

**SAMPLE QUESTION PAPER - 4**  
**PHYSICAL EDUCATION (048)**  
**SESSION (2022-23)**

TIME ALLOWED: 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) Section E consists of Question 34-37 carrying 5 marks each and are short answer types and should not exceed 200-300 words. Attempt any 3.

**Section A**

1. What is the meaning of Psyche? [1]

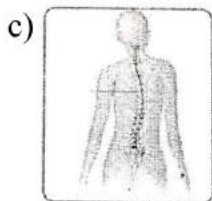
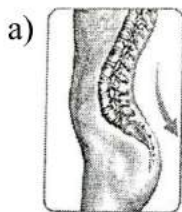
- |              |                 |
|--------------|-----------------|
| a) Science   | b) Soul         |
| c) Behaviour | d) Environement |

2. Identify the asana: [1]



- |             |                      |
|-------------|----------------------|
| a) Halasana | b) Vajrasana         |
| c) Tadasana | d) Paschimottanasana |

3. Among the given figure, which one represents the flatfoot? [1]



4. Speed play is another name for which method? [1]

- a) Continuous method                      b) Fartlek method  
c) Isokinetic method                      d) Interval method

5. **Assertion (A):** According to Newton's Second. Law of Motion, "acceleration produced in an object due to extent force is directly proportional to the force producing it and inversely proportional to its mass". [1]

**Reason (R):** Golf ball will continue to move at a constant velocity unless a force acts on it to slow it down or change its direction.

- 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 the correct explanation of A.  
c) A is true but R is false.                      d) A is false but R is true.

6. **Assertion (A):** Vitamins are compounds of carbon that are essential for the normal growth and working of the body. [1]

**Reason (R):** Vitamin D is essential for the normal growth of the body. The deficiency of Vitamin A leads to night blindness and also affects kidneys, nervous system, and digestive system.

- 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 the correct explanation of A.  
c) A is true but R is false.                      d) A is false but R is true.

7. Which of the following is not a long-term effect of the exercise? [1]

- a) Increase in heart rate                      b) Decrease in cholesterol level  
c) Increase in heart size                      d) Reduced stress and anxiety

8. What does Plate Tapping Test measure in Khelo India Fitness Assessment Battery of Tests? [1]

- a) Speed                      b) Co-ordination

c) Flexibility

d) Endurance

9. **Assertion (A):** seeding is done to overcome the drawback of the knockout tournament [1]

**Reason (R):** It protects the stronger teams from the weaker teams in early rounds.

- 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 the correct explanation of A.  
c) A is true but R is false.      d) A is false but R is true.

10. What is the equipment used for Flexibility Test in Khelo India Fitness Assessment Battery of Tests? [1]

- a) Reach and Sit Box      b) Sit & Reach Box  
c) Beam      d) Yoga Mat

11. What is the number of matches played in the type of tournament shown below? [1]

1-2						
1-3	2-3					
1-4	2-4	3-4				
1-5	2-5	3-5	4-5			
1-6	2-6	3-6	4-6	5-6		
1-7	2-7	3-7	4-7	5-7	6-7	

- a) 21      b) 7  
c) 18      d) 14

12. Which of the following is a biological need of a person? [1]

- a) self-esteem      b) safety  
c) hunger      d) attitude

13. Pawanmuktasana is also known as \_\_\_\_\_. [1]

- a) Wind relieving pose      b) Cobra pose  
c) Mountain pose      d) Calming Posture

14. To calculate the total no of teams in the upper half for knock out tournaments, when total no of teams is odd, which formula is used? [1]

- a)  $\frac{N+1}{2}$       b)  $\frac{N^2+1}{2}$   
c)  $\frac{(N+1)^2}{2}$       d)  $N - 1$

15. Match the following: [1]

(i) Speed	(a) Age/gender
(ii) Strength	(b) Aerobic capacity



(iii) Endurance	(c) Muscle size
(iv) Flexibility	(d) Explosive strength

- a) (i) - (a), (ii) - (b), (iii) - (d), (iv) - (c)      b) (i) - (d), (ii) - (c), (iii) - (b), (iv) - (a)
- c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c)      d) (i) - (c), (ii) - (b), (iii) - (a), (iv) - (d)

16. The intention to cause mental or physical harm to a person is called \_\_\_\_\_ in sports. [1]

- a) aggression      b) support  
c) attitude      d) strength

17. Match the following: [1]

(i) Protein	(a) Teeth and blood-related discuss
(ii) Water	(b) Growth of skin, nails, hair, internal organs
(iii) Colour compound	(c) 60-70% of the human body
(iv) Dieting	(d) Make food appealing

- a) (i) - (b), (ii) - (c), (iii) - (d), (iv) - (a)      b) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)
- c) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)      d) (i) - (c), (ii) - (d), (iii) - (a), (iv) - (b)

18. For every action, there is an equal and opposite reaction. It is \_\_\_\_\_. [1]

- a) None of these      b) Newton's second law  
c) Newton's third law      d) Newton's first law

### Section B

Attempt any 5 questions

19. What is rickets? [2]
20. What is aggression? [2]
21. What kind of sports injury can be termed as Abrasion? [2]
22. What do you mean by diabetes? Name the asana which are helpful for preventing diabetes. [2]
23. How do you calculate your BMR weight? [2]
24. What do you mean by trajectory? [2]

### Section C



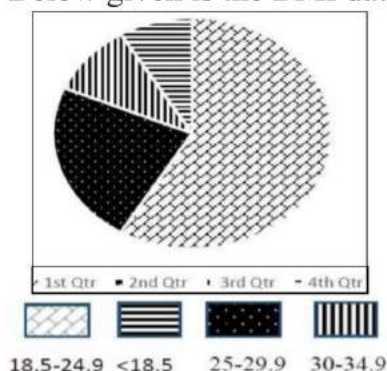
### Attempt any 5 questions

25. What do you mean by assertive behavior? [3]
26. What are the benefits of physical activities for children with special needs? Explain. [3]
27. Explain the staircase method of league tournament and draw the fixture of 12 teams in staircase methods. [3]
28. Explain in detail the steps, benefits and precautions during Sukhasana. [3]
29. Define flexibility and explain the methods of flexibility development. [3]
30. Explain the physiological factors determining speed. [3]

### Section D

31. **Read the text carefully and answer the questions:** [4]

Below given is the BMI data of a school's health check-up.



- (i) In which category does the major student population fall?
- (ii) As per the pie chart given above the school has to develop an activity-based program to decrease the number of \_\_\_\_\_ class.
- (iii) Which category is related to underweight?
- (iv) Minerals are placed under \_\_\_\_\_ nutrient category on the basis of required quantity.

OR

\_\_\_\_\_ Vitamin keeps eyes and skin healthy.

32. **Read the text carefully and answer the questions:** [4]

Below given is the Tournament fixture procedure of a CBSE Volley ball National competition.



- (i) The formula for calculating number of matches in Round Robin tournament are where N is number of teams is \_\_\_\_\_.
- (ii) In League tournaments, the winner is decided by which method?
- (iii) The total number of matches in a knockout tournament of 34 teams is \_\_\_\_\_.
- (iv) What is the other name of the Round Robin Tournament?

**OR**

Total number of byes in the fixture will be \_\_\_\_\_.

33. **Read the text carefully and answer the questions:**

**[4]**

Mr. and Mrs. Gupta are parents of Tushar. They have noticed that Tushar is physically weak. They decided that they will visit a specialist to conduct a fitness test for him.



- (i) Chair sit & reach test is done to check \_\_\_\_\_.
- (ii) What is the rate of the normal heartbeat of an adult?
- (iii) In order to know Rahul's abdominal strength which test need to be performed?
- (iv) Muscular strength starts receding during the age/ages of \_\_\_\_\_.

### Section E

#### Attempt any 3 questions

- 34. Recall the adaptive effects that take place in our body after engaging in exercise for a longer period. **[5]**
- 35. Discuss the various strategies to make physical activities accessible for children with special needs in detail. **[5]**
- 36. Elucidate Newton's laws of motion and their application in the field of sports. **[5]**
- 37. Describe the causes of Scoliosis. What are preventive measures required to avoid this? **[5]**



# SOLUTION

## Section A

1. (b) Soul

**Explanation:** Psyche means soul.

2. (c) Tadasana

**Explanation:** Tadasana

3. (d)



**Explanation:**



4. (b) Fartlek method

**Explanation:** Fartlek means "Speed play".

5. (b) Both A and R are true but R is not the correct explanation of A.

**Explanation:** Both A and R are true but R is not the correct explanation of A.

6. (b) Both A and R are true but R is not the correct explanation of A.

**Explanation:** Both A and R are true but R is not the correct explanation of A.

7. (a) Increase in heart rate

**Explanation:** In the long term, exercises reduce the heart rate.

8. (b) Co-ordination

**Explanation:** Co-ordination

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

**Explanation:** It is done just because of that stronger teams do not meet each other in first round of any knockout tournament.

10. (b) Sit & Reach Box

**Explanation:** Sit & Reach Box

11. (a) 21

**Explanation:** 21

12. (c) hunger

**Explanation:** Hunger is a biological need of a person. It exists in all humans.

13. (a) Wind relieving pose

**Explanation:** Pawanmuktasana is known as wind-relieving pose because it helps in relieving gas from stomach and intestines and cures constipation.

14. (a)  $\frac{N+1}{2}$

**Explanation:** The formula for calculating the number of teams in upper half when the number of teams is odd =  $\frac{N+1}{2}$

15. (b) (i) - (d), (ii) - (c), (iii) - (b), (iv) - (a)

**Explanation:** (i) - (d), (ii) - (c), (iii) - (b), (iv) - (a)

16. (a) aggression

**Explanation:** Aggression means destructive behaviour that causes mental or physical harm to a person.

17. (a) (i) - (b), (ii) - (c), (iii) - (d), (iv) - (a)

**Explanation:** (i) - (b), (ii) - (c), (iii) - (d), (iv) - (a)

18. (c) Newton's third law

**Explanation:** Newton's third law of motion states the same.

### Section B

19. Rickets is a softening of bones in children due to deficiency of vitamin D, phosphorus or calcium, potentially leading to fractures and deformity. Rickets is among the most frequent childhood diseases in many developing countries. The predominant cause is a vitamin D deficiency, but lack of adequate calcium in the diet may also lead to rickets.

20. Aggression is a behavior with a goal harming or injuring another being motivated to avoid such treatment

21. Abrasion is a key injury generally occurs due to friction with certain equipments or a fall over the area where bone is very close to skin. It may be caused by a fall on hard surface. As someone falls or slides on the ground, friction causes layers of the skin to rub off.

22. Diabetes is such a disorder that it causes sugar to build up in our blood stream instead of being used by the cells in the body. The asana which are beneficial for preventing diabetes are bhujangasana, paschimottanasana, pawanmuktasana, ardha matsyendrasana.

23. The formula is  $BMI = \frac{kg}{m^2}$  where kg is a person's weight in kilograms and  $m^2$  is their height in metres squared. A BMI of 25.0 or more is overweight, while the healthy range is 18.5 to 24.9.

24. The path followed by a projectile is called trajectory.

### Section C

25. Assertive behavior: Assertive behavior is different type of aggression/aggressive behavior. This is defined as behavior that involves the use of legitimate physical or verbal force to achieve one's purpose. In Assertive behavior, the intention is to establish dominance rather than to harm the opponent.

26. There are a number of advantages of physical activities for children with special needs. These are as follows

- i. Improves Fitness It strengthens the heart muscles thereby improving cardiovascular efficiency, lung efficiency and exercise endurance. This helps in controlling repetitive behaviours among disabled children.
- ii. Develops Social Behaviour Besides improving fitness, physical activity develops social relationships with other children, teammates and teachers. This brings positive changes in the social behaviour of these children.
- iii. Makes Improvement in Cognitive Abilities Physical activity enhances the metabolism of brain in children. It leads to cognitive improvement in children with special needs allowing them to acquire new skills, learn new things and focus on specific goals.

27. Stair case method :- In this method fixture is made like a stairs and no byes is given to any team. In this method it doesn't matter that teams are in even number or





$$= 12(12-1)/2 = 66$$

involves both stretching (static + dynamic) techniques and contraction of the muscle groups being targeted. For gaining flexibility in the shortest possible time, the PNF technique is the most appropriate method for developing flexibility.

**30. Physiological factors for determining speed:**

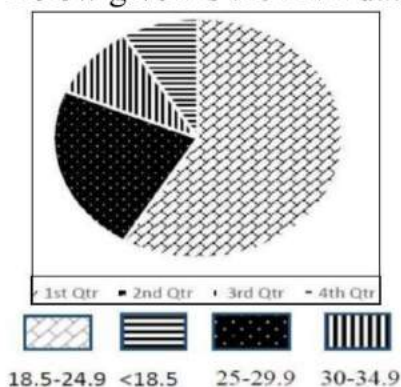
The following are the factors for determining speed:

1. **Reaction Speed** It is the ability to respond to a given stimulus as quickly as possible. In sports, reaction ability is not only significant to react quickly to a signal, but it should also be accurate according to situation.
2. **Movement Speed** It is the ability to do a single movement in the minimum time. Movement speed is of high relevance in sports like jumping, throwing, kicking, boxing etc.
3. **Acceleration Speed** It is the ability to increase speed from minimum to maximum. This form of speed, to a great extent, depends upon explosive strength, frequency of movement and technique. This ability is important in swimming, hockey, football, gymnastics etc.
4. **Locomotor Ability** It can be defined as the ability to maintain maximum speed of locomotion over a period of time as far as possible. This ability is very important in races, speed skating, swimming, hockey, football etc.
5. **Muscle composition:** The muscles which consist of more percentage of fast twitch fibers contract with more speed and produce a greater speed. Different muscles of the body have different percentage of fast twitch fibers.
6. **Explosive strength:** it depends on the shape, size and coordination of muscles. For very quick and explosive movement, explosive strength is required. The related proportion of fast twitch fibers and slow twitch fibers determines the maximum possible speed with which the muscle can contract.
7. **Flexibility:** It also determines the speed. Good flexibility allows maximum range of movements and also enables complete utilization of explosive strength.
8. **Biochemical reserves and metabolic power:** muscles require more amount of energy and high rate of consumption for maximum speed performance. For this purpose the stores of ATP & CP in the muscles should be enough. If the store is less, the working process of the muscles slows down after short time.

**Section D**

**31. Read the text carefully and answer the questions:**

Below given is the BMI data of a school's health check-up.



- (i) The major student population of the school falls into the category of normal weight i.e. between 18.5 to 24.9. This classification is done according to BMI



(Body Mass Index) which is calculated by dividing the body weight by height squared.

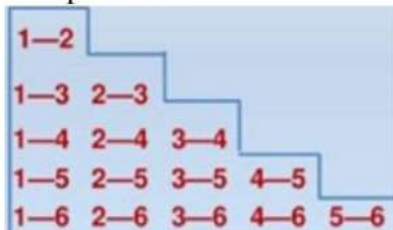
- (ii) The school has to develop an activity-based program to reduce the number of students falling in the category of obesity class I. If the BMI is between 30.0-34.9 then it is obesity class I.
- (iii) If the BMI comes to less than 18.5 then it is classified as underweight.
- (iv) micro

OR

Vitamin A is beneficial for the eyes and skin.

**32. Read the text carefully and answer the questions:**

Below given is the Tournament fixture procedure of a CBSE Volley ball National competition.



- (i)  $\frac{N(N-1)}{2}$

The formula for calculating the number of matches in Round Robin tournament is  $\frac{N(N-1)}{2}$ . N is the number of teams participating in the tournament.

- (ii) In a league tournament, the winner is decided by British method. It gives a formula for deciding the winner. The points secured by a team is divided by maximum point which can be secured and whole multiplied by 100.

- (iii) 3333

- (iv) League tournament is also known as Round Robin Tournament

OR

Total number of Byes in the fixture will be 14.

**33. Read the text carefully and answer the questions:**

Mr. and Mrs. Gupta are parents of Tushar. They have noticed that Tushar is physically weak. They decided that they will visit a specialist to conduct a fitness test for him.



- (i) Flexibility,

Chair sit and reach test is done to check flexibility.

- (ii) 72 is the rate of the normal heart beat of an adult.

- (iii) To know the abdominal strength partial curl-up test must be performed.



(iv) 35-40 years

Muscular strength starts receding during the ages of 35-40 years.

### Section E

34. The adaptive effects that take place in our cardiovascular system after engaging in exercise for a longer period are:

1. Increase in heart size We cannot do the exercise on our heart directly, but when we perform any exercise regularly, our heart size increases. Exercising develops the muscles of the heart.
  2. Increase in heart rate Generally an adult has a heart rate of 72 beats per minute while resting, but when he exercises, his heart rate increases as per the intensity and duration of the exercise.
  3. Increase in stroke volume Stroke volume is the quantity of blood which the heart pumps out in a single stroke. Due to the heart's size increases, the stroke volume increases.
  4. The decrease in cholesterol level Regular exercise reduces the cholesterol level in our blood, which has a direct link with the blood pressure.
  5. Increase in number and efficiency of capillaries Regular exercise increases the number of capillaries and their efficiency.
  6. Reduced risk of heart diseases Regular exercise gradually reduces stress-related hormones from circulating in the blood. This results in an increase of blood flow in the blood vessels, which in turn, lowers the risk of building up of plaque which affects the heart. Hence, regular exercise. reduces the risk of heart diseases.
  7. Slow down brain aging the regular physical activity reduces the risk of mild cognitive impairment.
  8. Improve muscular strength Ageing process does not hinder the individual's ability to enhance muscle strength.
  9. Enhance the capacity of lungs Regular physical activity enhances the capacity of lungs
  10. Improve flexibility Regular physical activity improves the elasticity of tendons, ligaments and joint capsules.
35. The following strategies should be taken into consideration to make physical activities accessible for the children with special needs:
- a. Medical check-up: if we want to make physical activities accessible for the children with special needs, we need to understand the type of disabilities of children and for this purpose complete medical check-up of the children is required. Because without complete medical check-up, the teachers of physical education cannot come to know about the type of disability child is facing.
  - b. Activities based on interests: Physical activities must be based on interest, aptitudes, abilities, previous experience and limitations of children with special needs. The teachers of physical education should have deep knowledge of limitations, interest and aptitudes of children.
  - c. Different instructional strategies: A variety of different instructional strategies such as verbal, visual and peer teaching should be used for performing various types of physical activities. By this children get opportunity to learn by their own and become independent.





- d. Modification of rules: Rules can be modified according to the needs of the children. They can be provided extra time or attempt to perform a physical activity.
- e. Specific environment: For special needs children the area should be limited. In case of children who have autism, they must be provided specific area because they may need some time to relax.

36. The three laws of motion formulated by Newton are described below :

1. Law of inertia: According to this law a body at rest will remain at rest and a body in motion will remain in motion at the same speed and in the same direction unless acted upon by an external force. There are great examples of this law in sports such as starting in rowing, starting in sprinting, starting in throwing the hammer. Basically if an object is in motion, it remains in motion unless something or some external force stops it. The external force may be gravitational force, the surface of playing field or a defensive player etc.
2. Law of acceleration: According to this law, A change in motion is directly proportional to the force producing it and inversely proportional to its mass. If two unequal forces are applied to objects of equal mass, the object that has greater force applied will move faster. Conversely, if two equal forces are applied to objects of different masses, the lighter mass will travel at a faster speed.
3. Law of reaction: According to this law ‘ For every action there is an equal and opposite reaction.’ There are so many examples in sports where this law is applied. e.g., In swimming a swimmer pushes the water backwards (action) and the water pushes the swimmer forward (reaction) with the same force.

37. The causes of scoliosis for various types of this deformity are

- i. Congenital scoliosis, which is caused by a bone abnormality present at birth.
- ii. Neuromuscular scoliosis, which results due to abnormal muscles or nerves.
- iii. This is seen in people with cerebral palsy or having partial paralysis.
- iv. Degenerative scoliosis, which may result from traumatic (i.e. Injury & illness) bone collapse, previous major back surgery, or osteoporosis.
- v. Idiopathic scoliosis, which is the most common type. It has no specific identifiable cause.

Preventive measures to avoid Scoliosis are

- i. Avoid activities that require over-exertion on only one side of the body Exercise the back muscles.
- ii. Having strong and stable back muscles prevents this deformity the back muscles support the spinal column and hold it in its proper shape.
- iii. Improve your posture. Focus on sitting up straight
- iv. Acquire proper vitamins and minerals. Calcium contributes to keeping bones healthy, so eating.

