

# **SENIOR SCHOOL CERTIFICATE EXAMINATION**

## **MARKING SCHEME -2017**

### **PHYSICAL EDUCATION**

**(Local)**

#### **Instructions**

**code-75/1**

1. Marking Scheme carries only suggested value points for the answers. These are only Guidelines and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the marks be awarded accordingly.
2. As orders of the Hon'ble Supreme Court, the candidates would now be permitted to obtain photocopy of the Answer Book on request on payment of the prescribed fee. All 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.
3. All the Head Examiners/Examiners are instructed that while Evaluating the answer scripts, if the answer is found to be totally incorrect, the (x) should be marked on the incorrect answer and awarded '0' marks.

**PHYSICAL EDUCATION****Max. marks- 70****75/1****SET -4**

Q1 Fixtures are the schedule, fixed for the matches. What is a Bye? 1

Ans. A Bye in a fixture means that the team which gets a bye is exempted from playing the first round and enters the second round directly.

OR

Byes are given in the first round by which the number of teams playing in the 2<sup>nd</sup> round is reduced to power of two.

(Or any relevant statement)

Q2 What are renewable resources? 1

Ans. Renewable resources are those natural resources which can be used repeatedly, since it is replaced naturally/ replenished over time by some natural power eg. Sunlight, water, air etc.

Q3 Fats are derived from two sources. Name them. ( $\frac{1}{2} + \frac{1}{2} = 1$ )

Ans. Animals sources – Ghee, Butter, Curd, Fish Oil, Milk, Meat, Egg  
Vegetable Sources- Soyabean, Olive, Mustard, Coconut, Groundnut, etc.

Q4 What is Lordosis? Explain 1

Ans. Lordosis is a postural deformity of the spine. In this deformity, the spine curvature is increased inward in the lumbar region.

Q5 Define Motor Development. 1

Ans. Development of child's bones, muscles and ability to move around and manipulate his/her environment. (Gross motor development Fine motor development)

OR

Development of general body control, fine motor skills and large muscle movements

Q6 What is Menopause? 1

Ans. Menopause is a natural physiological change in women of age between 45-55 years, where there is a permanent cessation of menstruation cycle /primary functions of the ovaries due to hormonal changes.

Q7 What motor quality does a senior citizen lack, who finds difficulty in tying the shoe laces while sitting on a chair? 1

Ans. Lower body flexibility/ flexibility.

Q8 What is hypertrophy of muscles? 1

Ans. Increase in number of muscle fibres and size of muscle components resulting into enlargement of skeletal muscles.

Q9 What is contusion? 1

Ans. A soft tissue injury in which blood vessels in the muscles are broken and internal bleeding may occur on the injured part generally caused by direct hit with blunt object.

Q10 Define Friction and name its types. ( $\frac{1}{2} + \frac{1}{2} = 1$ )

Ans. The force that develops at the surfaces of contact of two bodies and opposes their relative motion is called friction

- i. Static friction
- ii. Dynamic friction

Q11 What does the word “Coping strategies” mean, when talking about sports psychology? 1

Ans. The thoughts and the actions we usually use to deal with a threatening situation is called coping strategies

**OR**

Making conscious efforts to solve personal and inter personal problems and seeking to minimize or tolerate stress or conflict is coping strategies.

Q12 Write three differences between Intramurals and Extramurals. 3

<u><b>Intramurals</b></u>	<u><b>Extramurals</b></u>
1. Activities within the wall/compound of the campus	1. Activities outside the Campus
2. Activities are organized only for the members of the schools / colleges / institutions.	2. Activities are organized for more than two schools / colleges / institutions.
3. Provides ample opportunities for every member of the school/institution to	3. Only selected members participate in the extramural activities.

participate in the activities.  4. It may not be played under fixed rules and regulations of the game. 5. Specific skills, techniques strategies may not be required. 6. Objective is recreation or talent hunt  7. Example : Inter -house , Inter-class etc.	4. Played under fixed rules and regulations of the game.  5. Required specific skills, techniques and tactics.  6. Objective is to enhance performance of individual or team  7. Example : Zonal , District ,State etc
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(Any three differences; 1 mark each)

**Q13** The river rafting belt of River Ganga in Uttarakhand near Rishikesh is a popular venue among adventure-lovers and thousands of National and International tourists visit every year. It helps a lot in generating revenue and developing state's economy. But, use of the river for recreational purposes is impacting the river environment negatively.

An important social survey conducted recently found water pollution, loss of vegetation, cultural degradation and displacement of wildlife, resulting directly due to rafting and camping activities.

Despite there being rules and regulations to maintain the holy river and its surroundings, violation of these norms is regularly happening, due to which there is great threat to the ecology and the river environment.

Answer the following questions.

(1) What are the threats posed to the River Ganga due to Commercial River rafting and camping? (  $\frac{1}{2} + \frac{1}{2} = 1$  )

Ans.

- Water pollution
- Loss of vegetation
- Cultural degradation
- Displacement of wild life
- Disturbance to ecological system

(Any two)

(2) What values do you learn from the above passage?

(  $\frac{1}{2} + \frac{1}{2} = 1$  )

Ans.

- Eco friendly

- Significance of nature
- Respect and protect nature
- Conservation of natural resources
- Maintain the eco system. (Any two)

(3) What measures will you suggest to improve this environment? ( $\frac{1}{2} + \frac{1}{2} = 1$ )

Ans.

- Do not pollute the water bodies with human or other manmade wastes.
  - Do not disturb the wildlife habitat.
  - Do not cut trees , plants , herbs and shrubs
  - Do not throw non- biodegradable items.
  - Do not create noise / sound pollution or Air pollution. (Any two)
- ( Any other relevant answer)

Q14 What is Osteoporosis ? Explain factors, those lead to Osteoporosis in women. (1+2=3)

Ans. Osteoporosis is weakening of the bones due to the loss of bone density

Factors those lead to Osteoporosis in women :

- Insufficient calcium in diet
- Lack of Vitamin D
- Sedentary life style.
- Side effects of medication
- Thyroid condition
- Due to the menstrual dysfunctioning in women.
- Eating disorders like anorexia bulimia/ poor nutrition

(Give one mark for each explanation, Any two)

Q15 Write a detail note on Harvard Step Test. 3

Ans Harvard Step Test was developed by Brouha in 1943. It measures the cardiovascular fitness or Aerobic fitness by checking the recovery pulse rate. In this test an athlete stands in front of a box or bench which is 16 inches (female) to 20 inches (male) in height and steps up and down for 5 minutes at a rate of 30 steps/ minute. The pulse rate is counted 1- 1 ½ minutes, 2- 2 ½ minutes and 3 – 3 ½ minutes immediately after the test is administrated.

The fitness Index score is calculated by a simple formula:

$$\frac{100 \times \text{test duration in seconds}}{2 \times (\text{sum of the heart beats taken in the recovery period})}$$

Q16 What is projectile? Explain any three factors that affect a projectile trajectory. (1+2=3)

Ans. An object thrown into the air at any angle against the action of gravity is called projectile.

Factors affecting projectile Trajectory:

- Angle of projectile- the angle at which it is projected.
- Projection and landing surface relation.
- Initial velocity
- Gravity
- Spin
- Air resistance (Explain any two points in second part)

Q17 What are the different dimensions of personality? Write in brief about any two.

Ans. The dimensions of personality are as follows: - (1+2=3)

- Physical dimension
- Mental dimension
- Social dimension
- Emotional dimension

(Give one mark for listing the dimensions of personality and any two to be explained-2 marks)

Q18 What is Fartlek Training? Write in brief. (1+2=3)

Ans.

- Gosta Holmer developed Fartlek training in 1937.
- Fartlek training method is used for developing endurance
- It is a combination of Aerobic and Anaerobic / Continuous and interval training.
- Fartlek is derived from Swedish word which means 'speed play'
- Athletes speed or pace is not preplanned and is decided according to the surroundings
- Self discipline is most important while undertaking the training.
- The range of heart beat should be 140 to 180 / minute
- Example

Jogging, slow running – 5 to 10 minutes

Steady, hard running – 1.5 to 2.5/ km

Rapid walking – 5 minutes

Sprints for about 50 to 60mts

Full speed up hill running for 175 to 200 mts

Free running / easy running

Fast pace/ minute

(Relevant information may be considered)

Q19 What is Endurance? Explain its types. (1+2=3)

Ans. The ability to sustain a physical activity over longer period of time resisting fatigue is called Endurance

a) **Endurance according to Nature of activity**

- Basic Endurance
- General Endurance
- Specific Endurance

b) **Endurance according to duration of activity**

- Long term Endurance
- Medium term Endurance
- Short term Endurance
- (please consider Speed Endurance and Strength Endurance also )  
(Explain any two of them)

Q20 What do you mean by 'Healthy-Weight' Explain the methods to control 'Healthy Body Weight to lead healthful-living'. (1+4=5)

Ans. Healthy weight is that body weight which allows an individual to lead a healthy life without any risk of diseases.

The healthy weight is known with the use of height and weight chart or calculates the BMI using the height, weight data.

**Method to control 'Healthy Body Weight'**

- Set appropriate goal
- Monitor the calorie intake.
- Health is more important than losing weight
- Healthy life style
- Regular physical exercise
- Pranayam
- Balance diet
- Avoid skipping meals.

(Any four to be explained in second part, if only points mentioned give ½ marks)

Q21 What are the causes of 'Flat-Foot' and 'Knock-Knees'? Suggest physical Activities as corrective measures for these deformities. (1+1+1 ½ + 1 ½ =5)

Ans. **Cause of flat foot**

- Genetic

- Weak muscles
- Over weight
- Improper foot wear
- Carrying heavy weight
- Forcing child to stand up at very early stage.

Cause of Knock knee

- Chronic illness
- Deficiency of calcium, vitamin D
- Mal nutrition
- Flat foot
- Carrying heavy weight at early age

(Any two causes for each deformity; give ½ marks for each)

Corrective measures for flat foot

- Walking on heels
- Walking on toes
- Rope skipping
- Jumping on toes
- Perform vajrasan, Tada asana
- Picking pebbles by toes
- Running on inclined plane / Stairs
- Cycling

Corrective measures for knock knees

- Horse riding
- Kicking football by instep kick
- Putting a pillow between the knees
- Padmasan , Gomukhasana
- Walking on inner side of the foot.

(Any three corrective measures for each deformity and give ½ marks for each)

Q22 Exercises have numerous physiological and physical benefits on children. Explain in detail. (5)

Ans. Physical Benefits:

- Good Motor development
- Posture alignment and good body image , improves physical appearance
- Reduces fatigue
- Increases alertness

- Weight management, prevents obesity
- Increases bone density and prevent from osteoarthritis
- Tolerance of hot and cold climatic conditions.
- Improves muscle Tone and minimizes the risk of injuries
- Improves neuromuscular co- ordination.

#### Physiological Benefits:

- Stronger immunity, reduces the chances of diseases
- Increase lactic acid tolerance
- Increase in size of fibres and connective tissues
- More blood supply
- Density of blood vessels increases
- Myoglobin increases.
- Oxidation of carbohydrate increases
- Improves muscle composition

(Any 5 points to be explained)

Q23 What do you mean by ‘Oxygen-Intake’ and ‘Oxygen-Uptake’? Explain the effects of exercise on Respiratory system. (1+1+3=5)

Ans. **Oxygen intake:**

The amount of oxygen intake by an athlete from the atmosphere is called oxygen intake. It depend upon lungs size, strength of muscles and number of alveoli

#### **Oxygen uptake:**

The amount of oxygen which can be absorbed and consumed by the working muscles from the blood is called oxygen uptake

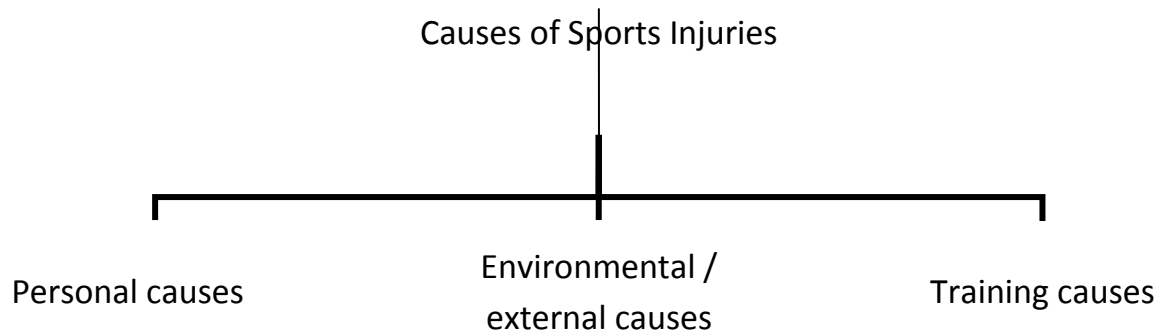
#### **Effect of exercise on respiratory system:**

- Increase depth of respiration
- Decrease rate of respiration
- Improve vital capacity
- Improve tidal volume capacity
- Increase pulmonary diffusion
- Supply more O<sub>2</sub> to muscles
- Strengthen the respiratory muscles
- Unused alveoli become active
- Avoid second wind with strong will power
- Faster recovery rate
- Increases residual air volume

- Increase size of lungs and chest
  - Maximum minute ventilation increased
  - Strengthens diaphragm muscles
- (Any three to be explained in second part; give 1 mark to each explanation)

Q24 What are the causes of ‘Sports-Injuries’? How Sports-Injuries can be prevented?  
Explain briefly. (2 + 3 =5)

Ans.



#### **Personal causes**

- Improper warm up –and cool- down
- Not following the rules and regulation.
- Protective clothing and equipment
- Knowing the limits
- Improper rest and relaxation
- Healing previous injury or inadequate rehabilitation
- Lack of conditioning
- Drug abuse.

#### **Environmental / external causes**

- Improper ground or poorly maintained facilities
- Extreme cold or heat
- Inadequate first – aid care
- Expectation of spectators
- Lack of medical check- up
- Improper diet

#### **Training causes**

- Without considering individual differences
- Lack of proper supervision

- Wrong method of training /poor coaching
- Lack of Systematic and scientific training
- Lack of psychological preparation.
- Improper load and recovery

### Prevention of Sports Injuries

- Overall conditioning
- Pre participation physical examination / medical check-up
- Coaching under expert trainer/ physio/ coach
- Stress on proper physical fitness.
- Balance diet
- Acclimatization with environment/ coaching according to climatic conditions
- Training according to periodisation
- Intake of sufficient fluid
- Adequate clothing and equipments
- Standardized play field/ court
- Documentation of injuries
- Knowledge of First aid.
- Protective sport gears.

Q25 What is the difference between Running and Walking? Explain mechanical Analysis of Running'. (2+3)

Ans.

<u>Running</u>	<u>Walking</u>
<ul style="list-style-type: none"> <li>• Running is process in which both feet are in the air at one point of time</li> <li>• Double swing phase</li> <li>• Movement in the limbs is faster</li> <li>• Range of motion is greater</li> <li>• Duration of swing phase is longer</li> </ul>	<ul style="list-style-type: none"> <li>• Walking is a process in which atleast one foot remains in contact with the ground</li> <li>• Single swing phase</li> <li>• Movement in the limbs is slower</li> <li>• Range of motion is less</li> <li>• Duration of stance phase is longer</li> </ul>

(Any two differences)

### **Mechanical analysis of running**

1. Stance phase
  - Initial contact stage
  - Absorption stage
  - Mid stance stage
  - Propulsive stage
2. Swing phase

Q26 What is 'Kraus-Weber-Test'? Explain the administration of Kraus-Weber test in detail. (1+4=5)

Ans.

Dr. Harns Kraus and Dr. Sonja Weber developed the Kraus Weber test in 1950's.

Kraus Weber test is used to measure the general muscular fitness of an individual.

It helps to measure the strength and flexibility of muscles.

This test consists of 6 items, and each item is administered by a score 0-10.

### **Administration of test**

Test no. 1: Strength of Abdominal and Psoas Muscles (Sit ups)

Test no. 2: Strength of Abdominal minus Psoas Muscles (bends knees sit ups)

Test no. 3: Strength of Psoas and lower Abdominal Muscles: - lie supine position raise the feet 10 inches above ground and hold for 10 counts

Test no. 4: Strength of Upper back Muscles: - lie prone lift upper body and hold for 10 counts.

Test no. 5: Strength of Lower back Muscles: - lie prone position – lift the lower body- hold for 10 counts.

Test no. 6: Floor touch Test–Flexibility.