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UT/PETHAK/12223/A 06-NOV-2023

UNIT TEST - NOVEMBER 2023

ANSWER KEY

SUBJECT: Physical Education (048) Maximum Marks: 50

CLASS: 12th Grade TIME: 2 Hours.

SECTION A

1. Special Olympic India was formed in which year? (1)

a) 1987 b) 1968 c) 2001 d) 1960

2. What is the scientific name of Vitamin B5? (1)

a) Niacin b) Riboflavin c) Thiamin d) Pantothenic Acid

3. AS per the SAI Khelo India Fitness test, which BMI Range fall under Normal Range? (1)

a) BMI 15 to 17.5 b) BMI 18.5 to 24.9 c) BMI 17.5 to 21.5 d) BMI 16 to 19.5

4. When an athlete works so hard and the demand for oxygen and fuel exceeds the rate of supply and the muscles have to rely on the stored reserves of fuel is \_\_\_\_\_\_\_\_\_\_\_? (1)

a) Speed Endurance b) Strength Endurance c) Aerobic Endurance d) Anaerobic Endurance

5. Match the following: - (1)

(a) Equality through Sports - (i) Joy and happiness to all the children of the world

(b) Special Olympics - (ii) Advantage of PE for Divyang

(c) Better IQ and Motor Skills - (iii) Inclusion

(d) All Students Learn together - (iv) Deaflympics

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

(b) A-ii, B-i, C-iV, D-iii

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

(d) A-IV, B-i, C-ii, D-iii

6. Assertion (A): Iron is a mineral. It is required to produce hemoglobin.

Reason (R): Minerals are required by our body in large amounts. (1)

In the context of above tow statements which one of the following is correct:

a) both (A) and (R) are true, but (R) is not correct explanation of (A)

b) both (A) and (R) are true and (R) is the correct explanation of (A)

c) (A) is true but (R) is false

d) (A) is false but (R) is true

7. Assertion (A): In an inclusion approach, students with special needs are fully integrated into the general education classrooms at a school.

Reason (R): Diversified teaching strategies benefit all the students with disabilities. Which develops their social communication skills. (1)

In the context of above tow statements which one of the following is correct:

a) both (A) and (R) are true and (R) is the correct explanation of (A)

b) both (A) and (R) are true, but (R) is not correct explanation of (A)

c) (A) is true but (R) is false

d) (A) is false but (R) is true

8. The sportsperson to be eligible to participate in Deaflympic Games must have hearing loss of minimum \_\_\_\_\_\_\_\_\_\_\_\_\_? (1)

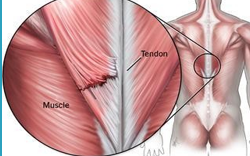
a) 15 decibels b) 55 decibels c) 25 decibels d) 15 to 45 decibels

9. Match list - 1 with list - 2 and select the correct code given below (1)

|  |  |  |  |
| --- | --- | --- | --- |
| `1 | Delay in Second wind | a | Cause of sports injuries |
| 2 | Increase blood flow in the body | b | Prevention of Sports injuries |
| 3 | Lack of Knowledge of Sports rules | c | Long Term effect of Exercise |
| 4 | Avoid dehydration and Adequate Rehabilitation | d | Immediate effect of Exercise |

a) 1-c, 2-d, 3-a, 4-b b) 1-d, 2-c, 3-b, 4-a c) 1-a, 2-b, 3-c, 4-d d)1-b, 2-c, 3-b, 4-a

10. Identify the Sports injury in the picture given below. (1)



a) Abration b) Fracture c) Strain d) Dislocation

11. Identity the picture and find out the Bone Injury. (1)



a) Transverse injury b) Compound Injury c) Greenstick d) Simple Fracture

Section B

12. Briefly explain the concept of classification in Paralympics. (2)

Ans - Classification determines which athletes are eligible to compete in a sport and how those athletes are then grouped together for competition to minimise the impact of the athletes' impairments on sport performance. This is done to safeguard the integrity of fair competition.

Classification is sport-specific because an impairment affects the ability to perform in different sports to a different extent. Therefore, an athlete may meet the criteria in one sport, but may not meet the criteria in another sport. Having an impairment is thus not sufficient for an athlete to compete in Para sport.

The groupings of athletes by the degree of activity limitation resulting from their impairments are called 'Sport Classes'. This, to a certain extent, is like grouping athletes by age, gender, or weight.

13. What is the other name of complex carbohydrate? Name down any two functions of carbohydrate. (2)

Ans - They are „Good Carbs‟ which are also known as Polysaccharides, are formed by Long Chains, not Sweet in taste, Insoluble in water.

The primary purpose of carbohydrates in our diet is to provide fuel for our bodies. Most carbs get broken down or transformed into glucose, which can be used as energy. Carbs can also be turned into fat (stored energy) for later use. Fiber is an exception. It doesn’t provide energy directly, but it does feed the friendly bacteria in the digestive system. These bacteria can use fiber to produce fatty acids that some of our cells can use as energy.

14. Write down the formula to computation of fitness index. (2)

Ans - Short Form Equation - Fitness Index = (100 x test duration in seconds) divided by (5.5 x pulse count between 1 and 1.5 minutes).

Long Form Equation - Fitness Index= (100 x test duration in seconds) divided by (2 x sum of heartbeats in the recovery periods).

15. Muscle composition is an important factor which determines strength. How? (2)

Ans - You’re probably already familiar with fast-twitch and slow-twitch muscle fibres. Slow-twitch muscle fibres have a slow rate of shortening, but they’re also highly resistant to fatigue. They’re primarily called into play during aerobic exercise and endurance training. In contrast, fast-twitch muscle fibres can generate force 3 to 5 times faster than slow-twitch fibres, but they fatigue more rapidly. Fast-twitch muscles are the ones called into play when you need to generate large amounts of force to lift a large load such as a heavy weight. Most people have roughly equal quantities of fast and slow-twitch muscle fibres, but people who excel at sports that involve strength may have a higher ratio of fast-twitch to slow-twitch muscle fibres. Having more fast-twitch muscle fibres is one factor that contributes to muscle strength.

16. Compose a short note on the role of “Oxygen Uptake” in Endurance based Activity such as long distance running or cycling. (2)

Ans - Oxygen uptake: The amount of oxygen which can be absorbed and consumed by the working muscles from body is called Oxygen uptake. The speed & amount of oxygen consumption depend on the rate of diffusion (spread) of oxygen in the cells & can be improved to some extent through training.

Section C

17. What is contusion? Briefly explain along with their signs and symptoms. (3)

Ans - Contusion is a muscle injury. A direct hit with or without any sports equipment can be the reason of contusion. It’s natural to have swelling and stiffness on the affected area. Contusion is common in Boxing, Hockey, Wrestling, Kabaddi, etc

SIGN & SYMPTOMS

* Swelling and pain on the contused part.
* Stiffness over the area.
* Discoloration under skin

18. What do you understand by Basal Metabolic Rate (BMR)? Dot down the factors BMR influenced by. (3)

Ans - BMR stands for basal metabolic rate. It measures the number of calories burned by an individual when completely at rest.

* It includes the energy used by the body to maintain the vital processes and organ functions: Maintenance of body temperature, Movement of fluids, Respiration, Heartbeat and Thinking.

BMR is influenced by several factors like as

age, weight, height, gender, environment, temperature, exercise habits and dieting.

* The amount of energy used in performing these functions, when the body is at complete rest (both mentally and physically) is termed as basal metabolic rate.

19. List down any three Macro Minerals required in our balance diet and what is their role in the human body? (3)

Ans – CALCIUM - Calcium is found in our Body in the largest amount. Calcium is necessary for Growth & Development of our Bones and Teeth. It helps in Blood Clotting. Its Deficiency may cause Rickets.

PHOSPHORUS - Phosphorus is also found in our body. It keeps our Bones and Teeth healthy. Daily intake of Phosphorus is 600 mg/day. It also keeps Muscles and Nerve activities normal.

SODIUM - High dietary sodium intake can be detrimental to health; sodium is considered an essential major mineral as it is present in the body. It helps in Muscular activities and Transmission of Nerve Impulses.

20. Write any of three points which directly relate to the need for inclusion in sports. (3)

Ans - Being part of an inclusive sport environment gives individuals positive social and health outcomes. It provides a space where diverse groups can build trust in one another, helping to break down social and cultural stigmas or barriers, and strengthen overall community connections.

Section D

21. Based on given fixture answer the following questions. (4X1=4)

A black line on a white surface

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1. The Measurements are particular to which test?

Ans - Johnsen – Methney Test of Motor Educability.

1. What is the purpose of conducting this test?

Ans – To measure the native neuromuscular skill capacity.

1. Write all the motor stunts that consist in this test battery.

Ans – Front Roll, Back Roll, Jumping Half turn – 180’, Jumping full turn – 360’.

1. Which motor stunts / test stunts are used for the girls?

Ans – Front roll, Bak roll and jumping half turn – 180’.

22. Briefly explain four Advantages of Physical Activities for the CWSN students. (4x1=4)

Ans – Reduce depression and stress, Improve social interaction, Many cognitive benefits,

Increases fitness and stress levels, improve health quality, Decreases other health issues.

23. Based on the pictures below, answer the following questions. (4X1=4)

A close-up of a hand and a hand

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(a) Identify the type of injury.

(b) Name two more injuries of this type.

(c) This injury most commonly affects the\_\_\_\_\_ of the four fingers.

(d) Mention the cause of this injury.

Ans - (a) Dislocated finger (b) Ankle dislocation and elbow dislocation (c) middle knuckle (d) This injury is usually caused either by over -bending the finger backwards or catching the finger somewhere during fast movement.

24. Briefly describe the Fats and their types. (4)

Ans - Fats are also known as LIPIDS. They Contain Carbon, Hydrogen and Oxygen in the ratio 76:12:12. Fats are Stored in body and are used as Emergency Source of Energy. Fats are a Backup Source of Energy. It regulates the Body Temperature or keep us Warm and protect our Organs from damaging. Help in Production of Hormones. 1 gram of Fat on burning gives 9 gram of Calories or Energy. 1:9.

Two Type of Fatty Acids

* Saturated Fatty Acids (Solid at Room Temperature) They are found in Food items like Dairy products / Animal sources such as Cream, Butter, Ghee, Animal Fat etc.
  + Unsaturated Fatty Acids (Always Liquid)

This fatty acid largely comes from Plants / Vegetables sources like Coconut Oil, Palm Oil, Peanut Oil, Soya Oil etc.

Section E

25. Describe the procedure to conduct the Harward steps test. (5)

Ans – Purpose: Harvard step test was developed by Boruah in 1943 for the purpose of measuring physical fitness for work and the ability to recover from work. It is a cardiovascular fitness test or called aerobic fitness test. It used to measure the cardiovascular fitness or aerobic fitness by checking the recovery rate.

Objective: The objective of this test is to monitor the development of the athlete’s cardiovascular system. To perform step test continuously without break for 5 minutes or until exhausted.

Equipment: Bench or wooden block 20 inches in height; stopwatch.

Procedure: Student will start test at the command “Go” and will step up and down, on and off the wooden block or bench at the rate of 30 steps per minute for 5 minutes. If the student is unable to maintain the pace, then she / he is exhausted, and the test is ended.

* Example: If the total test duration was 300 seconds and the number of heart beats between 1 to 1.5 minutes was 90, between 2 to 2.5 minutes was 80 and between 3 to 3.5 was 70, then

Fitness Index Score: Duration of Test in seconds x 100

2 x Sum of Heart Beats in recovery period

Fitness Index Score: (100 X 300)

(2 X 240) = 62.5

* Here, the sum of the heart beats is 90 + 80 + 70 = 240

26. Write on the Importance of diet in Sports – Pre, During and Post Competition requirements. (5)

Ans - Eating a well-balanced meal before a competition helps give an athlete the essential vitamins and minerals needed in the diet but also gives the athlete energy to perform. All meals should have enough calories to cover the expended energy an athlete uses during the competition. However, most of those calories should come from complex carbohydrates such as cereal, pasta, and potatoes. Basically, eating a pre-event meal gives energy, prevents fatigue, decreases hunger pains, and provides hydration to the body. In combination with the pre-event meal, all athletes should properly hydrate their bodies with water several hours before the competition begins and continue throughout the competition. Below you will find the basics of pre-event meals.

* Meal should be eaten 2-4 hours before the competition begins.
* Most energy comes from eating meals during this time frame.
* Food needs 1-4 hours to fully digest and absorb into the body.
* The bigger the meal the more time needed for digestion.
* Optimally the pre-event meal should consist of 500-1000 calories, which should come from a variety of food sources.
* Foods should be high in carbohydrates & starch (easier for the body to breakdown and digest)
* Liquid meals can be used 20-30 minutes before competition.

Post-Event Meals

The post-event meal is important for any athlete after competition. This meal helps replenish glycogen (energy) stores and electrolyte imbalances. The basic goal for the post-event meal is to refuel the muscles and prepare for the next competition or practice. Doing this will decrease the chances of muscle fatigue and performance.

* Important for daily work outs and sport activity
* Eat 15-30 minutes after competition has ended.
* A liquid meal can be used in place of solid food 15-30 minutes after competition (easily digested and absorbed by the body)
* This time frame is when the body is most receptive to energy replacement techniques.
* Eating a full meal 2-4 hours post-event help with the recovery period
* Well balanced meal high in carbohydrates (main energy source)
* Eat meals high in carbohydrates but also include minimal amounts of protein and fatty foods.
* The amount of calories needed to refuel the body depends on duration of event, body size and expended energy
* Rehydrating the body after competition is a main priority.

27. Explain the types of fracture and dislocation and their types in detail. (5)

Ans - Bone injury can be classified in two categories as follows: (Fracture & Dislocation)

Simple Fracture: The fracture without any wound is called simple fracture. A fracture is called simple (closed) when the overlying skin is not broken, and the bone is not exposed to the air.

Compound or Open Fracture: In this fracture there is cut over the skin by the sharp edges of broken bone or by external object along with broken bones. Generally, the broken bone comes out through the skin by tearing it.

Stress Fracture:

It may occur because of overuse injuries and the failure to have adequate equipment to protect the body. Track and field athletes and military recruits who carry heavy packs over long distances are particularly susceptible, but anyone can have a stress fracture. That is why it is common in athletes and runners.

Green Stick Fracture:

These are commonly seen in children because their bone is very soft and delicate, so whenever there is any stress on the bone it is bent. It occurs when a bone bends and cracks, it looks like what happens when you try to break a small, "green" branch of a tree.

Comminuted Fracture:

A fracture in which bone is broken into many small pieces (more than two pieces). Such type of fracture is possible in cycle race or motorcycle race.

Oblige Bone Fracture, Impacted Fracture, Transverse Fracture. Etc.

Dislocation:

Injury to a joint in which adjoining bones are displaced from their normal position. Ligaments that bind the joints also get injured. Shoulder, elbow, thumb, and finger joints are the joints that get dislocated frequently. One end of the bone slips from its fixed place, which is also called as bone displacement.

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