### **Marking Scheme**

## **Strictly Confidential**

(For Internal and Restricted use only)

### Senior School Certificate Examination, 2023

SUBJECT NAME: PHYSICAL EDUCATION (SUBJECT CODE P07548) (PAPER CODE 75)

## General Instructions: -1 You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully. "Evaluation policy is a confidential policy as it is related to the confidentiality of the 2 examinations conducted. Evaluation done and several other aspects. Its' leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in News Paper/Website etc may invite action under various rules of the Board and IPC." 3 Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In class-X, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded. 4 The Marking scheme carries only suggested value points for the answers These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly. 5 The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after delibration and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators. Evaluators will mark( $\sqrt{\ }$ ) wherever answer is correct. For wrong answer CROSS 'X" be 6 marked. Evaluators will not put right ( ) while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing. 7 If a question has parts, please award marks on the right-hand side for each part. Marks

|    | awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.   |
|----|---|
| 8  | If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.   |
| 9  | If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note "Extra Question".  |
| 10 | No marks to be deducted for the cumulative effect of an error. It should be penalized only once.  |
| 11 | A full scale of marks(example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.  |
| 12 | Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper.  |
| 13 | Ensure that you do not make the following common types of errors committed by the Examiner in the past:-  |
| 14 | <ul> <li>Leaving answer or part thereof unassessed in an answer book.</li> <li>Giving more marks for an answer than assigned to it.</li> <li>Wrong totalling of marks awarded on an answer.</li> <li>Wrong transfer of marks from the inside pages of the answer book to the title page.</li> <li>Wrong question wise totalling on the title page.</li> <li>Wrong totalling of marks of the two columns on the title page.</li> <li>Wrong grand total.</li> <li>Marks in words and figures not tallying/not same.</li> <li>Wrong transfer of marks from the answer book to online award list.</li> <li>Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.)</li> <li>Half or a part of answer marked correct and the rest as wrong, but no marks awarded.</li> <li>While evaluating the answer books if the answer is found to be totally incorrect, it should</li> </ul> |
| 15 | be marked as cross (X) and awarded zero (0)Marks.  Any un assessed portion, non-carrying over of marks to the title page, or totalling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.  |
| 16 | The Examiners should acquaint themselves with the guidelines given in the "Guidelines for spot Evaluation" before starting the actual evaluation.   |
| 17 | Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totalled and written in figures and words.   |
| 18 | The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.   |

### General Instructions:

- a. The making scheme carries only suggested value points for the answers.
- b. These are only Guideline and do not constitute the complete answer.
- c. The students can have their own expression and if the expression is correct, the marks be awarded accordingly.
- d. The candidates would be permitted to obtain a photocopy of the Answer book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners are once again reminded that they must ensure that evaluation that is carried out strictly as per value points for each answer as given in the marking Scheme.
- e. All the Head Examiners/Additional Head Examiners/Examiners are instructed that while evaluating the answer scripts, if the answer is found to be totally incorrect, (X) should be marking on the incorrect answer and awarded '0' marks.

# MARKING SCHEME

Senior School Certificate –Examination, 2023

# PHYSICAL EDUCATION (Subject Code- 048)

[Paper Code -75]

**Maximum Marks: 70** 

## **Section-A**

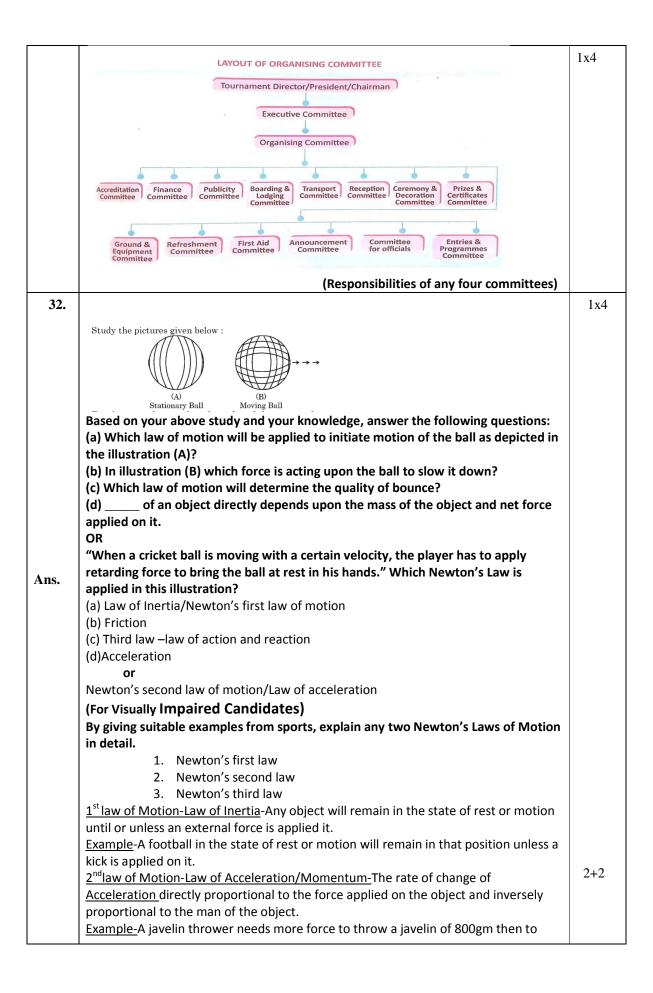
| Q. No.      | EXPECTED ANSWER / VALUE POINTS   | Marks |
|-------------|--|-------|
| 1.          | (a) Bhujangasana   | 1     |
| Ans.        | For visually impaired  | 1     |
|             | (a) Bhujangasana   |       |
| 2.          | (d) Neuroticism  |       |
| Ans.        |  | 1     |
| 3.<br>Ans.  | (c) Buoyant Force  | 1     |
| 4.<br>Ans.  | (c) Efficiency of Lungs.   |       |
|             | (4)  | 1     |
| 5.<br>Ans.  | (a) Endurance  | 1     |
| 6.<br>Ans.  | (b) Coupling ability   | 1     |
| 7.<br>Ans.  | (a) Lactic acid  | 1     |
| 8.<br>Ans.  | (a) Weight   | 1     |
| 9.<br>Ans.  | (a) Both (A) and (R) are true and (R) is the correct explanation of (A). | 1     |
| 10.<br>Ans. | (a) Regulate body temperature  | 1     |
| 11.<br>Ans. | (b) Vitamin B and C  | 1     |
| 12.<br>Ans. | (c) Parvatasana  | 1     |
| 13.         | (a) 18   | 1     |
| Ans.        |  |       |
| 14.<br>Ans. | (a) Elimination tournament   | 1     |
| 15.<br>Ans. | (c) 1924   | 1     |
| 16.         | (a) I-3, II-1, III-4, IV-2   | 1     |

| Ans.        |   |      |
|-------------|---|------|
| 17.         | (a) I-2, II-1, III-4, IV-3  | 1    |
| Ans.        |   |      |
| 18.         | (b) Beginning of menstrual period in women  | 1    |
| Ans.        |   |      |
|             | Section-B   |      |
| 19.         | Briefly explain any two factors determining endurance.  | 1+1  |
| Ans.        | Factors determining Endurance:  |      |
| 11150       | 1.Aerobic capacity  |      |
|             | a. Oxygen intake  |      |
|             | b. Oxygen uptake  |      |
|             | c. Oxygen transport d. Energy reserve   |      |
|             | 2. Anaerobic capacity   |      |
|             | 3. Movement Economy   |      |
|             | 4.Muscle Composition  |      |
|             | 5.Lactic acid tolerance   |      |
|             | (Explanation of any two)  |      |
| 20.         | What do you understand by "Goal Setting"?   | 2    |
| Ans.        | Goal setting is a mental technique that can be used to increase an individual's                   |      |
|             | commitment towards achieving a specific standard of proficiency on a task within a                |      |
|             | specified time.   |      |
|             | Or  |      |
|             | The process of establishing a level of performance proficiency that should be                     |      |
|             | reached within a prescribed time period is known as goal setting.                                 |      |
|             | (Or any other relevant answer)  |      |
| 21.         | Define Flexibility and list down its types.   | 1+1  |
| Ans.        | Flexibility is the maximum range of movement of a joint   |      |
|             | <b>Or</b> Flexibility is the quality of the muscles, ligaments and tendons that enables the joint |      |
|             | of the body to move easily through a complete range of movement.                                  |      |
|             | (Or any relevant definition)  |      |
|             | There are mainly two types of flexibility   |      |
|             | Active Flexibility - Ability of an individual to do the joint movement without any                |      |
|             | external help- (a)Static Flexibility (b) Dynamic Flexibility                                      |      |
|             | Passive Flexibility- The ability to do joint movement with a greater range with an                |      |
|             | external help or partner.   |      |
|             | (Only types listed one mark to be given)  |      |
| 22.         | Elucidate any four types of fractures.  | ½ x4 |
| Ans.        | (a) Green Stick-Incomplete break of soft bones of children.                                       |      |
| 4 3 11 13 • | (b) Comminuted- A bone breaks into number of pieces.  |      |
|             | (c) Transverse- It is a straight break right across a bone.                                       |      |
|             | (d) <b>Oblique</b> -A bone breaks diagonally.   |      |
|             | (e) Impacted-When the broken ends of bones are jammed together by force of                        |      |
|             | injury.   |      |
|             | (Any 4 types)   |      |

| 23.     | What is BMI? Calculate BMI of a child whose weight is 72 kg and height 1.68 mts.  | 1+1     |
|---------|---|---------|
| Ans.    | Body mass index (BMI) is a measure of body fat, based on height and weight of a   | 1.1     |
| 2 11150 | person.   |         |
|         | Calculation of BMI if: Weight= 72 kgs. Height= 1.68 mts.  |         |
|         | $BMI = \frac{Weight(kg)}{[Height(m)]^2}$  |         |
|         | BMI= $\frac{72}{1.68 \times 1.68}$ = 25.51  |         |
|         | 1 00×1 00   |         |
|         | Differentiate between Macro and Micro Nutrients.  |         |
| 24.     | Macro Nutrients Micro Nutrients   | 1+1     |
| Ans.    | 1. Required in large quantity  1. Required in small quantity  |         |
|         | 2. Have calorific value 2. No calorific value   |         |
|         | 3. Consist of energy and body building elements 3. Consist of protecting elements   |         |
|         | 4. Carbohydrates, fats, Protein, water  4. Vitamins and minerals  |         |
|         | (Any relevant 2 points)   |         |
|         | Section -C  |         |
|         |   |         |
| 25.     | "Participation in physical activities is advantageous for children with special need."  Briefly explain any six advantages. | ½ x6    |
|         | Advantages of physical activities For children with special need.   |         |
| Ans.    | 1.Physical improvement  |         |
|         | 2.Mental improvement  |         |
|         | 3.Increase self esteem  |         |
|         | 4. Reduce the level of stress, Anxiety and Depression   |         |
|         | 5. Reduce the risk of health complications.   |         |
|         | 6. Improved social interaction  |         |
|         | 7. Improved cognitive skills  |         |
|         | •   |         |
|         | Improved emotional and psychological health     Mode of recreation and fun  |         |
|         |   |         |
|         | 10. Channelizing the surplus energy   |         |
| -       | (Any 6 relevant points explained) Write the functions of Vitamin D and Vitamin K and mention their sources.                 | 11/ 11/ |
| 26.     | Functions of Vitamin D and Vitamin K and mention their sources.   | 1½+1½   |
| Ans.    | 1.lt helps in the absorption of calcium and phosphorus  |         |
|         | 2. It maintains the functions of Parathormone, the hormone secreted by parathyroid  |         |
|         | glands.   |         |
|         | 3.It helps to keep the teeth and bones strong   |         |
|         | Sources of Vitamin D  |         |
|         | Sunrays, milk, fish, liver oil, butter etc.   |         |
|         | Functions of Vitamin K  |         |
| 1       | 1. Helps in blood clotting  |         |
| 1       | ·   |         |
|         | 2. Enhances bone strength and heart health  |         |
| 1       | 3. Helps to facilitate energy production of the mitochondria  |         |
|         | Sources of vitamin K  Group loofy vogotables and cabbage: milk etc.   |         |
|         | Green leafy vegetables and cabbage; milk etc.   |         |
|         | (Any 2 relevant functions and 1 source for each)  |         |

| 27.  | Briefly explain the functions of Directing and Controlling to organize sports event. | 11/2+11/2  |
|------|--|------------|
|      | Functions of Directing   | 172+172    |
| Ans. | 1. Directing requires leadership quality   |            |
|      | Making the employees aware about their duties and responsibilities                   |            |
|      | 3. Includes supervision and motivation   |            |
|      | 4. Guiding, inspiring and instructing people to accomplish organizational goal.      |            |
|      | 5.Ensures coordination   |            |
|      | Functions of controlling   |            |
|      | 1 Establishing standards   |            |
|      | 2.Ensure that actual performance is in accordance with the planned performance.      |            |
|      | 3. Involve imparting instruction to employees to achieve common goal.                |            |
|      | 4. Help to revise the standard in the light of changing circumstances and            |            |
|      | environment.   |            |
|      | (Any 3 relevant points for each)   |            |
| 20   | How can we enhance the sports performance with the help of self-talk and             |            |
| 28.  | self-esteem? Explain.  | -<br>1½+1½ |
|      | Self-talk and self-esteem enhance the sports performance by the following ways       | 1/2+1/2    |
| Ans. | Self-Esteem  |            |
|      | 1. It controls the negative thoughts   |            |
|      | 2. It boosts the self confidence   |            |
|      | 3. It controls emotion and anxiety   |            |
|      | 4. It helps in skill acquisition   |            |
|      | 5. Self esteem helps in decision making  |            |
|      | 6. Taking up challenges  |            |
|      | 7. Increase in potential to change oneself   |            |
|      | 8. Increased self esteem leads to improvement in performance, resulting in           |            |
|      | successful accomplishment of a goal.   |            |
|      | Self Talk  |            |
|      | 1. Creating and changing mood  |            |
|      | 2.Building and developing self efficacy  |            |
|      | 3.Controlling efforts  |            |
|      | 4. Focusing attention or concentration   |            |
|      | 5.Improve overall performance  |            |
|      | 6. Giving oneself instructions to carry out a task.                                  |            |
|      | 7.Helps to improve stressful situations  |            |
|      | 8.Helps to substitute "This is too difficult" to "I can do this"                     |            |
|      | (Any six relevant points)  |            |
|      |  |            |
| 29.  | Elucidate any six effects of exercise on muscular system.                            | ½ x6       |
| Ans. | Increased muscle temperature   |            |
|      | Increased blood supply   |            |
|      | Increased muscle flexibility   |            |
|      | 4. Hypertrophy of Muscle   |            |
|      | 5. Increase in Strength of Ligaments and Tendons                                     |            |
|      | 6. Increase in Size and Number of Mitochondria                                       |            |
|      | 7. Increase in Myoglobin Storage   |            |
|      | 8. Increase in Glycogen Storage  |            |
|      | 9. Increase in oxidation/metabolism  |            |
|      | 10. Increased in Lactic Acid Tolerance   |            |
|      | 11. Better posture   |            |
|      | 12. Delayed fatigue  |            |
|      | (Any six relevant points)  |            |

| 30.  | What do you understand by Round shoulders deformity? Suggest any four   |   |
|------|---|---|
|      | corrective measures for round shoulders.  |   |
| Ans. | Round shoulder  Round shoulder is a postural deformity in which shoulders are bent forward from the   |   |
|      | ideal alignment thereby giving a narrow curve to upper back.  | 1 |
|      | Or  |   |
|      | In this postural deformity the shoulders become round and sometimes they seem to  |   |
|      | be bent forward.  |   |
|      | Corrective measure for round shoulders  |   |
|      | 1. Perform chakrasana and dhanurasana   | 2 |
|      | 2.Hold the horizontal bar   | 2 |
|      | 3. Keep your tips of fingers on your shoulders and rotate your elbows in clockwise  |   |
|      | and anticlockwise direction.  |   |
|      | 4.Pull ups  |   |
|      | 5.Perform bhujangasana and ushttasana   |   |
|      | 6.Pull the shoulders backward and see upward  |   |
|      | 7.Chest stretches   |   |
|      | 8.T stretches   |   |
|      | 9.Wall stretches  |   |
|      | 10. Handclasp stretch and planks.   |   |
|      | (Any 4 corrective measures)   |   |
|      |   |   |
|      | Section D   |   |
| Ans. | On the basis of above fixture, answer the following questions:  (a) Which method is shown in the picture to draw fixture in league tournament?  (b) What is the formula to calculate number of matches?  (c) In league or Round Robin Tournament winner will be decided on the basis of (d) If 7 teams participate in a league Tournament, number of matches will be played:  (a) Staircase method  (b) N (N-1)  2  (c) Points score by teams/no of matches won/ American method/British method  (d) 21 matches |   |
|      | (For Visually Impaired Candidates) Explain the responsibilities of any four committees required to organize a sports event  |   |



|      | throw a lovelin of COOme  |        |
|------|---|--------|
|      | throw a javelin of 600gm.   |        |
|      | 3 <sup>rd</sup> Law of Motion-Law of Action/Reaction-For every action there is an equal and |        |
|      | opposite reaction.  |        |
|      | Example-While swimming we push the water backwards and our body moves                       |        |
|      | forward.  |        |
|      | (Any two laws with suitable example)  |        |
| 33.  | In relation to the pictures, answer the following questions:                                | 1x4    |
|      | <i>√</i>  |        |
|      |   |        |
|      |   |        |
|      | (A) (B) (C)   |        |
|      |   |        |
|      | (a) Logo shown in picturerefers to Special Olympic.   |        |
|      | (b) Who was the founder of Special Olympics?  |        |
|      | (c) According to figure 'B', the hand shapes of 'OK', 'Good' and 'Great' that overlap       |        |
|      | each other in a circle,, represent the original sign for                                    |        |
|      | (d) How many countries participated in the first Paralympic Games in Rome (Italy)           |        |
|      | in 1960?  |        |
|      | OR  |        |
|      | The motto of Paralympics is   |        |
| Ans. | (a) C   |        |
|      | (b) Eunice kennedy shriver  |        |
|      | (c) Deaf Olympics/Deaflympics   |        |
|      | (d)23   |        |
|      | or  |        |
|      | Spirit in motion  |        |
|      | (For Visually Impaired Candidates)  |        |
|      | Explain any four strategies to make physical activities accessible for children with        |        |
|      | special needs.  | 1x4    |
|      | Strategies to make physical activities accessible for CWSN                                  | 134    |
| Ans. | 1 Regular medical check up  |        |
|      | 2.Adaptive physical education   |        |
|      | 3. Clear communication  |        |
|      | 4. Modified playfield/court   |        |
|      | 5.Modified rules  |        |
|      | 6.Modification in equipment   |        |
|      | 7.Involve people with disabilities in decision making                                       |        |
|      | 8. Encourage community based programme  |        |
|      | 9.Use different types of instructional strategies   |        |
|      | 10.Social strategies  |        |
|      | 11.Psychological strategies   |        |
|      | 12. Development of voluntary services at various levels                                     |        |
|      | (Explanation of any 4 points)   |        |
|      | Section -E  |        |
| 2.1  | List down any four asanas used for prevention of Hypertension. Explain the                  |        |
| 34.  | procedure and contraindication of any one of them with help of a stick diagram.             |        |
|      | Enlist any 4  |        |
| Ans. | 1.Tadasana  | ¹⁄4 x4 |
|      | 2. Katichakrasana   |        |
|      |   |        |
|      | 3. Uttanpadasana  |        |
|      | 4. ArdhaHalasana  |        |
|      | 5. Sarala Matyasana   |        |
|      | 6 Gomukhasana   |        |

- 7. Uttan Mandukasana
- 8. Vakrasana
- 9. Bhujangasana
- 10. Makarasana
- 11. Shavasana,
- 12. Nadishodhanapranayam
- 13 Sitlipranayam

#### Draw any one of the following









Tadasana

Katichakransan

Uttanpadasana

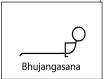
ArdhaHalasana







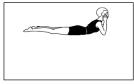




1

Sarala Matyasana Gomukhasana UttanMandukasana Vakrasana

Bhujangasana









Makarasana

Shavasana

Nadishodhanapranayama

Sitlipranayam

(Explanation of the procedure can be accepted in paragraph /point wise both and it should be relevant to the opted stick diagram.

Contraindications (any two) should be in relevance to the opted stick diagram)

## Procedure of Tadasana (as specimen)

Stand straight on the floor/ mat.

Take a small gap between feet.

After deep inhalation, raise both the arms.

Keep arms upward by interlocking fingers.

Come on the toes by raising heels.

Feel the pressure of stretching from toes.

Try to maintain this pose along with slow and deep breathing.

### Contraindications

People suffering from headaches, Low blood pressure and insomnia should avoid this

People suffering from diarrhea, neck and spinal injury should avoid this asana

2

1

| 35.   | What is the purpose of Rikili and Jones fitness test? Explain the procedure of its           |              |
|-------|--|--------------|
| 33.   | any two test items in detail.  |              |
|       | Explanation of Purpose   |              |
| Ans.  | The senior citizen fitness test was developed by Rikli and Jones for the purpose of          |              |
|       | assessment of fitness of senior citizens. This test battery contains six tests which are     |              |
|       | designed mainly to assess the lower body strength, upper body strength, lower and            | 1            |
|       | upper body flexibility, agility and aerobic endurance.                                       |              |
|       | (Or)   |              |
|       | (Marks to be given-If student mention the purpose of six items)                              |              |
|       | 1. Chair stand test  |              |
|       | 2. Arm curl test   |              |
|       | 3. Chair sit and reach test  |              |
|       | 4. Back Scratch test   |              |
|       | 5. Eight foot up and go test   |              |
|       | 6. Six minute walk test  |              |
|       | Explain the procedure of any two test items from the above -                                 | 2+2          |
|       | Chair Stand Test (Procedure as specimen)   | - · <b>-</b> |
|       | Procedure: The chair should be placed against the wall or somewhere it gets                  |              |
|       | stabilized. Initially, the individual will sit on the chair, back straight, arms crossed and |              |
|       | feet firmly on the floor shoulder width apart. On the command "Go" the individual            |              |
|       | will stand up completely, and then return back to the initial position. This will be         |              |
|       | counted as one stand. The individual should be motivated to do maximum stands in             |              |
|       | 30 seconds.  |              |
|       | Maximum number of complete stands will be counted as score. If the individual is in          |              |
|       | halfway of the stand and time is over, then it will be counted as a full stand.              |              |
| 36.   | Define strength and explain any two methods to develop it.                                   |              |
| Ans.  | Strength is the ability of a muscle to exert force in single muscle contraction.             |              |
| AIIS. | OR   |              |
|       | Strength is the capacity of the whole body or any of its part to exert force.                |              |
|       | OR   | 1            |
|       | Strength is the force that a muscle or group of muscles can exert against a resistance       |              |
|       | in one maximum effort.   |              |
|       | (Or any other relevant definition)   |              |
|       | Methods to develop strength:   |              |
|       | <u>Isometric Exercise</u> : These exercises are not visible as there is no direct movement.  |              |
|       | Therefore, isometric exercises cannot be observed. In these exercises, work                  |              |
|       | performed cannot be seen directly, like pushing a wall. There is no change in the            |              |
|       | muscle length when such exercises are done. These exercises need less time and               |              |
|       | equipment and can be performed practically anywhere and everywhere.                          | 2+2          |
|       | <u>Isotonic Exercise:</u> In these exercises movements can be seen directly. Isotonic        | 212          |
|       | exercises result in toned muscles and increased muscle length. Examples of isotonic          |              |
|       | exercises include running and jumping on the spot, weight training exercises, and            |              |
|       | calisthenics exercises.  |              |
|       | Isokinetic Exercise: These exercises are performed on specially designed machines.           |              |
|       | In Isokinetic contraction, the muscles apply maximal force throughout the range of           |              |
|       | motion around the joint. Example: Brisk Walking on a Treadmill, cycling on an                |              |
|       | exercise bike etc.   |              |
| I     | (Any 2 methods explained)  |              |

| 37.  | What is Friction? Write the advantages and disadvantages of friction by               |   |
|------|---|---|
|      | giving suitable examples from sports.   |   |
| Ans. |   | 1 |
|      | Friction is a force acting over the area of contact between two surfaces in the       |   |
|      | direction opposite to that of motion.   |   |
|      | Or  |   |
|      | Friction is a force that acts parallel to the two surfaces.                           |   |
|      | Or  |   |
|      | In other words, it is a force that resists the movement.                              |   |
|      | Or  |   |
|      | (Similar kind of explanation)   |   |
|      | Advantages:   |   |
|      | 1. Running and walking are the result of friction between ground and the shoes. For   |   |
|      | e.g.: An athlete uses spikes and a footballer uses studs.                             |   |
|      | 2. The grip in badminton and tennis play a major role in performing a perfect shot.   |   |
|      | That is why a good grip is used for better friction.                                  | 2 |
|      | 3. The friction between the tyres and the surface prevents cyclist from slipping and  |   |
|      | skidding. Also, a cyclist uses a pointed helmet to reduce friction.                   |   |
|      | 4. Gymnasts and javelin thrower used Magnesium powder to increase friction.           |   |
|      | <u>Disadvantages:</u>   |   |
|      | 1. If the air pressure in the cycle tyres is not appropriate, then due to excessive   | 2 |
|      | friction, more energy is used.  | 2 |
|      | 2. Flight of an object also depends on friction because air resistance slows down the |   |
|      | speed of the projectile.  |   |
|      | 3. During pole-vault, an athlete may lose grip on the pole if less friction is there  |   |
|      | between palm and pole and may get injured.  |   |
|      | 4. Friction can cause injuries because a player slides across the ground during play. |   |
|      | (Any two advantages and disadvantages or relevant answer)                             |   |