



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

MID-TERM EXAMINATION 2025-26

PHYSICAL EDUCATION-048
SET-2 (Marking Scheme)

Class: XII A & B
Date: XX/XX/2026

Duration: 3 Hrs
Max. Marks: 70

General Instructions:

1. The question paper consists of 5 sections and 37 Questions.
2. Section A consists of question 1-18 carrying 1 mark each and is multiple choice questions. All questions are compulsory.
3. Sections B consist of questions 19-24 carrying 2 marks each and are very short answer types and should not exceed 60-90 words. Attempt any 5.
4. Sections C consist of Question 25-30 carrying 3 marks each and are short answer types and should not exceed 100-150 words. Attempt any 5.
5. Sections D consist of Question 31-33 carrying 4 marks each and are case studies. There is internal choice available.
6. Sections E consists of Question 34-37 carrying 5 marks each and are long answer types and should not exceed 200-300 words. Attempt any 3

Section-A

Section A consists of Multiple Choice Type questions of 1 mark each

1. Which of these is not a component of SAI Khelo India Fitness test? 1
[a] Stability [b] Flexibility [c] **Agility** [d] Speed
2. Match List – I with List – II and select the correct answer from the code given below: 1

List-1		List-2	
Vitamin		Disease	
I	Vitamin A	1	Pyorrhea
II	Vitamin B	2	Rickets
III	Vitamin C	3	Beriberi
IV	Vitamin D	4	Night Blindness

Code				
	I	II	III	IV
A	2	4	3	1
B	1	2	4	3
C	4	3	1	2
D	3	1	2	4

3. The original name of the Paralympic Movement was ICC of World Sports Organization for the _____. 1
[a] **Disabled** [b] Specially Abled [c] Differently Abled [d] Unabled

4. Identify these asanas. 1
- 

[a]



[b]



[c]



[d]
5. Abnormal curve of the spine at the front is called _____. 1
- [a] Scoliosis [b] Kyphosis [c] **Lordosis** [d] Psoriasis
6. What is the most important prerequisite for a successful competitive event to happen? 1
- [a] Publicising the event [b] **Appropriate planning**
- [c] Coordinating the event [d] None of the above
7. Partial-curl up is conducted to test _____. 1
- a. **Abdominal Strength** [b] Power [c] Abdominal Power [d] Stamina
8. What is the approximate composition of water in our body? 1
- [a] One-half [b] One-third [c] **Two-third** [d] Three-fifth
9. _____ expressions are explained from the beginning with support such as picture scheduler. 1
- [a] Accessibility [b] **Behaviour** [c] Team Building [d] All of these
10. Tabular Method is used for fixtures in: 1
- [a] Knock-out tournament [b] Challenge tournament
- [c] **League tournament** [d] None of the above
11. Which asana helps to increase height in growing children and improve posture? 1
- [a] Vajrasana [b] Trikonasana
- [c] **Hastasana (Hastottanasana)** [d] Pavanmuktasana
12. What is the motto of the Paralympic Games? 1
- [a] "Inspire, Empower, Achieve" [b] "Together We Can"
- [c] **"Spirit in Motion"** [d] "Excellence in Action"
13. Which of the following is not a benefit of Community Sport? 1
- [a] Developing a sense of belonging [b] Meeting people with same interests
- [c] **Increasing anti-social behaviours** [d] Improving Physical Health
14. Which of these is not a remedial exercise for flat foot? 1
- 

[a]



[b]
- 

[c]



[d]
15. What is the primary cause of obesity as a lifestyle disease? 1
- [a] Lack of sleep [b] **Excess fat accumulation in the body**
- [c] too much water [d] blood sugar

16. What is the main goal of the Special Olympics? 1
 [a] To provide education to disabled individuals
[b] To promote sports and physical activity for people with intellectual disabilities
 [c] To develop professional athletes
 [d] To organize community fitness programs
17. Vitamins and minerals are _____ nutrients. 1
 [a] Macro **[b] Micro** [c] Non-essential [d] Basic
18. BMR refers to _____. 1
 [a] Body Mass Rate [b] Body Metabolic Ratio
[c] Basal Metabolic Rate [d] Basic Metabolism Rate

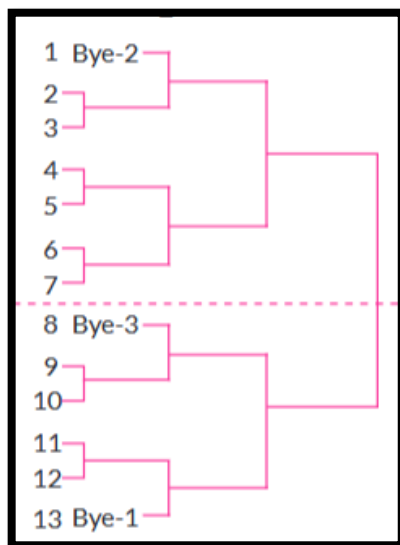
SECTION – B

Section B consist of 6 questions attempt any 5

19. Draw a fixture of 13 cricket teams participating in a tournament on the basis of knock-out. 2
 Ans: A knockout fixture for 13 cricket teams requires 12 total matches across 4 rounds, with 3 byes assigned in the first round to balance the 16-team bracket.

Tournament Calculations

- **Total Teams (N):** 13 teams
- **Total Matches (N - 1):** 12 matches
- **Total Rounds:** 4 rounds ($2^4 = 16$)
- **Total Byes (16 - 13):** 3 byes
- **Teams in Upper Half ((N + 1)/2):** 7 teams
- **Teams in Lower Half ((N - 1)/2):** 6 teams



Round-by-Round Fixture Breakdown

Upper Half (7 Teams)

- Team 1 – **BYE** (2nd Bye assigned)
- Team 2 vs Team 3 (Match 1)
- Team 4 vs Team 5 (Match 2)
- Team 6 vs Team 7 (Match 3)

Lower Half (6 Teams)

- Team 8 – **BYE** (3rd Bye assigned)
- Team 9 vs Team 10 (Match 4)
- Team 11 vs Team 12 (Match 5)
- Team 13 – **BYE** (1st Bye assigned)

20. What do you understand by the term diabetes?

2

Ans: **Diabetes** (also called **Diabetes Mellitus**) is a chronic metabolic disorder in which the body cannot properly regulate the level of glucose (sugar) in the blood. This happens because the pancreas either does not produce enough **insulin** or the body's cells do not respond effectively to insulin. As a result, blood sugar levels become abnormally high.

Types of Diabetes

Type 1 Diabetes: The pancreas produces little or no insulin due to an autoimmune reaction. It usually develops in children or young adults.

Type 2 Diabetes: The body becomes resistant to insulin or does not produce enough of it. It is the most common type and is often associated with obesity, physical inactivity, and unhealthy eating habits.

Gestational Diabetes: Develops during pregnancy and usually disappears after childbirth, although it increases the risk of developing Type 2 diabetes later in life.

Common Symptoms

- Frequent urination
- Excessive thirst
- Increased hunger
- Unexplained weight loss
- Fatigue and weakness
- Blurred vision
- Slow healing of wounds
- Frequent infections
- Prevention and Management
- Eat a balanced, healthy diet.
- Exercise regularly.
- Maintain a healthy body weight.
- Monitor blood sugar levels as advised.
- Take insulin or prescribed medicines if required.
- Have regular medical check-ups.

Definition (Exam Answer):

Diabetes is a chronic disease in which the body cannot properly control blood sugar levels because it does not produce enough insulin or cannot use insulin effectively, leading to high levels of glucose in the blood.

21. What do you mean by Plate tapping test and its procedure?

2

Ans: **Plate Tapping Test**

The **Plate Tapping Test** is a test used to measure the **speed and coordination of upper limb (hand and arm) movement**. It is a part of the **Eurofit Physical Fitness Test Battery** and assesses how quickly a person can perform alternating hand movements.

Equipment Required

- Two circular discs (20 cm in diameter)
- A rectangular board (about 60 × 20 cm)
- A table
- Stopwatch

Procedure

- Place the two discs **60 cm apart** on a table.
- Position the rectangular board midway between the two discs.
- The participant stands comfortably in front of the table.
- The **non-preferred hand** is placed on the rectangular board and remains there throughout the test.
- The **preferred hand** is used to alternately tap the left and right discs.
- On the command "**Go**", the participant taps the discs alternately as quickly as possible.
- The participant completes **25 cycles (50 taps)**.

- The time taken to complete all 50 taps is recorded with a stopwatch.

Scoring

- The **total time (in seconds)** taken to complete **25 cycles (50 taps)** is the score.
- **A lower time indicates better upper-body speed and coordination.**

Purpose

- To assess **speed of limb movement**.
- To evaluate **hand-eye coordination** and **upper limb agility**.
- Commonly used in **school physical education, sports training, and fitness assessment**.

22. Explain about Paralympic Games.

2

Ans: The **Paralympic Games** are a major international multi-sport event for athletes with physical, visual, and intellectual impairments. They are held every four years, shortly after the Olympic Games, and usually in the same host city and venues.

The Paralympic Games are organized by the International Paralympic Committee (IPC), which oversees the competitions and promotes opportunities for athletes with disabilities worldwide.

Key facts:

- **Started:** The modern Paralympic Games began in **1960** in Rome.
- **Winter Paralympics:** The first Winter Paralympic Games were held in **1976** in Örnsköldsvik.
- **Sports:** Events include athletics, swimming, wheelchair basketball, wheelchair rugby, para cycling, sitting volleyball, goalball, para archery, and many others.
- **Classification:** Athletes compete in classification groups based on the type and extent of their impairment so that competition is as fair as possible.
- **Motto:** "Spirit in Motion."
- The Paralympic Games showcase exceptional athletic skill, determination, and sportsmanship. Many athletes set world records and inspire millions through their achievements.
- For example, a Paralympic athlete may compete in:
 - Wheelchair racing in athletics.
 - Para swimming events.
 - Wheelchair basketball.
 - Goalball, a sport designed specifically for athletes with visual impairments.
- The Paralympic Games are now one of the world's largest sporting events, attracting thousands of athletes from over 100 countries.

23. How can Lordosis be corrected?

2

Ans: **Correction of Lordosis**

Lordosis is a postural deformity in which there is an excessive inward curvature of the lumbar (lower back) region of the spine. It can often be improved through appropriate exercises, posture correction, and healthy lifestyle habits.

Remedial Measures to Correct Lordosis

- **Strengthen the abdominal muscles**
 - Perform exercises such as curl-ups, pelvic tilts, and planks to improve core strength.
 - Strong abdominal muscles help support the spine and reduce excessive curvature.
- **Stretch the hip flexor muscles**
 - Tight hip flexors contribute to increased lumbar curvature.
 - Gentle lunges and hip flexor stretches help improve flexibility.
- **Strengthen the hamstring and gluteal muscles**
 - Exercises like bridges, squats (with proper technique), and hamstring curls help stabilize the pelvis.
- **Maintain correct posture**
 - Stand and sit with the back straight and shoulders relaxed.
 - Avoid prolonged slouching or standing with the abdomen pushed forward.
- **Maintain a healthy body weight**

- Excess abdominal fat increases stress on the lower back and may worsen lordosis.
- **Regular physical activity**
- Walking, swimming, and yoga help improve flexibility, posture, and muscle balance.
- **Practice corrective exercises**
- Pelvic tilt exercises
- Knee-to-chest stretches
- Cat-Cow stretch
- Plank exercises
- **Use proper ergonomics**
- Sit on a chair with adequate lumbar support.
- Keep feet flat on the floor and avoid prolonged sitting.
- **Seek professional guidance**
- A physiotherapist can prescribe individualized corrective exercises.
- In severe cases, medical evaluation may be required.

Conclusion

Lordosis can often be corrected or significantly improved through regular corrective exercises, strengthening of the core muscles, stretching of tight muscles, maintaining proper posture, and adopting a healthy lifestyle. Early identification and consistent practice of these measures provide the best results.

24. Explain briefly which type of nutrients are advisable for the player?

2

Ans: For good performance, a player needs a **balanced diet** that provides all the essential nutrients in the right amounts. The following nutrients are advisable:

➤ **Carbohydrates**

- Main source of energy for muscles during exercise.
- Should form the largest part of a player's diet.
- **Sources:** Rice, wheat, bread, potatoes, fruits, oats.

➤ **Proteins**

- Help in muscle growth, repair of tissues, and recovery after exercise.
- Essential for strength and endurance athletes.
- **Sources:** Milk, eggs, fish, chicken, pulses, soybeans, paneer.

➤ **Fats**

- Provide concentrated energy and help absorb vitamins A, D, E, and K.
- Healthy fats should be preferred over saturated and trans fats.
- **Sources:** Nuts, seeds, olive oil, fish, avocado.

➤ **Vitamins**

- Regulate body functions, improve immunity, and support energy production.
- **Sources:** Fresh fruits, green leafy vegetables, milk, eggs.

➤ **Minerals**

- Important for bone health, oxygen transport, muscle contraction, and fluid balance.
- **Sources:** Milk (calcium), spinach (iron), bananas (potassium), nuts.

➤ **Water**

- Prevents dehydration, regulates body temperature, and transports nutrients.
- Players should drink water before, during, and after exercise.

➤ **Dietary Fibre (Roughage)**

- Aids digestion and helps maintain a healthy digestive system.
- **Sources:** Whole grains, fruits, vegetables, legumes.

Conclusion

A player's diet should be rich in **carbohydrates for energy, proteins for muscle repair and growth, healthy fats for long-lasting energy**, along with adequate **vitamins, minerals, water, and fibre** to maintain overall health and achieve optimum sports performance. Top of Form

SECTION – C

Section C consist of 6 questions attempt any 5

25. Mention the sources of protein and its functions.

3

Ans: **Sources of Protein**

- Proteins are obtained from both **animal** and **plant** sources.
- Animal Sources
- Milk and milk products (curd, cheese, paneer)
- Eggs
- Fish
- Chicken
- Meat
- Plant Sources
- Pulses (lentils, gram, peas)
- Soybean and soy products
- Beans
- Nuts and seeds (almonds, peanuts, sunflower seeds)
- Whole grains
- Functions of Protein

Body Building: Helps in the growth and development of muscles, bones, skin, and other body tissues.

Repair of Tissues: Repairs worn-out and damaged body cells and tissues.

Enzyme and Hormone Formation: Helps in the production of enzymes and hormones essential for body functions.

Immunity: Forms antibodies that protect the body against diseases and infections.

Energy Source: Provides energy (4 kcal per gram) when carbohydrates and fats are insufficient.

Maintenance of Body Functions: Supports normal growth, muscle contraction, and proper functioning of organs.

Transportation of Nutrients: Certain proteins help transport oxygen and nutrients throughout the body (e.g., hemoglobin).

Conclusion:

Proteins are known as the **body-building nutrients** because they are essential for growth, tissue repair, immunity, and the overall maintenance of the body. A balanced diet should include adequate protein from both plant and animal sources.

26. Explain the causes, precautions and remedies of Bow legs.

1+1+1

Ans: Bow Legs (Genu Varum)

Bow legs (Genu Varum) is a postural deformity in which the legs curve outward at the knees while the ankles remain close together, creating a bow-like appearance.

- Causes of Bow Legs
 - **Vitamin D deficiency (Rickets):** Weakens bones, causing them to bend.
 - **Calcium and phosphorus deficiency:** Leads to poor bone development.
 - **Congenital (birth) defects:** Some children are born with bow legs.
 - **Improper posture or walking habits:** May contribute to the deformity.
 - **Bone diseases or injuries:** Fractures or infections affecting bone growth.
 - **Excess body weight:** Puts extra pressure on the legs, especially during growth.
- Precautions
 - Ensure a **balanced diet** rich in calcium, phosphorus, and vitamin D.
 - Encourage **regular sunlight exposure** for natural vitamin D synthesis.
 - Maintain **proper body weight** to reduce stress on the legs.
 - Avoid prolonged standing with incorrect posture.
 - Seek **early medical advice** if the deformity is noticed in children.

- Perform regular **strengthening and stretching exercises** under guidance.
- **Remedies**
- **Corrective exercises:** Strengthening the leg muscles and improving posture.
- **Physiotherapy:** Helps improve muscle balance and joint alignment.
- **Use of braces or orthotic devices:** Recommended for growing children when required.
- **Nutritional treatment:** Adequate intake of calcium, vitamin D, and other essential nutrients.
- **Medical treatment:** Treat underlying conditions such as rickets or bone disorders.
- **Surgery:** In severe cases where the deformity is significant and does not improve with conservative treatment.

Conclusion

Bow legs can often be prevented or corrected if detected early. A nutritious diet, proper exercise, good posture, and timely medical intervention play an important role in managing this condition.

27. Briefly discuss about Deaflympics.

3

Ans: **Deaflympics**

International Committee of Sports for the Deaf

The **Deaflympics** are an international multi-sport event organized exclusively for **deaf and hard-of-hearing athletes**. They are conducted under the supervision of the International Committee of Sports for the Deaf (ICSD). The first Deaflympics were held in **1924 in Paris, France**, making them one of the oldest international multi-sport events.

Key Points

- It is organized **every four years**, similar to the Olympic Games.
- Only athletes with a **hearing loss of at least 55 decibels (dB) in the better ear** are eligible to participate.
- Participants are **not allowed to use hearing aids or cochlear implants during competitions**.
- Visual signals such as **lights and flags** are used instead of whistles or sound signals.
- The event promotes **equality, inclusion, sportsmanship, and international friendship** among deaf athletes.
- Importance
- Provides equal opportunities for deaf athletes to compete at the highest level.
- Encourages physical fitness, confidence, and social integration.
- Increases awareness about the abilities and achievements of people with hearing impairments.

28. Explain the procedure of six-minute walk test.

3

Ans: **Procedure of the Six-Minute Walk Test (6MWT)**

The **Six-Minute Walk Test (6MWT)** is a simple fitness test used to measure **functional endurance and aerobic capacity**. It assesses the maximum distance a person can walk in six minutes.

Procedure:

- Use a **flat, straight walkway** (usually 30 metres long) marked with cones at both ends.
- Ask the participant to wear **comfortable clothing and suitable walking shoes**.
- Record the participant's **age, height, weight, pulse rate, and blood pressure** (if required) before the test.
- Explain that the participant has to **walk as far as possible for six minutes** without running or jogging.
- Start the stopwatch and instruct the participant to begin walking.
- The participant may **slow down, stop, and rest if necessary**, but should resume walking as soon as possible within the six-minute period.
- Encourage the participant with **standardized verbal encouragement** at regular intervals without pushing beyond their limits.
- At the end of six minutes, ask the participant to stop where they are.
- Measure and record the **total distance covered in metres**.

- Observe the participant for any signs of excessive fatigue, dizziness, or breathlessness and record post-test pulse rate if required.

Scoring

- The **score** is the **total distance walked in six minutes (in metres)**.
- **Greater distance covered indicates better cardiorespiratory endurance and functional fitness.** Top of Form

29. Which asanas are helpful in reducing obesity? Explain the procedure and contraindications of any one asana. **1+1+1**

Ans: The following asanas are commonly recommended for reducing obesity:

- **Tadasana (Mountain Pose)**
- **Trikonasana (Triangle Pose)**
- **Bhujangasana (Cobra Pose)**
- **Pavanamuktasana (Wind-Relieving Pose)**
- **Paschimottanasana (Seated Forward Bend)**
- **Dhanurasana (Bow Pose)**
- ❖ **Bhujangasana (Cobra Pose)**

Procedure

- Lie flat on your stomach with your legs together and toes pointing backward.
- Place your palms beside the chest, with elbows close to the body.
- Inhale deeply and slowly raise your head, chest, and upper abdomen by straightening your arms.
- Keep the navel on the floor and bend the spine backward comfortably.
- Hold the position for **15–30 seconds** while breathing normally.
- Exhale slowly and return to the starting position.
- Repeat **3–5 times**.

Benefits

- Helps reduce abdominal fat.
- Strengthens the back and spine.
- Improves digestion.
- Increases flexibility of the chest and shoulders.
- Stimulates abdominal organs and improves posture.

Contraindications

- Do not practice if you have a **hernia**.
- Avoid during **pregnancy**.
- People with **severe back injuries**, recent abdominal surgery, or **peptic ulcers** should avoid this asana.
- Practice under expert guidance if suffering from chronic spinal disorders.

Conclusion:

Regular practice of obesity-reducing asanas such as **Bhujangasana, Trikonasana, Tadasana, Dhanurasana, Pavanamuktasana**, and **Paschimottanasana**, along with a balanced diet and regular physical activity, helps in maintaining a healthy body weight and improving overall fitness.

30. Draw a fixture of 7 teams on league basis following the cyclic method. **3**

Ans: For **7 teams** (A, B, C, D, E, F, G) on a **league basis** using the **Cyclic Method**, add one **bye** team (X) to make the number even (8 teams).

Initial Arrangement

A	B	C	D
X	G	F	E

Rotate all teams clockwise except A, which remains fixed.

Fixture Table

Round	Matches	Bye
1	A-X, B-G, C-F, D-E	A
2	A-G, X-F, B-E, C-D	F
3	A-F, G-E, X-D, B-C	D
4	A-E, F-D, G-C, X-B	B
5	A-D, E-C, F-B, G-X	G
6	A-C, D-B, E-X, F-G	E
7	A-B, C-X, D-G, E-F	C

Actual Fixtures (excluding bye matches)

Round 1

- B vs G
- C vs F
- D vs E
- **A – Bye**

Round 2

- A vs G
- B vs E
- C vs D
- **F – Bye**

Round 3

- A vs F
- G vs E
- B vs C
- **D – Bye**

Round 4

- A vs E
- F vs D
- G vs C
- **B – Bye**

Round 5

- A vs D
- E vs C
- F vs B
- **G – Bye**

Round 6

- A vs C
- D vs B
- F vs G
- **E – Bye**

Round 7

- A vs B
- D vs G
- E vs F
- **C – Bye**

Total Matches = $7(7-1)/2 = 21$ matches.

Total Rounds = 7, with one team getting a bye in each round.

Section-D

Section D consist of 3 questions

31. Read the below passage and answer the following questions:

Ram is going regularly to the park near his home in the morning. He found that many old people have some or the other type of fitness problem in terms of flexibility and strength. He decides to check the fitness level of such people in the park.

4

[i] Which two components of fitness are mentioned in the passage?

[a] Speed and endurance

[b] Balance and coordination

[c] Flexibility and strength

[d] Agility and power

[ii] Why did Ram decide to check the fitness level of the old people?

[a] He wanted to win a competition.

[b] He noticed that many of them had fitness problems.

[c] He was asked by his teacher.

[d] He wanted to become famous.

[iii] The passage mainly focuses on:

[a] Children's games

[b] Morning exercises of athletes

[c] Fitness awareness among elderly people

[d] Building a new park

[iv] Which fitness test would be most appropriate to assess the flexibility of elderly people?

[a] 50 m Sprint Test

[b] Sit and Reach Test

[c] 600 m Run/Walk Test

[d] Standing Broad Jump

32. Read the below passage and answer the following questions:

Riya is a para-athlete with a lower limb impairment. Before participating in an international competition, she undergoes a detailed assessment by experts to determine the category in which she can compete fairly against athletes with similar functional abilities.

4

[i] What is the main purpose of classification in para-sports?

[a] To rank athletes by age

[b] To group athletes according to functional abilities for fair competition

[c] To select team captains

[d] To decide prize money

[ii] Riya has a lower limb impairment. During classification, experts mainly evaluate:

[a] Her educational qualifications

[b] Her functional abilities related to the sport

[c] Her financial background

[d] Her nationality only

[iii] Which organization governs the classification system for the Paralympic Games?

[a] FIFA

[b] International Paralympic Committee (IPC)

[c] ICC

[d] IOC only

[iv] Classification in para-sports ensures:

- [a] Equal prize money only
[c] Faster race timings

- [b] Fair and meaningful competition
[d] Better stadium facilities

33. Read the passage and answer the questions that follow by choosing the correct option: **4**

A balanced diet refers to the intake of food constituting all the necessary nutrients. Ajay shares his knowledge of 'food and nutrition' with neighbours while visiting his grandparents in a village. Ajay notices that few people living in that village are suffering with goitre and severe anaemia.

[i] Minerals are placed under _____ nutrient category on the basis of required quantity.

- [a] **Micro** [b] Macro [c] Roughage [d] Non-nutritive

[ii] Goitre is caused due to deficiency of _____.

- [a] Calcium [b] **Iodine** [c] Selenium [d] Iron

[iii] Low levels of this mineral will lead to Anaemia.

- [a] Copper [b] Sodium [c] **Iron** [d] Calcium

[iv] Choose the most appropriate statement from the options given below:

- [a] Vegetables and fruits are enough to stay healthy
[b] Exercise along with proper nutrition is required
[c] Red and green-coloured foods only to be taken
[d] **all of these**

Section-E

Section E consist of 4 questions attempt any 3

34. Which are the Asanas practiced for preventing Diabetes? Write in detail about any two of them.

Ans: The following **asanas** are commonly practiced to help in the prevention and management of diabetes by improving blood circulation, stimulating the pancreas, reducing stress, and enhancing overall metabolism:

- ❖ **Ardha Matsyendrasana (Half Spinal Twist Pose)**
- ❖ **Mandukasana (Frog Pose)**
- ❖ **Bhujangasana (Cobra Pose)**
- ❖ **Dhanurasana (Bow Pose)**
- ❖ **Paschimottanasana (Seated Forward Bend)**
- ❖ **Vajrasana (Thunderbolt Pose)**

➔ **Ardha Matsyendrasana (Half Spinal Twist Pose)**

➤ **Procedure:**

- Sit on the floor with both legs stretched forward.
- Bend the right leg and place the right foot outside the left knee.
- Fold the left leg so that the left heel is near the right hip.
- Twist the upper body to the right.
- Place the left elbow outside the right knee and keep the right hand behind the back.
- Hold the posture for 20–30 seconds while breathing normally.
- Repeat on the opposite side.

➤ **Benefits:**

- Stimulates the pancreas and improves insulin secretion.
- Enhances digestion and metabolism.
- Improves flexibility of the spine.
- Helps reduce stress and fatigue.

➤ **Contraindications:**

- Avoid during pregnancy.
- Not recommended for people with hernia, severe spinal disorders, or recent abdominal surgery.
- People with slipped disc should perform it only under expert guidance.

➔ **Mandukasana (Frog Pose)**

➤ **Procedure:**

- Sit in **Vajrasana**.
- Make fists by folding the thumbs inside the fingers.
- Place the fists on either side of the navel.
- Exhale and bend forward, pressing the fists gently into the abdomen.
- Keep the head and neck straight while looking forward.
- Hold the position for 10–20 seconds with normal breathing.
- Inhale and slowly return to the starting position.

➤ **Benefits:**

- Stimulates the pancreas and helps regulate blood sugar levels.
- Improves digestion.
- Strengthens abdominal muscles.
- Helps relieve constipation and improves metabolism.

➤ **Contraindications:**

- Avoid if suffering from peptic ulcers or severe abdominal pain.
- Not suitable during pregnancy.
- People with knee injuries or recent abdominal surgery should avoid this pose.

Conclusion

Regular practice of **Ardha Matsyendrasana** and **Mandukasana**, along with a balanced diet, regular exercise, and medical advice, can help in the prevention and better management of diabetes. These asanas should be practiced under the guidance of a qualified yoga instructor, especially by beginners or individuals with health conditions.

Or

5

Describe the procedure for performing Bhujangasana along with its benefits and contraindications.

Ans: **Bhujangasana (Cobra Pose)**

➤ **Procedure**

- Lie flat on your stomach on a yoga mat with your legs together and feet stretched back.
- Place your palms beside your chest, with elbows close to the body.
- Rest your forehead or chin on the floor and relax your body.
- Inhale slowly and lift your head, neck, chest, and upper abdomen by pressing the palms into the floor.
- Keep your elbows slightly bent and shoulders relaxed. Do not put excessive pressure on the hands; use your back muscles as well.
- Raise the upper body until the navel remains on the floor.
- Hold the posture for **15–30 seconds** while breathing normally.
- Exhale slowly and lower your chest, neck, and forehead back to the floor.
- Relax and repeat **2–3 times**.

➤ **Benefits**

- Strengthens the muscles of the back, shoulders, and arms.
- Increases flexibility of the spine.
- Improves posture and helps reduce back stiffness.
- Stimulates abdominal organs and improves digestion.
- Expands the chest, improving lung capacity and breathing.

- Helps relieve stress and fatigue.
- May help in managing mild symptoms of asthma by improving chest expansion.

➤ **Contraindications**

- Do not practice if you have a **hernia** or **peptic ulcer**.
- Avoid during **pregnancy**.
- People with **severe back injury**, **slipped disc**, or recent abdominal surgery should not perform this asana without medical advice.
- Avoid if suffering from severe wrist, shoulder, or spinal pain.
- Stop immediately if you experience sharp pain or dizziness.

Conclusion:

Bhujangasana is an effective yoga posture that strengthens the spine, improves flexibility, enhances digestion, and promotes better respiratory function. It should be practiced correctly and avoided by individuals with the above-mentioned medical conditions.

35. Describe the major nutrients (carbohydrates, proteins, fats, vitamins, minerals, water, and fiber) and explain their functions in the human body.

Ans: Major Nutrients and Their Functions in the Human Body

Nutrients are substances in food that provide energy, support growth and repair, and regulate body functions. The major nutrients are carbohydrates, proteins, fats, vitamins, minerals, water, and fiber.

➤ **Carbohydrates**

❖ **Definition:**

Carbohydrates are the body's primary source of energy. They are found in cereals, rice, wheat, potatoes, fruits, sugar, and honey.

❖ **Functions:**

- Provide energy for daily activities and exercise.
- Supply glucose to the brain and nervous system.
- Help spare proteins for growth and repair.
- Store excess energy as glycogen in the liver and muscles.
- Improve physical performance during sports.

➤ **Proteins**

❖ **Definition:**

Proteins are body-building nutrients made up of amino acids. They are found in milk, eggs, fish, meat, pulses, soybean, and nuts.

❖ **Functions:**

- Build and repair body tissues.
- Help in muscle growth and recovery.
- Form enzymes, hormones, and antibodies.
- Support healthy skin, hair, and nails.
- Provide energy when carbohydrates and fats are insufficient.

➤ **Fats**

❖ **Definition:**

Fats are concentrated sources of energy found in butter, ghee, oils, nuts, seeds, and dairy products.

❖ **Functions:**

- Provide and store energy.
- Protect vital organs from injury.
- Help maintain body temperature.
- Aid in the absorption of fat-soluble vitamins (A, D, E, and K).
- Supply essential fatty acids needed for normal body functions.

➤ **Vitamins**

❖ **Definition:**

Vitamins are organic nutrients required in small amounts for normal growth and body functions.

❖ **Functions:**

- Regulate metabolism.
 - Strengthen the immune system.
 - Maintain healthy eyes, skin, bones, and teeth.
 - Help in blood clotting and wound healing.
 - Prevent deficiency diseases such as scurvy, rickets, and night blindness.
-

➤ **Minerals**

❖ **Definition:**

Minerals are inorganic nutrients required in small quantities for proper body functioning.

❖ **Functions:**

- Build strong bones and teeth (calcium and phosphorus).
 - Help in the formation of hemoglobin (iron).
 - Maintain fluid and electrolyte balance (sodium and potassium).
 - Support nerve transmission and muscle contraction.
 - Assist in enzyme and hormone functions.
-

➤ **Water**

❖ **Definition:**

Water is the most essential nutrient and makes up about 60–70% of the human body.

❖ **Functions:**

- Regulates body temperature through sweating.
 - Transports nutrients and oxygen to cells.
 - Removes waste products through urine and sweat.
 - Aids digestion and absorption of nutrients.
 - Lubricates joints and keeps body tissues hydrated.
-

➤ **Fiber (Roughage)**

❖ **Definition:**

Fiber is the indigestible part of plant foods found in fruits, vegetables, whole grains, and legumes.

❖ **Functions:**

- Promotes healthy digestion.
 - Prevents constipation.
 - Helps control blood sugar levels.
 - Lowers cholesterol levels.
 - Increases fullness and helps maintain a healthy body weight.
-

Conclusion

A **balanced diet** should include all major nutrients in the right proportions. Together, carbohydrates, proteins, fats, vitamins, minerals, water, and fiber provide energy, support growth and repair, regulate body processes, and maintain overall health and fitness.

Or

5

Explain the role of carbohydrates before, during, and after exercise.

Ans: Role of Carbohydrates Before, During, and After Exercise

Carbohydrates are the body's main source of energy. They are stored in the muscles and liver as **glycogen** and are essential for maintaining exercise performance and recovery.

➤ **Before Exercise: Role:**

- Provides energy for physical activity.
- Increases muscle and liver glycogen stores.
- Delays fatigue and improves endurance.
- Helps maintain normal blood glucose levels.

➤ **Recommendation:**

- Consume a carbohydrate-rich meal **2–4 hours before exercise**.
 - Examples: Rice, chapati, oats, bananas, potatoes, bread, or pasta.
-

➤ **During Exercise: Role:**

- Supplies a continuous source of energy during prolonged exercise.
- Maintains blood glucose levels.
- Prevents early fatigue.
- Improves endurance and performance, especially during activities lasting **more than 60 minutes**.

➤ **Recommendation:**

- Consume **30–60 g of carbohydrates per hour** during long-duration exercise.
 - Examples: Sports drinks, energy gels, bananas, raisins, or energy bars.
-

➤ **After Exercise: Role:**

- Replenishes depleted muscle glycogen stores.
- Speeds up recovery.
- Reduces muscle fatigue.
- Helps prepare the body for the next training session.
- When combined with protein, it promotes muscle repair and growth.

➤ **Recommendation:**

- Consume carbohydrates within **30–60 minutes after exercise**.
 - Examples: Fruit juice, chocolate milk, rice, potatoes, sandwiches, or yogurt with fruit.
-

Conclusion

Carbohydrates play a vital role at every stage of exercise:

Before exercise: Provide energy and build glycogen stores.

During exercise: Maintain blood glucose and delay fatigue.

After exercise: Restore glycogen, promote recovery, and prepare the body for future performance.

36. Explain the Senior Citizen Fitness Test in detail.

Ans: The **Senior Citizen Fitness Test (SCFT)**, also known as the **Fullerton Functional Fitness Test**, is a battery of tests designed to assess the **functional fitness** of adults aged **60 years and above**. It measures the physical abilities required for performing daily activities independently and safely.

Objectives of the Senior Citizen Fitness Test

- To evaluate the overall functional fitness of older adults.
- To identify strengths and weaknesses in physical fitness.
- To monitor changes in fitness over time.
- To help design suitable exercise and rehabilitation programs.
- To reduce the risk of falls and improve independence.

Components of the Senior Citizen Fitness Test

Test	Purpose	Procedure
1. Chair Stand Test	Measures lower body strength	The participant sits on a chair with arms crossed over the chest and stands up and sits down as many times as possible in 30 seconds .
2. Arm Curl Test	Measures upper body strength	Sitting on a chair, the participant performs as many bicep curls as possible in 30 seconds using a 2.3 kg (5 lb) dumbbell for women and 3.6 kg (8 lb) dumbbell for men .
3. Chair Sit-and-Reach Test	Measures lower body flexibility	The participant sits on the edge of a chair, extends one leg forward, and reaches toward the toes. The distance between the fingers and toes is measured.
4. Back Scratch Test	Measures upper body (shoulder) flexibility	One hand reaches over the shoulder and the other up the middle of the back. The distance between the middle fingers is measured.
5. Eight-Foot Up-and-Go Test	Measures agility and dynamic balance	The participant starts seated, stands up, walks 8 feet (2.44 m) around a cone, returns, and sits down. The time taken is recorded.
6. Six-Minute Walk Test	Measures aerobic endurance	The participant walks continuously for 6 minutes , and the total distance covered is recorded. (If space is limited, a 2-Minute Step Test may be used as an alternative.)

Importance of the Senior Citizen Fitness Test

- Assesses the ability to perform daily activities independently.
- Detects early decline in physical fitness.
- Helps prevent falls and injuries.
- Encourages active and healthy ageing.
- Assists fitness professionals in planning individualized exercise programs.
- Tracks improvements after regular exercise or rehabilitation.

Advantages

- Easy to administer.
- Safe and suitable for older adults.
- Requires minimal equipment.
- Provides a comprehensive assessment of functional fitness.
- Widely used in community health and fitness programs.

Conclusion

The **Senior Citizen Fitness Test** is a simple, reliable, and comprehensive assessment tool for evaluating the functional fitness of elderly individuals. By measuring **strength, flexibility, balance, agility, and endurance**, it helps maintain independence, improve quality of life, and promote healthy ageing.

Or

5

Explain the purpose and procedure of the 8-Foot Up and Go Test.

Ans: 8-Foot Up and Go Test

The **8-Foot Up and Go Test** is a component of the **Senior Citizen Fitness Test (SCFT)**. It is used to assess an older adult's **agility, dynamic balance, speed, and mobility**, which are important for performing daily activities safely and independently.

Purpose

- The test is conducted to:
- Measure **agility and dynamic balance** in senior citizens.
- Assess the ability to **move quickly and safely** while changing direction.
- Evaluate the risk of **falls** among older adults.

- Monitor changes in mobility and functional fitness over time.

Equipment Required

- A standard chair (approximately 43–45 cm high) placed against a wall.
- A cone or marker.
- Measuring tape.
- Stopwatch.

Procedure

- Place the chair against a wall to prevent movement.
- Mark a point **8 feet (2.44 metres)** in front of the chair and place a cone there.
- The participant sits comfortably on the chair with their back straight and hands resting on their thighs.
- On the command "**Go**", the participant:
 - Stands up from the chair.
 - Walks as quickly and safely as possible to the cone.
 - Goes around the cone.
 - Returns to the chair and sits down.
- The stopwatch starts on the command "**Go**" and stops when the participant is seated again.
- Usually, **one practice trial** and **two test trials** are given. The **best (fastest) time** is recorded in **seconds**.

Scoring

- The score is the **time (in seconds)** taken to complete the test.
- **Lower time indicates better agility, balance, and mobility.**

Precautions

- Ensure the floor is dry and free from obstacles.
- The chair should remain stable and not slide.
- Participants should wear comfortable clothing and appropriate footwear.
- Allow the participant to walk at a safe speed if they have balance issues.

Conclusion

The 8-Foot Up and Go Test is a simple, reliable, and effective test for evaluating **functional mobility, agility, and dynamic balance** in senior citizens. It helps identify individuals who may be at a higher risk of falling and assists in planning suitable fitness and rehabilitation programs.

37. Write down the introduction, objectives, eligibility, features and importance of the Deaflympics.

Ans: Deaflympics: Introduction:

The **Deaflympics** is an international multi-sport event organized exclusively for athletes with hearing impairment. It is recognized by the **International Olympic Committee (IOC)** and governed by the **International Committee of Sports for the Deaf (ICSD)**. The first Deaflympics were held in **1924** in Paris, France, making them one of the oldest international multi-sport events. The games are conducted every four years and promote equal opportunities, friendship, and excellence among deaf athletes.

Objectives

- To provide an international platform for athletes with hearing impairment to compete.
- To encourage participation in sports among deaf individuals.
- To promote equality, inclusion, and fair competition.
- To develop physical fitness, confidence, and leadership qualities.
- To strengthen friendship and cultural exchange among participating nations.
- To create awareness about the abilities and achievements of deaf athletes.

Eligibility

- Athletes must have a **hearing loss of at least 55 decibels (dB)** in the better ear.
- Hearing aids, cochlear implants, or other hearing assistance devices are **not permitted during competition**.
- Athletes must comply with the eligibility rules of the **International Committee of Sports for the Deaf (ICSD)**.

- Participants must be selected by their respective national deaf sports organizations.
- Athletes must meet the age and qualification criteria for their respective sports.

Features

- Organized every **four years**.
- Recognized by the **International Olympic Committee (IOC)**.
- Governed by the **International Committee of Sports for the Deaf (ICSD)**.
- Competitions use **visual signals** (such as lights and flags) instead of sound signals like whistles or starting guns.
- Athletes compete in a wide range of individual and team sports.
- Encourages international friendship, sportsmanship, and cultural exchange.
- Promotes equal opportunities for deaf athletes at the highest level of competition.

Importance

- Provides equal opportunities for deaf athletes to compete internationally.
- Boosts self-confidence, independence, and social inclusion.
- Encourages a healthy and active lifestyle among people with hearing impairment.
- Increases public awareness about the abilities of deaf individuals.
- Promotes the values of discipline, teamwork, and sportsmanship.
- Inspires young athletes with hearing impairment to participate in sports.
- Strengthens global unity and understanding through sports.

Conclusion

The **Deaflympics** is a prestigious international sporting event that celebrates the talent and determination of athletes with hearing impairment. It promotes equality, inclusion, excellence, and international friendship while providing deaf athletes with an opportunity to compete at the highest level.

Or

5

What is the difference between the Special Olympics, Deaflympics and the Paralympics?

Ans: The **Special Olympics, Deaflympics, and Paralympics** are all international sporting events for athletes with disabilities, but they differ in the type of disability, eligibility criteria, and purpose.

Basis	Special Olympics	Deaflympics	Paralympics
Participants	Athletes with intellectual disabilities	Athletes with hearing impairment (deafness)	Athletes with physical, visual, or certain eligible intellectual disabilities , depending on sport classification
Eligibility	Must have an intellectual disability or developmental disability	Must have a hearing loss of at least 55 dB in the better ear	Must meet sport-specific disability classification and qualification standards
Level of Competition	Open to athletes of all ability levels	Elite international competition	Elite international competition
Selection Process	No qualifying standard; participation is encouraged for all eligible athletes	Athletes qualify through national and international standards	Athletes qualify through international rankings and qualifying events
Main Objective	Participation, inclusion, confidence, and skill development	Fair competition for deaf athletes using visual communication	High-performance competition among elite athletes with disabilities
Communication	Standard competition rules	Uses visual signals instead of sound (e.g., lights instead of starting pistols)	Standard competition rules with adaptations based on the sport and disability

Basis	Special Olympics	Deaflympics	Paralympics
Organizing Body	Special Olympics International	International Committee of Sports for the Deaf	International Paralympic Committee
Frequency	World Games held every 4 years (Summer and Winter alternate every 2 years)	Every 4 years	Every 4 years , immediately after the Olympic Games

Key Differences

- **Special Olympics** focuses on **athletes with intellectual disabilities** and emphasizes participation, inclusion, and personal development rather than only elite performance.
- **Deaflympics** is exclusively for **deaf athletes** and modifies competition by replacing sound-based signals with visual cues while maintaining high-level international competition.
- **Paralympics** is for **elite athletes with eligible physical, visual, and certain intellectual impairments** who meet strict qualification and classification standards.

In summary:

- **Special Olympics** → Intellectual disabilities; participation for all skill levels.
- **Deaflympics** → Hearing impairment; elite competition using visual communication.
- **Paralympics** → Physical, visual, and some intellectual disabilities; elite, qualification-based competition.

*****ALL THE BEST*****