycle is much closer to the day-to-day training process. Thai is why, it enables optimal loading of the athlete. The duration of a microcycle is not enough to ensure effective tackling of the training tasks. This is accomplished in the mesocycles and further that of macrocycle.

EXERCISES

A. Objective Type/Multiple-Choice Questions — 1 mark

I. **Multiple-Choice Questions:**

1. Which organisation in India is involved in talent search at grassroots level?

(a) Fit India (b) Indian Olympic Association

(c) **Sports Authority of India** (d) Athletic Association of India

2. Which among the following training cycles has a duration of 3 to 6 weeks?

(a) Microcycle (b) **Mesocycle**

(c) Macrocycle (d) None of these

B. Short Answer Type Questions — 2 marks

1. What is talent identification?
2. How does National Talent Search Scheme work in India?

C. Short Answer Type Questions — 3 marks

1. Write any three steps involved in talent identification and development?
2. How is talent identification important?
3. Define macrocycle with example.

D. Long Answer Type Questions — 5 marks

1. Describe in detail about the key components of talent identification.
2. Differentiate between macro-, meso- and micro- cycles.

Note: Answers of all MCQs are highlighted in **bold**.

Notes