

Roll Number		
-------------	--	--

Code Number 48/3



INDIAN SCHOOL MUSCAT  
THIRD PRELIMINARY EXAMINATION  
PHYSICAL EDUCATION

CLASS: XII  
14.02.2018

Sub. Code:048

Time Allotted: 3 Hrs  
Max. Marks: 70

**General Instructions:**

- 1) *The question paper consists of 26 questions.*
- 2) *All questions are compulsory.*
- 3) *Answer to question 1-11 carrying 1 mark should be in approximately 20- 30 words.*
- 4) *Answer to question 12-19 carrying 3 marks should be in approximately 80-100 words.*
- 5) *Answer to question 20-26 carrying 5 marks should be in approximately 150-200 words.*

Q.1 Round –Robin Tournament is of two types. Name them and give one major difference between them. 1

Ans: There are two types of league tournaments.

- i) Single league tournament: In single league, every team plays with every other team once. No. of matches =  $N(N-1)/2$
- ii) Double league tournament: In double league, every team plays with every other team twice. No. of matches =  $N(N-1)$

Q.2 Critically explain the use of dietary supplements in heavy dose for longer duration. Justify your answer with two suitable examples. 1

Ans: Dietary supplements if taken in heavy doses can be toxic and cause serious side effects.

For example: Heavy dose of vitamin A can cause liver damage, blurred vision, headache, bone pain and nausea.

Heavy dose of iron can cause digestive problems.

Q.3 Write any two benefits of Vajrasana in obesity. 1

Ans: i) It helps to prevent acidity and ulcers by improving the digestion.

- ii) It is a good meditative pose for those suffering from sciatica and severe lower back problems.

Q.4 Give some examples of cognitive disability. 1

Ans: Some examples of cognitive disability are children suffering from dyslexia, speech disorders, problems in solving mathematical calculations, short attention span, short memory and learning difficulties.

Q.5 What are the advantages of correct posture? 1

Ans: a) Increases flexibility b) Improves physical appearance c) More energy.

Q.6 What is osteoporosis? 1

Ans: osteoporosis is a weakening of the bones due to the loss of bone density and improper bone formation. This condition can ruin a female athlete's career because it may lead to bone fractures and other injuries. Cause of osteoporosis in women are as follows

- i) Hormonal changes occurring during menopause they may reduce bone density.
- ii) Lack of calcium and vitamin D in diet.

Q.7 Calculate the Physical Fitness Index using short formula for a 12 year old boy having completed Harvard step test for a duration of 3 minutes and a pulse rate of 54 beats for 1 to 1.5 minutes. 1

Ans: Physical fitness index( short formula)=  $(100 \times \text{test duration in seconds}) / (5.5 \times \text{pulse count between 1 and 1.5 minutes})$   
 $= 100 \times 180 / 5.5 \times 54 = 60.6$

Q.8 What is stroke volume? 1

Ans: The amount of blood pumped into the aorta with every heartbeat is known as the stroke volume. In an untrained male it is 70ml/beat to 90ml/beat.

Q.9 What kind of sports injury can be termed as Abrasion? 1

Ans: In dermatology, an abrasion is a wound caused by superficial damage to the skin, no deeper than the epidermis. Mild abrasion is known as grazes or scrapes, a more traumatic abrasion that removes all layers of skin is known as avulsion.

Q.10 How participation in physical activities enhances self-esteem among children? 1

Ans: Enhanced coping skills can translate into lifetime benefits such as Reduced anxiety, A more optimistic outlook on life, Fewer interpersonal problems, Less chances of conforming due to social pressure, A better body image, Being less likely to engage in risky behavior such as drug use.

Q.11 What is dynamic friction? 1

Ans: Dynamic friction is the opposing force that comes into play when one body is actually

moving over the surface of another body. Dynamic friction may be two types i.e. sliding friction and rolling friction.

Q.12 What do you mean by knock-out tournament? Draw the fixture of 21 teams on knock-out basis. 3

Ans: In this type of tournament, the team which is defeated once gets eliminated immediately and will not be given another chance to play. The total number of matches to be played in this tournament will be equal to the number of teams participating minus one ( $N - 1$ ), e.g. if 21 teams are participating the total number of matches will be  $21 - 1 = 20$

Number of teams in UH =  $N + 1/2 = 21 + 1/2 = 11$  teams

Number of teams in LH =  $N - 1/2 = 21 - 1/2 = 10$  teams

Number of byes = next power of two - total teams =  $32 - 21 = 11$  byes

Q.13 Sunitha wanted to learn boxing but her brothers made fun of her and ridiculed her. Her father on seeing her interest, sent her to a professional coach to learn that sport properly. 3

a. Why was Sunitha ridiculed by her brothers? What does it show?

Ans: Sunitha was ridiculed by her brothers because she wanted to learn a sport that was dominated by males. This shows gender discrimination.

b. What values are shown by Sunitha's father?

Ans: The values shown by Sunitha's father are right judgement, good thinking and rationality.

Q.14 What are vitamins? Name the types of vitamins. 3

Ans: Vitamins are compounds of carbon. They protect us from various diseases and are essential for general growth and development of our body.

Types of vitamins: There are various vitamins such as A, C, D, E, K and B complex (B1, B2, B3, B5, B6, B7, B9 and B12)

There are two groups of vitamins

FAT SOLUBLE VITAMINS: Fat soluble vitamins are those vitamins which are soluble in fat. These vitamins are A, D, E and K.

Vitamin A: is essential for normal growth, proper functioning of nervous system and digestive system.

Vitamin D: is essential for healthy bones and teeth.

Vitamin E: increases fertility and ensures proper functioning of the glands.

Vitamin K: helps in clotting of blood.

WATER SOLUBLE VITAMINS: These vitamins are soluble in water. These contain the elements of nitrogen and sulphur. These vitamins are B complex and C.

Vitamin B complex: consists of various groups of vitamins namely B1, B2, B3, B6 and B12. They are necessary for proper growth and functioning of various organs of the body.

Vitamin C: essential for maintenance of ligaments, tissues, tendons, and strong blood vessels.

- Q.15 Explain the Yoga and Asana. 3
- Ans: Yoga: The term yoga derived from the Sanskrit word Yuj . Yoga means union of the individual consciousness or soul with the universal consciousness or spirit. Yoga is not only a physical exercise but the infinite potentials of the human mind and soul. The science of yoga imbibes the complete essence of the way of life.  
Asana: It refers to the position in which a person sits/ stands to do yoga. Asanas are beneficial for the muscles , joints , cardiovascular system, nervous system and lymphatic system. It prevents from life style diseases . It strengthens and balances the entire nervous system.
- Q.16 What is meant by motivation? Explain the different techniques of motivation for higher achievement in sports. 3
- Ans: Motivation is a process through which an individual is inspired or stimulated to act in a particular fashion or manner towards a particular direction.  
Techniques of motivation for higher achievement in sports are:
- i) Knowing your athlete: Each athlete comes from a different background with varied experience and having different degrees of maturity.
  - ii) Level of aspiration/ goal setting: As we know that achieving performance goals is a sign of competence that affects motivation positively, it is necessary to set realistic goals based on one's own abilities.
  - iii) Identifying incentive factors: If an athlete perceives that any particular kind of experience are available to him in a given sport and he feels that these will be pleasant , enjoyable or satisfying , then he will choose to participate in that game or sport and not any other.
- Q.17 Explain the developmental characteristics during infancy. 3
- Ans: The developmental characteristics are as follows
- i) Arm extended in front of eyes on the side to which the head is turned, other arm flexed.
  - ii) Lifts one foot after another in stepping response.
  - iii) Spontaneous grasp of adults' finger.
  - iv) Rolls from side to back
  - v) Crawls.
  - vi) Stands and walks alone.
- Q.18 Write the full forms of ADHD and SPD. Elaborate on the causes that lead to the two disorders. 3
- Ans: The full form of ADHD is Attention Deficit Hyperactivity Disorder and SPD is sensory Processing Disorder.  
ADHD : is due to certain genes and genetic mutations. Children who have had traumatic brain injuries or who have epilepsy can often have ADHD symptoms.  
SPD: Children affected with SPD are said to have been under stimulated during critical periods of development. Genetic or heredity factors such as having a history of autism or SPD in the family.

Q.19 How a coach can help the participants to reduce stress through coping strategies before a competition? 3

Ans: Coping strategies are the skills to solve personal and interpersonal problems through which stress can be reduced. A coach can help the participants in two ways.

- i) Problem Focussed Coping: Here coach can help by dealing directly with the problem or solving the condition that is causing stress.
- ii) Emotion Focussed Coping: Here coach can help the participants in expressing their emotions and deal with embarrassment, fear, anxiety, depression, excitement etc.

Q.20 What are specific sports programmes? Explain with suitable example. 5

Ans: Specific sports programmes are those programmes of sports which are not usually related to competitions. The programmes have various objectives like creating awareness, creating a sense of integration among people and raising funds for charitable organizations.

- i) Sports Day: Sports days are rapidly growing in popularity and deserve a prominent place in the intramurals and extramurals athletic programmes of any school, college or other organization. Sports day refers to a programme when one or several schools, colleges or other organizations participate in physical education activities. They may invite several teams for various sports. When these organized, each team is identifies with the institution it represents. Sports day may also be used to culminate a season of activity for participants within the same school or college.
- ii) Health Run: It is organized in almost every part of the world. In India, It is organized by many states to make people health conscious. For this WHO allots sufficient funds to different organizations. These organizations organize and promote health runs. This health runs lay stress on removing deadly diseases. Health runs and rallies are organized every year in the world on 1<sup>st</sup> December to commemorate AIDS Day. These runs give knowledge to people about AIDS, symptoms and causes and how to take preventive measures.
- iii) Run for Unity: It is a kind of mass running which generates the feeling of unity. It is organized by different nations by their Central Government, Sports federations etc. to create feeling of oneness among the people. By organizing such runs people of all ages from different states come together and such runs develop the feeling of patriotism in children and students feel that they all belong to one nation.

Q.21 What is the role of various elements of diet on performance of an athlete? 5

Ans: For an athlete, it is essential to take a balanced diet as lot of physical activity and endurance is needed in sports.

The quality of sports diet depends on the correct proportion of carbohydrates, fats, proteins, minerals, salts etc. which constitute the main nutrients of diet.

Functions of different elements of diet are :

- i) Carbohydrates are helpful in increasing endurance.

- ii) Protein is necessary for the growth and development of various tissues of the body.
- iii) A minimum amount of fat is desirable for a long distance runner, high jumper or gymnast.
- iv) Diet prevents various diseases, maintains healthy weight.
- v) Vitamins are essential for good performance and overall development of the body.
- vi) Water is essential as it helps in relieving the body of waste material and transportation of nutrients to cell.

Q.22 Explain five strategies to make physical activities accessible for children with special needs. 5

- Ans:
- i) Inclusive classrooms: it means development of education laws in such a way that children with special needs get education within the normal classrooms along with the other children so that they are well accepted in society.
  - ii) Assistive technology: it refers to creating devices, tools or equipments that help children with special needs to participate in learning activities like bigger balls, balls with bells, balls attached to strings to bring it back to the students etc.
  - iii) Adaptive physical education: depending on students' disability a separate, adaptive class or modification within a game, changing the rules of a game or sport to some extent can help the students in a big way.
  - iv) Creating specific environment: students with special needs can be provided with specific play area with special requirements as needed by them. Loud music, glaring lights often cannot be tolerated by these children. So lot of natural lighting should be there.
  - v) Positive behavior: in physical education classes teachers should show positive behavior and healthy interactions and prevent negative behaviours. The method is to prevent, teach, reinforce. This means class material taught through positive interactions, lesson reinforced by referring back to behavioural expectations and evaluating progress.

Q.23 What are the various factors affecting physiological fitness? Explain. 5

- Ans:
- i) Muscular strength: this is the maximum force or tension a muscle or a muscle group can exert against a resistance. Physiologically the muscle will increase in strength only if it has to increase its work load. Beyond what is ordinarily required of it.
  - ii) Power: this is the ability of the body to release maximum muscle contraction in the shortest possible time.
  - iii) Speed: this is the rapidity with which one can repeat successive movement of the same pattern.
  - iv) Muscular endurance: this is the ability of a muscle or a muscle group to perform repeated contractions against a resistance or a load or to sustain contraction for an extended period of time with less discomfort and more rapid recovery.

- v) **Agility:** this is the ability of a person to change direction or body position as quickly as possible and regain body control to proceed with another movement.
- vi) **Flexibility:** this is a quality of the muscles, ligaments and tendons that enable the joints of the body to move easily through a complete range of movements.

Q.24 Define sports injuries. Write classification and prevention of sports injuries. 5

Ans: Sports injuries are injuries that occur in sports related activities. They can result from acute trauma or from overuse of particular body part.

Classification: can be based on the time taken for the tissues to become injured (Acute and overuse injuries) tissue type affected and the severity of the injury.

Prevention:

- i) Warm up and cool down – aids in recovery as well as preparation.
- ii) Planning a session – considering frequency, intensity, duration and type of training method.
- iii) Using productive equipment – it prevents harmful movements, reduced or dispersed shock and force.
- iv) Adherence to the rules – can reduce injuries.
- v) Regular fitness testing – will ensure individuals have the basic fitness to participate safely and effectively.
- vi) Psychological training – some form of mental skills training and practice could reduce injury by reducing anxiety, improving attention and allowing an athlete to achieve optimal arousal.
- vii) Meeting nutritional requirements – increasing carbohydrates, fluid and protein intake can play an important role in injury prevention.

Q.25 Discuss the role of teachers and parents in the management of adolescent problems. 5

Ans: I) Education for motor development – adolescence should be encouraged to play various games and sports. Through these activities their motor development will take place properly.

II) Education of Psychology – the teachers and parents should be able to understand the psychology of an adolescent. This is essential to sort out any problems of the adolescence.

III) Sex education – we have been living in such a society where sex education is not provided properly. However it should be taught in schools. Teachers as well as parents should provide sex education to adolescence without hesitation.

IV) Moral and religious education: religious and moral education will give adolescence mental peace. Problems like anxiety, indiscipline and worry can be tackled easily through such education. It should be provided by both parents and teachers.

Q.26 Define flexibility and explain the methods of flexibility development. 5

Ans: Flexibility is the range of movement. It is the ability of joints to move in the maximum range.

Developing methods of flexibility are :

- i) Ballistic method: it is the oldest form of doing stretching exercises. This method involves jerk in movements. A joint or muscle is stretched with just rhythmic actions or movements around a joint.
- ii) Slow stretching method: in this method the muscle or joint involved is stretched to the maximum possible limit using slow movement.
- iii) Slow stretching and holding method: it is the extension of slow stretching method. Here the muscle is stretched to its maximum limit and then the position is held for few seconds.
- iv) Post isometric stretching: this method of flexibility development is based on the principle of proprioceptive neuromuscular facilitation. In this procedure the muscle is first contracted maximally to 6-8seconds using isometric method. Then the muscle is gradually stretched to its maximum limit and held for 8-10 seconds.

\*\*\*\*\*