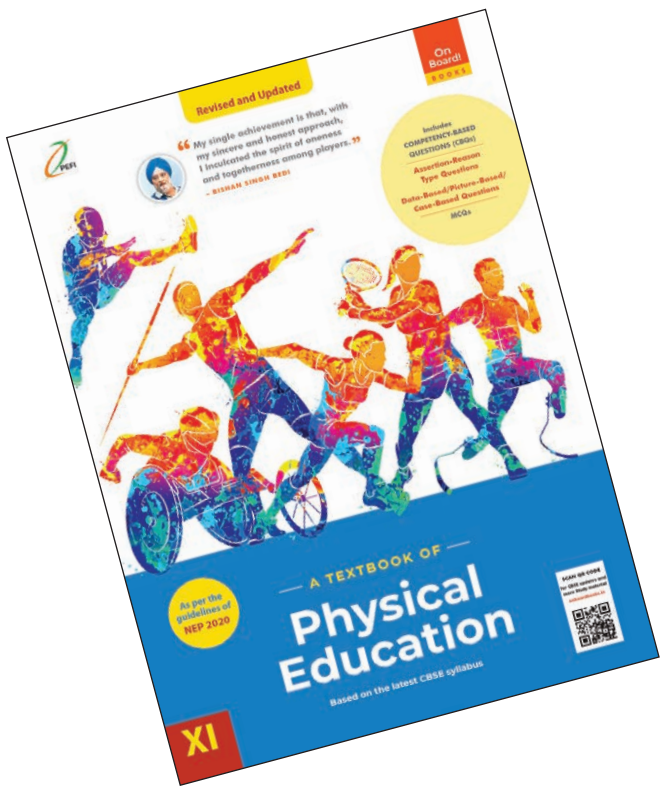
TEACHER'S HANDBOOK

A TEXTBOOK OF
PHYSICAL EDUCATION
Book 11



On Board! BOOKS

An imprint of Ratna Sagar P. Ltd.

CHAPTER 1

CHANGING TRENDS AND CAREER IN PHYSICAL EDUCATION

P. 22–25

A. Objective Type/Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. What is the primary goal of physical education?

(a) Increase productivity

(b) Decrease productivity

(c) Improve academic scores

(d) Improve professional relationships

Ans. (a) Increase productivity

2. What kind of a system do sports and games rely on and why?

(a) Two systems for coordination

(b) Two systems for balance

(c) Two systems for concentration

(d) Two systems for endurance

Ans. (a) Two systems for coordination

3. In what ways does effective coaching help students?

(a) Development of skills and performance improvement

(b) Development of personality and performance improvement

(c) Development of mental peace and security

(d) Development of physique and agility improvement

Ans. (a) Development of skills and performance improvement

4. Which of the following career options is associated with physical education?

(a) Sports Marketing

(b) Sports Administration

(c) Professional Sportsperson

(d) All of these

Ans. (d) All of these

5. Which of the following is a traditional game of India?

(a) Hockey (b) Badminton

(c) Kabaddi (d) Table tennis

Ans. (c) Kabaddi

6. FIFA World Cup is associated with which sports?

(a) Hockey (b) Football

(c) Cricket (d) Archery

Ans. (b) Football

7. ISSF World Cup is an international championship for which sport?

(a) Skating (b) Swimming

(c) Shooting (d) Skiing

Ans. (c) Shooting

8. Which of the following games is not a part of the Olympic Games?

(a) Football (b) Judo

(c) Gymnastics (d) Cricket

Ans. (d) Cricket

9. Khelo-India strives to promote .....

(a) 'Sports for one' as well as 'Sports for all'

(b) 'Sports for all' as well as 'Sports for excellence'

(c) 'Sports for one' as well as 'Sports for many'

(d) 'Sports for development' as well as 'Sports for excellence'

Ans. (b) 'Sports for all' as well as 'Sports for excellence'

10. How much annual scholarship shall each selected athlete receive under the Khelo-India Scheme for eight consecutive years?

(a) Two lakhs (b) Five lakhs

(c) Three lakhs (d) Eight lakhs

Ans. (b) Five lakhs

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Acronym	List II – Full-form
(a) IHF	(1) International Amateur Athletic Federation
(b) SAI	(2) International Shooting Sport Federation
(c) ISSF	(3) International Handball Federation
(d) IAAF	(4) Sports Authority of India

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	3	2	1	4
(b)	4	4	2	3
(c)	2	1	3	2
(d)	1	3	4	1

Ans. (i) (a) – 3; (b) – 4; (c) – 2; (d) – 1

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Sports and games are an integral part of human culture and social interactions.

R: A number of sports events and games are played around the world.

In the context of the two statements given above, 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 the correct explanation of (A).

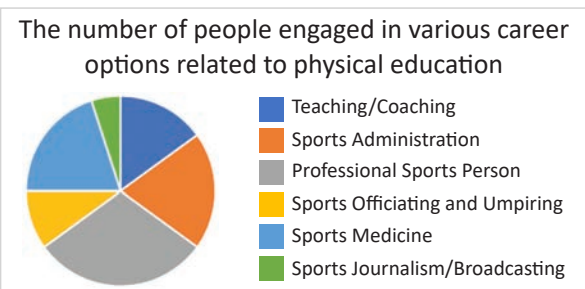
(c) (A) is true, but (R) is false.

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

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

IV. Data-Based Questions: CBQ

The following pie-chart depicts the number of people engaged in various career options related to physical education:



On the basis of the pie-chart given above, answer the following questions:

1. Which is the most popular profession?

(a) Being a coach

(b) Being an umpire

(c) Being a professional player

(d) Being a journalist

2. Which profession shows minimum engagement?

(a) Journalism (b) Coaching

(c) Administration (d) Medicine

3. A school, college or academy can be a possible place of work for .....

(a) Sports Teachers/Coaches

(b) Sports Administrators

(c) Sports Doctors/Physicians

(d) All of these

Ans. 1. (c) being a professional player;
2. (a) Journalism; **3.** (d) All of these

V. Picture-Based Questions: CBQ

Identify the professions in sports:

1.

.....

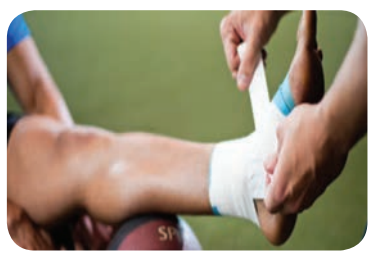
2.

.....

3.

.....

4.



.....

Ans. 1. Sports Coaching; **2.** Umpiring; **3.** Sports Photography; **4.** Sports Medicine

VI. Case-Based Questions: CBQ

A school did not have sports periods as part of its curriculum.

On the basis of the case given, answer the following questions:

1. Which of the following skills will most likely be missing in the students of such a school?

(a) Team work and cooperation

(b) Public speaking skills

(c) Listening skills

(d) None of these

2. If the school creates a sports department in future, what sort of employees will it require?

(a) Sports doctor (b) Coach

(c) Sports author (d) Both (a) and (b)

3. Which of the following is not an objective of physical education?

(a) Mental development

(b) Economic development

(c) Social development

(d) Neuromuscular development

Ans. 1. (a) Teamwork and cooperation; **2.** (d) Both (a) and (b); **3.** (b) Economic development

B. Short Answer Type-I Questions (3 marks)

1. Why is physical education important for youth? Give any three reasons.

Ans. Physical education is important for the youth for the following three reasons:

(i) Physical activities like jogging, walking, engaging in various sports help in maintaining correct posture and strengthening of the internal organs and muscles.

(ii) Physical education classes help the youths fruitfully employ their leisure time.

(iii) Many sporting activities function on certain social values like team spirit, fair play, cooperation and respect. These make the youths positive and mature.

2. How is physical education different from academic classroom-based education?

Ans. Physical education activities serve as a good outlet for students' surplus energy, reduce their anxiety and may bring them closer to their peers. Moreover, students get an opportunity to leave the classrooms and textbooks for a while and refresh their body and mind.

3. What are the basic educational qualifications required for pursuing a serious career in physical education in India?

Ans. After passing class 12th with any stream, a student can pursue various certificate and diploma courses. Apart from these, other courses like degree courses, postgraduate courses and advanced courses are also available.

4. What are the duties involved in teaching physical education?

Ans. Teaching physical education is a science in its own right, entailing a number of duties such as:

- training students in gymnastics, callisthenics and other physical activities
- coaching the students in specific sports
- organising sporting events
- maintaining sports equipment, gymnasiums, fields, pools, etc.

5. What is the Khelo-India Programme?

Ans. The Khelo-India is a national programme for the development of sports. It is an initiative of the Government of India to strengthen the sports ecosystem by encouraging mass participation and promotion of excellence. This programme has been introduced to revive the sports culture in India at the grass-root level by building a strong framework for all sports in India. It will provide a national level platform to the grass-root level talents.

6. Name the schemes that have been merged and revamped as Khelo-India Scheme.

Ans. Being approved by the Union Cabinet, Khelo-India Programme has been revamped after the merger of Rajiv Gandhi Khel Abhiyan (RGKA), Urban Sports Infrastructure Scheme (USIS) and National Sports Talent Search Scheme (NSTSS).

C. Short Answer Type-II Questions (5 marks)

1. What are the various aspects of development achieved through physical education? Explain in detail.

Ans. The various aspects of development achieved through physical education are given below:

(i) **Organic aspect of development:** The first step of physical education is to establish physical fitness through regular exercise to strengthen the internal organs and muscles.

(ii) **Neuromuscular aspect of development:** Neuromuscular aspect of physical education enhances their relationship, in addition to

gradually decreasing fatigue and providing mental satisfaction.

(iii) **Mental aspect of development:** Sports and games require mental alertness and concentration. The players learn how to face tough challenges and find within themselves a sense of self-reliance.

(iv) **Emotional aspect of development:** Physical education activities serve as a good outlet for teenagers' surplus energy, reduce their anxiety and may bring them closer to their peers.

(v) **Social aspect of development:** One of the most positive outcomes of physical education is the growth of social skills, although this may not be immediately visible. It is human nature to seek the society of fellow human beings, no matter how well we can act alone.

2. Write about the changing trends of physical education in India after Independence.

Ans. After Independence, physical education as a subject began to assume more importance as a formal part of academics and was inculcated into the general curriculum. This subject was born out of this particular necessity. Its primary goal is to increase the student's productivity by keeping her/him physically fit by including physical activity programmes as part of the curriculum. It has undergone several changes in the past. These days, physical education as a subject is getting popularity. There are many job opportunities in this field. Recently the Government of India has launched Khelo-India Programme to strengthen the sports ecosystem by encouraging mass participation and promotion of excellence. This programme has been introduced to revive the sports culture in India at the grass-root level by building a strong framework for all sports in India. It will provide a national level platform to the grass-root level talents. Now, CBSE has made health and physical education mandatory for classes I to XII. So, we find many changes in the area of physical education.

3. Discuss in detail eight soft skills needed for different careers.

Ans. Eight soft skills needed for different careers are given below:

(i) **Communication skills:** A person who communicates well can speak his mind and explain his thoughts and opinions in such a way that listeners can clearly understand the points.

(ii) **Team spirit:** Being a team player is always advantageous, both for the team as a whole and for the individual too.

(iii) **Mentoring and coaching:** When you are new to a job, it is likely that you will be assigned to an experienced person who will teach you what to do and how to do it.

(iv) **Dedication:** If you are not dedicated to your job, it will show in your performance. You will find yourself unable to perform your duties as expected.

(v) **Taking initiative:** Even if a person is innovative, it is only half the battle won if they cannot take initiative. You will stand out only when you do more than is required of you and make positive and visible changes.

(vi) **Self-confidence:** This is one personality trait that will serve you well throughout your life and help you attain any goal you strive for.

(vii) **Time management abilities:** Punctuality at work is always respected, but it is not enough to turn up early at work or on time for a meeting; time management concerns delivery before deadline too.

(viii) **Dependability:** A dependable person is one on whom others have faith; their colleagues, seniors and juniors know they can be relied on to do their work without fail on time and that they will do their best to face whatever challenge comes up.

4. Write any five objectives of Khelo-India Programme.

Ans. The objectives of Khelo-India Programme are as follows:

(i) Play Field Development

(ii) Community Coaching Development

(iii) State Level Khelo-India Centres

(iv) Annual Sports Competition

(v) Talent Search and Development

(vi) Utilisation and Creation/Upgradation of Sports Infrastructure

(vii) Support to National/Regional/State Sports Academics

(viii) Physical Fitness of School Children (any five)

5. What are the features of Khelo-India programme? Write about any five.

Ans. Features of Khelo-India programme are given below.

(i) This programme/scheme will be implemented by the Central Government machinery and 100 per cent of the funds will be provided by the central government.

(ii) A Pan Indian Sports Scholarship scheme, which would cover 1,000 most talented and deserving young athletes every year across selected sports disciplines. Initially, there are 16 disciplines. They are: Archery, Athletics, Badminton, Basketball, Boxing, Football, Gymnastics, Hockey, Judo, Kabaddi, Kho-Kho, Shooting, Swimming, Volleyball, Weightlifting and Wrestling.

(iii) Each selected athlete under the scheme shall receive an annual scholarship worth five lakh rupees for eight consecutive years.

(iv) A long-term athlete development pathway would be made available to gifted and talented youngsters to excel in competitive sports and will create a pool of highly competitive athletes who can compete to win at the global platform.

(v) The programme aims to promote 20 universities across the country as hubs of sporting excellence, which would enable talented sportspersons to pursue both studies as well as sports.

(vi) The programme also aims at creating an active population with healthy lifestyle.

(vii) The programme would cover about 20 crore children in the age group of 10–18 under a massive national physical fitness drive, which will not only measure the physical fitness of all children in the age group, but also support their fitness related activities. (any five)

6. Make a list of five sports and their competitions organised at national and international levels.

Ans. A list of five sports and their competitions organised at national and international levels is given below in tabular form.

Name of Sports	National Level Competitions	International Level Competitions
Athletics	National Games, National Inter-State Senior Athletics Championships, National Open Athletics Championships, Federation Cup.	Olympic Games, Asian Games, Commonwealth Games, IAAF World Championships in Athletics, IAAF Continental Cup, Athletics World Cup.
Badminton	National Games, Narang Cup (National Junior Team Men), Shafi Qureshi Cup (National Junior Team Women), Mayor's Cup.	Syed Modi Championship, Wills World Cup, Thomas Cup, Uber Cup, Asian Championship, World Championship, IBF Meet, Olympic Games, Sudirman Cup.
Cricket	Ranji Trophy, Duleep Trophy, Irani Trophy, Deodhar Trophy, Vijay Hazare Trophy, Indian Premier League, etc.	ICC World Cup, Twenty20 World Cup, Ashes Cup, Asia Cup, Champions Trophy, Net West Trophy, etc.
Football	Santosh Trophy, Durand Cup, I-League, IFA Shield, Indian Super Cup.	FIFA World Cup, FIFA Women's World Cup, FIFA Confederations Cup, Olympic Games, AFC Asian Cup, Asian Games.
Hockey	Rangaswami Cup (women), Indira Gandhi Gold Cup, Federation Cup (women), Beighton Cup, Aga Khan Hockey Tournament, Lady Ratan Tata Cup (women).	Olympic Games, World Cup, Champions Trophy, Champions Challenge, Commonwealth Games, Sultan Azlan Shah Hockey Tournament, Alps Cup, Hockey Asia Cup.

CHAPTER 2

OLYMPIC VALUE EDUCATION

P. 38–41

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. Where can the ruins of the birthplace of Olympic games be found?

(a) Florence, Italy (b) Paris, France

(c) Olympia, Greece (d) Berlin, Germany

Ans. (c) Olympia, Greece

2. What was the other name of the Olympic Truce?

(a) Ekecheiria (b) Elecheiria

(c) Elkcheiria (d) Emcheiria

Ans. (a) Ekecheiria

3. When were the first modern Olympics held?

(a) 1982 (b) 1882

(c) 1896 (d) 1892

Ans. (c) 1896

4. Which of the following values are a part of Olympic values?

(a) Friendship and Solidarity

(b) Peace and Equality

(c) Fair Play

(d) All of these

Ans. (d) All of these

5. When did women participate in the games for the first time?

(a) 1900 (b) 1880

(c) 1904 (d) 1888

Ans. (a) 1900

6. Which of these sports forms an event at the Winter Olympics?

(a) Judo (b) Luge

(c) Handball (d) Water Polo

Ans. (b) Luge

7. In which country were the first Summer Olympics held?

(a) France (b) USA

(c) Greece (d) Great Britain

Ans. (c) Greece

8. Which of these sporting events is held in parallel with the Summer Olympics?

(a) Winter Olympics (b) Youth Olympics

(c) Paralympics (d) Special Olympics

Ans. (c) Paralympics

9. Which one of the following was the founder of Special Olympics games?

(a) John F Kennedy

(b) Eunice Kennedy Shriver

(c) Baron de Coubertin

(b) Sir Dorabji Tata

Ans. (b) Eunice Kennedy Shriver

10. Which of the following are the positions in the IOA board for which the elections are held?

(a) President and Senior Vice President

(b) Secretary General and Treasurer

(c) One representative elected out of the Athletes Commission

(d) All of the above

Ans. (d) All of the above

11. In which year was the Indian Olympics Association created?

(a) 1927 (b) 1947

(c) 1952 (d) 1964

Ans. (a) 1927

12. What is the name of the anti-doping foundation initiated by the International Olympic Committee to promote, coordinate and monitor the fight against drugs in sports?

(a) International Drug Monitoring Agency (IDMA)

(b) World Anti-Drugs Council (WADC)

(c) International Doping Committee (IDC)

(d) World Anti-Doping Agency (WADA)

Ans. (d) World Anti-Doping Agency (WADA)

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Olympic Games Venue	List II – Year
(a) Antwerp	(1) 2000
(b) Sydney	(2) 2012
(c) London	(3) 1896
(d) Athens	(4) 1920

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	1	4
(b)	1	4	2	3
(c)	3	1	3	2
(d)	2	3	4	1

Ans. (i): (a) – 4; (b) – 1; (c) – 3; (d) – 2

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Olympic Games encourage the adoption of peace.

R: All individual differences are forgotten when participants arrive at the Games, and the event commences with mutual respect and harmony.

In the context of the two statements given above, 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 the correct explanation of (A).

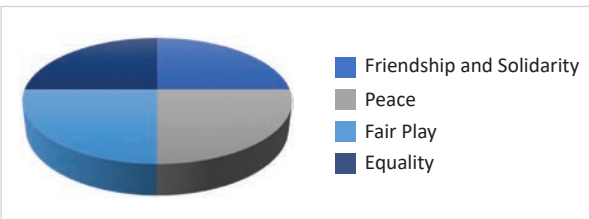
(c) (A) is true, but (R) is false.

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

Given below is the depiction of equal importance of the values of Olympics:



On the basis of the pie-chart given above, answer the following questions:

1. With the death of the 11 Israeli participants due to racism in 1972, which of the following values was violated?

(a) Friendship and Solidarity (b) Peace

(c) Equality (d) Fair Play

2. Which of the following values is represented by a dove above the Olympic symbol?

(a) Friendship and Solidarity (b) Peace

(c) Equality (d) Fair Play

3. Penalising a player for adopting any unfair means to win the games is an example of .....

(a) Friendship and Solidarity (b) Peace

(c) Equality (d) Fair Play

Ans. **1.** (c) Equality; **2.** (a) Friendship and Solidarity; **3.** (d) Fair Play

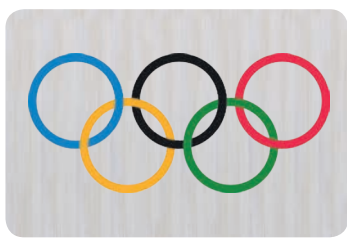
V. Picture-Based Questions: CBQ

Identify the following pictures related to Olympic games and write their description:

1.

.....

2.



.....

3.

.....

4.

.....

Ans. **1.** Olympic Wreath – Award; **2.** Olympic Rings – Symbol; **3.** Olympic Torch – Ceremony; **4.** Olympic Value – Truce Symbol – Friendship and Solidarity

VI. Case-Based Questions: CBQ

The International Olympic Committee consists of President, Vice Presidents and the members of the Executive Board.

On the basis of the case given, answer the following questions:

1. For what term period will the President be elected?

(a) 8 years (b) 12 years

(c) 20 years (d) None of these

2. How many VPs are elected for a term of four years?

(a) 4 (b) 2

(c) 5 (d) Both (a) and (b)

3. When is the President eligible for a re-election?

(a) Four years after the expiry of his/her term

(b) Eight years after the expiry of his/her term

(c) Right after the expiry of his/her term

(d) Never again

Ans. **1.** (a) 8 years; **2.** (a) 4; **3.** (c) Right after the expiry of his/her term

B. Short Answer Type-I Questions 3 marks

1. Write a brief note on the ancient Olympics.

Ans. The Olympic began in Ancient Greece thousands of years ago. It is difficult to determine when exactly they did begin. We only know about venue and that venue is – Olympic, a valley in Elis on the Peloponnese Peninsula. The first recorded Olympics were held in 776 BCE. The only event was a single footrace won by a cook named Coroebus.

2. Why did the ancient Olympic Games decline?

Ans. The Olympic Games reached their peak by 400 BCE and began to decline. The Olympic Games were abolished in 394 CE by the Roman Empire Theodossius I, who was Christian and did not favour pagan practice.

3. How were the ancient Olympics a period of peace?

Ans. Olympic Games played a vital role for peace by an agent of friendship and solidarity and encouraged the adoption of peace. The Olympic Games encourage to forget all the individual differences. The event commences with mutual respect and harmony.

4. What are the similarities between the ceremonies of the ancient Olympics and the modern Olympics?

Ans. The similarities between the ceremonies of the ancient Olympic and modern Olympics is that:

(i) A torch is lit;

(ii) The flag is hoisted.

5. What are the objectives of the Olympic Games?

Ans. Baron de Coubertin said of the Olympic Games: "Why did I restore the Olympic Games? To enable and strengthen sports, to ensure their independence and duration and thus to enable them better to fulfill the educational role incumbent upon them in the modern world."

The Objectives of the Olympic Games are thus:

- The development of team spirit, sense of loyalty, and honour not only among sportsperson but also among humanity beyond the realm of sports.
- To promote competitive sports and preserve them for future generations.
- To bring international communities closer and call for peace and harmony by getting rid of divisions of caste, creed, colour, race and religion.
- To highlight the importance of physical education and the positive impact it has on the youth's character and personality development.

6. What do you understand by *Citius*, *Altius* and *Fortius – Communiter*?

Ans. We understand by these Latin words *Citius*, *Altius* and *Fortius – Communiter* to celebrate the spiriting friendship and cooperation between the people of all the five continents together. The Olympic motto of three Latin words – *Citius*, *Altius*, *Fortius – Communiter* for Faster, Higher, Stronger – Together; is carved under the emblem

7. What do you mean by Olympic values?

Ans. The Olympic Games are about spreading the spirit of friendship and solidarity among the people from various countries of the world.

8. Write about the equality in Olympic values.

Ans. No preference is shown on the basis of race, colour, caste, creed or religion. The winners may be anyone or may belong to any country or community; it is their skills and hard work that secure them their medals. But it is unfortunate that Olympic games have not been free of controversies and tragedies. We can sight an example of Adolf Hitler who refused to honour Jesse Owens the African athletic champion because of his race and colour.

9. What is the significance of the design on the Olympic Flag?

Ans. The Olympic Flag was created in 1913 at the suggestion of the Baron de Coubertin. Olympic Flag is made of white silk and contains five interlocking rings / circles in five colours representing five continents of the world viz. America, Europe, Australia, Asia, and Africa. The five rings have different colours: Yellow, Red, Blue, Green and Black. The Interlocking of rings/circles symbolizes cooperation and friendship between the people of all five continents.

10. Write briefly on Baron de Coubertin and how he helped bring the Olympics back to life.

Ans. Baron de Coubertin, a Parisian, is considered the pioneer for injecting the life into the Olympics. He found the games as an agent to work for international peace. He called a meeting of various countries in 1893. The countries included the Greece, Italy and Spain. In the meeting he talked about his endeavour. Then he called the second meeting on 16 June 1894 in Paris. In this meeting 75 representatives of 13 countries participated and resolved that;

"Sports competition should be held every four years on the line of the Greek Olympic Games and every nation should be invited to participate." The first modern Olympic was organized in 1896. Athens hosted it and nine countries competed.

11. Write briefly about the Special Olympics.

Ans. The Special Olympics was begun in 1968 by Eunice Kennedy Shriver, the sister of former US president John F Kennedy. Its mission is to provide year-round sports training and organise athletic competition in various Olympic type sports for children and adults with intellectual disabilities. The aim of Special Olympics is to provide them continuing opportunities to develop physical fitness, courage, experience joy and participate in a sharing of skills and friendships with their families, other special athletes and community. It provides training, and compensation to 5 million athletes and United Sports partners in around 172 countries. Special Olympics competitions are organised all around the world.

12. What do you understand by Paralympics?

Ans. The word 'Paralympics' is derived from the two Greek words 'para' means 'beside or alongside' and the other word is 'Olympics'. So, Paralympics are the parallel Games to the Olympics. The journey of the Paralympic Games started in 1960 side-by-side of the Olympics.

13. Write in brief about International Olympic Committee (IOC).

Ans. The International Olympic Committee is an international, non-profit, non-governmental organization and the governing authority of the modern Olympic games. It is based in Laussane, Switzerland.

The IOC was founded by Pierre de Coubertin on 23 June,1894 with Demetrio Vikelas as its first President. Its membership consists of 105 active members and 32 honourary members. It organizes the summer and winter Olympic games every four years.

The structure of the IOC may be represented as under:

President: Elected by members for a term of eight years. She/he can be re-elected after the expiry of the term.

The Vice Presidents: Four VPs are elected by the members for a term of four years. They can also be re-elected after the term finishes.

Executive Board: It consists of the President, VPs, and ten other members elected by an IOC session through secret ballot with a simple majority declaring the chosen members. This Board is responsible for the administration of the IOC.

14. Write a note on Indian Olympic Association.

Ans. The Indian Olympic Association also known as Bhartiya Olympic Sangh was established in 1927 by Sir Dorabji Tata and A.G. Noehren as President and General Secretary. The former resigned in 1928 and the post was taken up by Maharaja Bhupinder Singh. It is a non-profit and non-governmental organization. It has its headquarters located at New Delhi. The official year of the IOA lasts from 1 April to 31 March. With the approval of the General Assembly the members consist of National Sports Federation whose sports are included in the programmes of the Olympic Games or the Commonwealth Games or Asian Games. To appoint:

- President
- Senior Vice Presidents
- Eight Vice Presidents
- Secretary General
- Treasurer
- Six Joint Secretaries
- Ten Executive Council members

- One representative elected out of the Athletes Commission, elections are held once every four years.

One male and one female athlete who have participated in the Olympic Games and fulfil the eligibility criteria of the guide lines; State and Union Territories Olympic Association; Service Sports Control Board, and the National Federation of Kho-Kho.

C. Short Answer Type-II Questions 5 marks

1. Discuss the ancient Olympic Games.

Ans. The Olympic games began in Ancient Greece thousands of years ago. When exactly the Olympics began is not known, but the venue is known where the Olympics were held and it is at Olympia, a valley in Elis on the Peloponnese Peninsula. The first recorded Olympics were held in 776 BCE. The only event was a single footrace, won by a cook named Coroebus. With the passage of time other events like: the hoplitodrome, chariot races, pentathlion consisting of five events like: Jumping, Javelin, Sprint, Discuss, Wrestling and Pankration of boxing and wrestling where a player could be declared or lay unconscious in the arena, were eventually added. The Olympic Games were actually just one of four ancient Panhellenic Games held at two or four year intervals, but they were more prestigious than the other three – the Pythian, Nemean and Isthmian Games.

2. Write an essay on the values, ideals, symbols and objectives of the modern Olympics.

Ans. The Olympic symbol was designed by Baron de Coubertin in 1914. It is made of five interlinked rings to celebrate sporting friendship and cooperation between the people of five continents.

The Olympics ideals tell us that "The important thing in the Olympic is not the triumph, but struggle. The essential thing is not to have conquered but to have fought well."

The objectives of the Olympics are to develop team spirit, sense of loyalty and honour not only among sportsperson, but also among humanity beyond the realm of sports. This is not enough but it helps to promote competitive sports and preserve them for future generations and also to bring international communities closer, call for peace and harmony by getting rid of divisions of caste, creed, colour, race and religion. It helps to highlight the importance of physical education and the positive impact it has on the youth's character and personality.

The Olympic Games help in spreading the spirit of friendship and solidarity among the people from various countries of the world. Above all, it gets nations together to participate in these games, leaving aside the differences whether political or any other.

3. Write short notes on

(a) the Olympic ceremony.

(b) Olympic values.

Ans. (a) **The Olympic ceremony:** Olympic ceremony begins with the burning of the torch in Olympic village, Greece. This torch is then brought to the host city. The participants of each country conduct a march past, with the Greek troupe taking the lead and athletes from the host country take up the rear. An assortment of culture and entertainment programme is shown in the stadium, after which the Olympic Flag is hoisted and the flame lit by torch. The leader of the host city then declares the commencement of the Games.

The Olympic Games are closed with an assembly of all participants. They gather at the Stadium as a group.

Three flags are then hoisted. First, the Greek flag to the tune of the Greek national anthem; Second the host country's flag with its national anthem and third, the flag of the country hosting the next games, to the tune of its national anthem.

The president of the IOC expresses words of gratitude to the organizers and the participants and formally closes the games. The Olympic flag is handed over to the mayor of the city, who keeps it safe till the next Games. The flame is finally extinguished.

(b) **Olympic values:** The Olympic Games are about spreading the spirit of friendship and solidarity among the people from various countries of the world. It is not only the players but also nations come together to participate in these games, leaving aside whatever political or any other differences they might have. Its endorsement of peace is reflected in its Olympic Truce Movement and in its logo: a dove drawn above the Olympic Symbol, therefore, IOC does not need to send out spondophoroi.

4. Enumerate the main functions of the IOC.

Ans. The main functions of IOC are:

- To encourage and support the promotions of

ethics in sports as well as education of youth through sports and to dedicate its efforts to ensure that, in sports the spirit of fair play prevails and violence is banned.

- To encourage and support the organization, development and coordination of sports and sports competitions.
- To ensure the regular celebration of the Olympic games.
- To cooperate with competent public or private organizations and authorities in the endeavor to place sports at the service of humanity and thereby to promote peace.
- To take action in order to strengthen the unity and to protect the independence of the Olympic Moment.

5. Write in detail about the objectives of the IOA.

Ans. The main objectives of the IOA are as under:

- Development and promotion of the Olympic movement.
- Promotion and encouragement of the physical, moral and cultural education of the young people of the nation so that their character can be developed.
- Provision of the Olympic Charter, the Olympic movement, the World Anti-Doping Code and to abide by the decisions of the International Olympic Committee.
- To enforce and defend the exclusive right of the IOC and Association to the use of the Olympic properties to the Olympic Charter.
- To certify the eligibility of competitors from India for such international competitions that require such certificates.
- To act as the channel of communication between National Sports Federation and the Government of India for financial or other assistance to the Federation.
- To have full and complete jurisdiction over all matters pertaining to the designation of the city in relation to hosting the Olympic Games in India.
- To resist in the realm of sports all pressure of any kind whether of a political, legal, racial, religious or economic.

6. What are differences between IOC and IOA?

Ans. The differences between IOC and IOA can be enumerated as under:

International Olympic Committee (IOC)

(a) IOC is an international organization.

(b) It is based in Laussane, Switzerland.

(c) It was founded by Pierre de Coubertin.

(d) It was founded on 23 June,1894.

(e) Its first President was Demetrios Vikelas.

(f) It organizes the youth Olympic Games.

(g) It is made up of IFSs and 15 representatives of the NOCs.

(h) It has the President, 4 VPs, and an executive consisting of the President, VPs, and ten other members elected by an IOC session through secret ballot with a simple majority declaring the chosen members.

(i) The board is responsible for the administration of the IOC.

Indian Olympic Association (IOA)

(a) It is a National organization.

(b) It was established in 1927.

(c) It is known as Bhartaya Olympic Sangh also.

(d) Its first president was Sir Dorabji Tata.

(e) Its headquarters are located in New Delhi.

(f) The official year of the IOA is 1 April to 31 March.

(g) It has to take the approval of the General Assembly which is fixing its members from different sports organizations.

(h) It consists of one President, Senior VP, 8 VPs, Secretary General, 6 Joint Secretaries, 10 Executive Council members, one representative elected out of the Athletes.

CHAPTER 3

PHYSICAL FITNESS, WELLNESS AND LIFESTYLE

P. 52–55

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. What is wellness?

(a) It is the state of being healthy and free of diseases.

(b) It is the state of being healthy and happy.

(c) It is the state of being happy and fit.

(d) It is the state of being fit and content.

Ans. (a) It is the state of being healthy and free of diseases.

2. "Lifestyle is a set of attitudes, habits or possessions associated with a particular person or group." What is the source of the given statement?

(a) Business Dictionary

(b) Harper Collins Dictionary

(c) Encyclopaedia of Public Health

(d) American Heritage Dictionary

Ans. (b) Harper Collins Dictionary

3. A sharp and alert mind is a sign of which component of wellness?

(a) Intellectual wellness

(b) Financial wellness

(c) Environmental wellness

(d) Physical wellness

Ans. (a) Intellectual wellness

4. Which of these is not a component of physical fitness?

(a) Strength

(b) Flexibility

(c) Speed

(d) Memory

Ans. (d) Memory

5. What is a key component of social wellness?

(a) Balanced engagement with one's spiritual surroundings

(b) Active engagement with one's spiritual surroundings

(c) Passive engagement with one's social surroundings

(d) Healthy engagement with one's social surroundings

Ans. (d) Healthy engagement with one's social surroundings

6. What are the activities that require strength endurance?

(a) Running

(b) Cycling

(c) Combative sports

(d) All of these

Ans. (d) All of these

7. Which of these types of strength is also known as isometric strength?

(a) Maximum strength

(b) Static strength

(c) Explosive strength

(d) Strength endurance

Ans. (b) Static strength

8. Which of these is not a way to cultivate physical fitness and wellness?

(a) Meeting friends and family members regularly

(b) Spending long hours sitting at the office

(c) Taking a brisk walk every day for 30 minutes

(d) Spending every weekend outside the city at a farm

Ans. (b) Spending long hours sitting at the office

9. Which of these components of physical fitness would a marathon runner need the most?

(a) Explosive strength

(b) Locomotor ability

(c) Reaction ability

(d) Long term endurance

Ans. (d) Long term endurance

10. What does good cardiovascular endurance imply?

(a) Heart, lungs and vascular system are in perfect working condition.

(b) Heart and mind are in perfect working condition.

(c) Respiratory and nervous system are in perfect working condition.

(d) Brain, heart and sensory system are in perfect working condition.

Ans. (a) Heart, lungs and vascular system are in perfect working condition.

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Components of Health Related Fitness	List II – Assessment Activity
(a) Cardiovascular Endurance	(1) Yoga
(b) Muscular Strength	(2) Aerobic Exercise
(c) Muscular Endurance	(3) Dancing
(d) Flexibility	(4) Squats

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	1	4
(b)	1	4	2	3
(c)	3	3	3	2
(d)	2	1	4	1

Ans. (ii): (a) – 2; (b) – 4; (c) – 3; (d) – 1

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: A physically fit person responds effortlessly to physical tasks.

R: It is due to her/his healthy organs that she/he does not get tired easily, has keen and focused mind and has enough extra energy to recover quickly in case of exhaustion.

In the context of the two statements given above, 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 the correct explanation of (A).

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

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

Given below is the depiction data collected from a sports training academy which assessed its students for various components of physical fitness and the percentage of students who passed in various categories are as follows:

On the basis of the pie-chart given, answer the following questions:

1. The percentage of people who passed the flexibility assessment were most likely to perform ..... regularly.

(a) Yoga (b) Boxing

(c) Weightlifting (d) None of these

2. The students who passed the endurance test would have been tested for ..... and ..... endurance.

(a) maximum, explosive

(b) dynamic, static

(c) reaction, acceleration

(d) short term, long term

3. How many categories does speed test have?

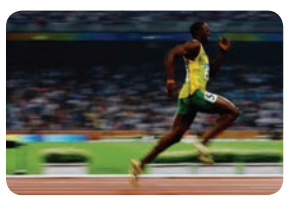
(a) 5 (b) 6

(c) 3 (d) 4

Ans. 1. (a) Yoga; **2.** (d) short term, long term; **3.** (a) 5

V. Picture-Based Questions: CBQ

Identify the following activities and write the kind of component of physical fitness and wellness required for it:

1.  .....

2.  .....

3.  .....

4.  .....

Ans. 1. Sprinting – Speed; **2.** Swimming – Endurance; **3.** Weightlifting – Strength; **4.** Yoga – Flexibility

VI. Case-Based Questions: CBQ

In a class of 50 students, a teacher was taking a lesson on components of wellness. The students were later assessed on what they had learnt.

On the basis of the case given, answer the following questions:

1. What will happen if a person does not pay attention to social wellness?

(a) It will result in consuming excess unhealthy food items.

(b) It will result inability to build lasting friendships.

(c) It will result in anxiety, depression, frustration.

(d) All of these

2. How can financial wellness be achieved?

(a) By developing money management goals

(b) By spending after saving

(c) Focusing on the principle of 'waste not, want not'

(d) All of these

3. If a person responds intelligently to circumstances and is receptive to new ideas and challenges, which of the following components of wellness justify her/his qualities?

(a) Emotional wellness

(b) Intellectual wellness

(c) Environmental wellness

(d) Spiritual wellness

Ans. 1. (b) It will result inability to build lasting friendships; **2.** (d) All of these; **3.** (b) Intellectual wellness

B. Short Answer Type–I Questions 3 marks

1. Explain sedentary lifestyle and give reasons for why it is harmful for one's health and well-being.

Ans. A sedentary lifestyle means a lifestyle consisting mainly of sitting and little physical activity–tends to have a negative impact on physical health.

2. Make a list of tips for cultivating physical fitness and wellness.

Ans. The list of tips for cultivating physical fitness and wellness are as under:

- Exert your body as often as possible.
- Use the stairs of escalators and elevators.
- Walk or cycle if the distance allows instead of driving or taking public transport.
- Exercise for a minimum of 30 minutes a day to improve muscular strength, flexibility and also to fully energy derived from food.
- Eat a balanced diet which includes a variety of nutrients and contains the right amount of carbohydrates.
- Spend time in clean and calm environment like parks and gardens.
- Socialise with people and develop hobbies to reduce stress and revitalize yourself.

3. What do you mean by endurance? Write about its types.

Ans. Endurance is the ability to resist fatigue and sustain an activity for a long duration of time.

Measured by the number of repetitions of a singular type of movement. It is applied in sports such as running, swimming and cycling, etc. It is determined by the working capacity of the individual's muscles, the degree of resistance against fatigue and environmental conditions and their pace of recovery after exhaustion. It differs from muscular strength because it concerns the individual's capability to perform a type of task repeatedly over an extended period of time.

It can be broadly classified into two categories like Short term endurance and long term endurance. Short term endurance is required to resist fatigue in sports where the action lasts for a short period but is intense in terms of force applied. Long term endurance is required in sports activities in which intensity of force is less but the duration is longer.

4. Briefly explain the coordinative abilities.

Ans. Coordinative abilities are abilities that enable an individual to do various related activities properly and efficiently. Our own coordinative abilities determine the flow, accuracy, rhythm, balance and dexterity of our movements. These are dependent on the correct responsiveness of the central nervous system. There are different coordinative abilities like:

- **Combinatory ability:** It is the ability of a sportsperson to combine movements of the different parts of the body.
- **Orientation ability:** It is the ability of a sportsperson to determine the position of the body and its parts in time and space with respect to gravity and moving objects.
- **Reaction ability:** It is the ability to respond immediately to a stimulus and execute reactive actions effectively.
- **Balance ability:** It is the ability to maintain

equilibrium of the body in both dynamic and static positions.

- **Adaptation ability:** It is the ability to achieve a high level of movement effectively.
- **Differentiation ability:** It is the ability to achieve a high level of accuracy and economy of separate body movements and phases of movement in a motor action.
- **Rhythm ability:** It is an ability to observe or perceive the rhythm of movement and execute the movement with the required rhythm.

5. Explain the components of wellness.

Ans. The components of wellness are:

- **Physical wellness:** It highlights the physiological aspects of wellness like a strong immune system which keeps away diseases and infections. A flexible and agile body enables the individual to perform muscular tasks effortlessly. It allows to have sound sleep and plenty of regular physical activity and exercises.
- **Intellectual wellness:** Intellectual wellness focuses on the intellectual health of the individual. It is just as important for the happiness of the individual as physical health. It has a strong association with physical wellness.
- **Emotional wellness:** Wellness of a person is incomplete without the emotional wellness. She/he will not be able to much if she/he are the victim of anxiety, depression and frustration. It becomes crucial to address emotional tension and to identify its causes and deal with them.
- **Social wellness:** A healthy engagement with one's social surroundings is also a key component of wellness. Interacting amicably with people can have many positive consequences like: enlargement of social circle, development of fruitful and lasting friendships, acquisition of communication skills and happiness of mind. One must cultivate in him personality traits like: politeness, kindness, a good sense of humour, the ability to listen first and then to respond, etc. to have a successful social interaction.
- **Spiritual wellness:** For many spiritually is a source of comfort and mental peace, and a silent part of wellness. It gives them strength and hope during the toughest of situations.
- **Financial wellness:** Financial shortages result in loss of mental peace and even physical comforts. The best way to live.

6. Explain any three skill-related components of fitness.

Ans. Three components of skill-related fitness are:

(i) **Reaction Time:** Reaction time or response time is the ability to detect, process, and respond to a stimulus. For example, in a football match, it is very important to detect the opponents move and know what they're going to do in order to react as quickly and carefully as possible. Tests to measure reaction time are Reaction Time Ruler Test, Reaction Stick Timers and other game specific test. Online tests can also be done.

(ii) **Power:** Power is an individual's ability to exert maximum force as fast as possible. Examples are putting the shot, long jump, etc. Tests to measure power are Burpee Jump Test, Standing Broad Jump Test, Medicine Ball Put Test and other game specific tests.

(iii) **Balance:** Balance is the ability of a person to maintain the equilibrium of the body in static as well as in dynamic positions. For example, hand-standing on a horizontal bar in gymnastics (static) and surfing (dynamic). Tests to determine balance are Flamingo Balance Test, Stork Stand Test, Standing Balance Test and other game specific test.

C. Short Answer Type-II Questions 5 marks

1. Describe the importance of wellness and physical fitness.

Ans. According to Shri Rama Krishna, "He who is soft and weak minded like the puffed rice soaked in milk, is good for nothing. He cannot achieve anything great. But the strong and virile one is heroic. He is the accomplisher of everything in life."

Therefore physical fitness and wellness plays an important role in one's life. They are as under:

- Improves efficiency of body organs and reduces the risk of heart, lungs, and liver ailments.
- Improves posture and balance of the body, thereby, making the outer appearance more fit and attractive.
- Keeps an individual energetic, focused and intelligent so that he can confidently deal with all sorts of situations and challenges.

- In cases like expectancy and eases the function of daily routine such as walking, lifting and carrying, etc.
- Keeps away fatigue and reduces recovery time after exhaustion.
- Boosts the immune system so that recovery after illness and injuries is quicker.
- Raises the ability to cope with stress and anxiety.
- Delays ageing to an individual.
- Enables an individual to maintain an ideal body weight, which in turn prevents the onset of chronic diseases and disorders.
- Raises a person's self-esteem and helps him to maintain an attractive and personable appearance.
- Overall improvement of the quality of life.

2. Why is a positive and healthy lifestyle important? Discuss.

Ans. A positive and healthy lifestyle is very important because:

- A healthy and positive lifestyle prolongs life–a universal goal.
- To keep our body in good condition we need adequate sleep and rest. When we get complete rest and sleep, we get re-energised not only to take on new challenges but also to perform the smallest minor activities of everyday life.
- Depression and stress hamper our productivity and fill our mind with grief. They even affect those around us negatively. A healthy and positive lifestyle can reduce such conditions with the production of mood regularizing hormones.
- Loss of concentration and poor memory can have a lot of harmful impacts on a person. Anyone who follows a healthy and positive lifestyle gains to benefit of sharpening their brain and performing better at whatever tasks they must undertake.
- A balance between work/study and personal life be maintained so that one is able to experience all sides of life – both the tough and the fun part.

3. What are the components of physical fitness? Discuss in detail.

Ans. The components of physical fitness are as under:

- **Strength:** The general interpretation of strength is our power to accomplish a work or series of works without getting tired quickly. "Strength is the ability of the muscles to overcome resistance or the amount of force that can be exerted by a muscle or a group of muscles against a resistance." Strengths can be dynamic which is involved in muscles. This kind of strength are of three types like: Maximum Strength, Explosive Strength and Strength Endurance.
- **Static strength:** It is the ability of the muscle to act against resistance offered by an immovable object. It is called isometric strength also. While using this kind of strength, the joint angle and muscle length do not change.
- **Endurance:** It is the ability to resist fatigue and sustain an activity for a long duration of time. It is determined by the working capacity of the individual's muscles, the degree of resistance against fatigue and environmental conditions and their pace of recovery after exhaustion. It differs from muscular strength because it concerns the individual's capability to perform a type of task repeatedly over an extended period of time. Endurance can be of two forms like short term and long term.
- **Speed:** It is the ability to perform a movement or a continuous series of movements within a very short period of time. It can be described as the capacity to produce the greatest possible muscular action in the shortest possible time also. It also differs according to the functioning of ones nervous system. There are different kinds of speed like: Reaction Ability, Acceleration Ability, Locomotive Ability, Movement Ability and Speed Endurance.
- **Flexibility:** Flexibility is the ability of an individual's joints to execute a wide spectrum of movements. It lowers fatigue and risk of injuries and increases speed, strength and endurance at the same time. Flexibility can be of passive flexibility and active flexibility.

4. Explain dynamic strength and static strength in brief.

Ans. (a) **Dynamic strength:** It is involved in movement of muscles. It is known as "isotonic strength" also. It is the strength used in exercises such as lifting weights, squatting, jumping, etc. in which muscles contract and joints close and open visibly. The dynamic strength is of three types:

- **Maximum strength:** It is the ability of a muscle to overcome resistance of maximum intensity. It is commonly used in weightlifting, discus throw, hammer throw, javelin throw and also in long jump, pole vault, and high jump.
- **Explosive strength:** It is the ability of a muscle to exert against a strong resistance at high speed. This kind of strength is commonly used in high jump, long jump, pole vault and sprint starts.
- **Strength endurance:** It is ability of a muscle to overcome resistance for as long as possible. It is used in long distance running, cycling, combative sports, etc.

(b) **Static strength:** It is the ability of the muscle to act against resistance offered by an immovable object. It is also called isometric strength. While using this strength, the joint and muscle length do not change.

5. What do you understand by the term 'flexibility'? Discuss its types in detail.

Ans. Flexibility is the ability of an individual's joints to execute a wide spectrum of movements. An individual who has great flexibility can efficiently perform more physical activities than one who has a limited range. Flexibility also reduces the amount of time required by a sportsperson to master moves. It lowers fatigue and risk of injuries and increases speed, strength and endurance at the same time. It is determined by the anatomical structure of joints, extension of ligaments and muscles, warm body temperature and the individual's age gender and physical strength. Flexibility is required in every kind of sports. Flexibility can be of two types like:

- **Passive flexibility:** It is the ability to perform a range of movements with the aid of an, external application.
- **Active flexibility:** In this kind of flexibility no external help is needed. The individual uses her/his own muscular strength to execute the movements. It is lesser in force than passive flexibility. It can be of static one in which the movement is performed while remaining in a static position.

6. Explain how health threats can be prevented through lifestyle changes.

Ans. Lifestyle is a term which we generally use to mean the way people live reflecting the entire range of social values, attitudes and activities. Today our health fitness and illness are greatly influenced by our lifestyle covering a number of aspects of human behaviour like the way we eat, the way we drink, smoke, exercises, drug dependence, human reproduction, sexual behaviour, etc. It is very necessary for us to follow a healthy lifestyle.

We need adequate nutrition, enough sleep, sufficient physical activity, personal hygiene, habits and behaviour to contribute to promote save ourselves from the threats and endangers of life. We should therefore, apply maximum strategies to achieve optimal health for the general people and these strategies can be like: diseases and illness treatment, diseases and illness prevention, and above all health and wellness promotion. All the three need due attention and care. Diseases like cancer, heart diseases, diabetes, chronic obstructive pulmonary diseases, kidney diseases, hypertension, obesity, arthritis, depression and many other diseases are the results of poor lifestyle and health threats. It is therefore, necessary to take care of above diseases and prevent them while not smoking, avoiding drugs, not to be alcoholic, in short avoiding everything which creates any kind of health problems.

7. What are the different types of exercises that can be done to prevent various health threats?

Ans. Exercise features as a key area of positive lifestyle. Exercising for a few hours in a week can help expend the energy derived from food. There are many exercises like: Aerobic or anaerobic activities that can be done at home or under the guidance of a trainer. These exercises are simple and easy and routines that require equipment. The most vital part is to stick to a daily routine and make a habit of discipline our body so that it can operate smoothly. Walking and jogging, cycling, dancing, push ups, jumping, swinging, leg stretching, toe touching, bending, running, boxing, weightlifting, tennis, hockey, football, etc. are the different types of exercises that can be done to prevent various health threats like burn fats, strengthen the joint, smoothens cardiovascular activity and to promote mental satisfaction. Therefore, by exercising for an hour daily one can avoid health risks action.

8. What are the components of health exercises related fitness? Explain each of them briefly.

Ans. The components of health-related fitness are:

- **Cardiovascular endurance:** It refers to our physical ability to undergo aerobic exercise for prolonged periods of time.
- **Muscular strength:** It deals with short duration muscle contraction involved in anaerobic activities. Short duration in this context varies from 0 to 15 seconds. In short, muscular strength means the ability of the muscles to lift weight. It is measured in pounds and dynes.
- **Muscular endurance:** Muscular endurance is defined as the ability of a muscle or a group of muscles to perform repeated muscular contradiction against resistance for a longer period of time. While muscular strength deals with short duration muscle contractions, muscle endurance deals with sustained muscle contractions.
- **Body composition:** Body composition is the percentage of your body's tissues which are composed of fat versus tissues which are fat-free. It differs from individual to individual. A healthy amount of fat for men is 15 to 18%, while that of a woman is between 20 to 25%. To avoid diseases such as diabetes, heart diseases, joint pain, muscular pain and obesity caused by excessive fat deposition, we should maintain a healthy percentage of body fat.
- **Flexibility:** Flexibility is the ability of a joint to move through a full range of motion. It is affected by joint structure, muscle length, tendons, ligaments, etc. Good flexibility in the joints can help prevent injuries through all stages of life. Without it, our posture and balance suffer and we become more vulnerable to injuries. For improving flexibility, we can try activities that lengthen the muscles such as swimming or a basic stretching programme.

CHAPTER 4

PHYSICAL EDUCATION AND SPORTS FOR CWSN

P. 67–71

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. Which of the following does not broadly define disability?

(a) Blindness and low-vision

(b) Leprosy-cured

(c) Mental retardation and illness

(d) Leukoderma-cured

Ans. (d) Leukoderma-cured

2. Which of the following competitions have been organised by Special Olympic Bharat?

(a) National Games

(b) National Floor Hockey and Table Tennis Championship

(c) National Volleyball and Basketball Championship

(d) All of the above

Ans. (d) All of the above

3. When was the term 'Paralympic' used officially for the first time?

(a) In 1988, Summer Paralympics in Britain, United Kingdom

(b) In 1988, Summer Paralympics in Athens, Greece

(c) In 1988, Summer Paralympics in Seoul, South Korea

(d) In 1988, Summer Paralympics in Olympia, Greece

Ans. (c) In 1988, Summer Paralympics in Seoul, South Korea

4. The first organised athletic event for disabled athletes to coincide with the Olympic Games were the 1948 Wheelchair Games. Who were the participants in this event?

(a) Children from USA and Great Britain born with physical disabilities

(b) British soldiers injured in World War II

(c) Former Olympic athletes injured during sports

(d) Survivors of the atomic bombings of Hiroshima and Nagasaki

Ans. (b) British soldiers injured in World War II

5. What is the meaning of ataxia, which is one of the types of physical impairments recognised by the International Paralympic Committee?

(a) Reduced ability of a muscle to stretch

(b) Significant bone shortening due to trauma

(c) Partial or total absence of bones

(d) Lack of coordination of muscle movement

Ans. (d) Lack of coordination of muscle movement

6. Which of these is not one of the colours of the three crescents in the Paralympics logo?

(a) Red (b) Yellow

(c) Blue (d) Green

Ans. (b) Yellow

7. Project Integrated Education for Disabled Children (PIED) was launched by NCERT in 1987 in collaboration with which international organisation?

(a) UNICEF

(b) UNESCO

(c) Child Rights and You

(d) Child Rights International Network

Ans. (a) UNICEF

8. What was the objective of the Saksham Scholarship Scheme (2014)?

(a) To provide support and encouragement to 1000 differently abled students to pursue physical education in a year

(b) To provide support and encouragement to 1000 differently abled students to pursue dental education in a year

(c) To provide support and encouragement to 1000 differently abled students to pursue technical education in a year

(d) To provide support and encouragement to 1000 differently abled students to pursue medical education in a year

Ans. (c) To provide support and encouragement to 1000 differently abled students to pursue technical education in a year

9. A physiotherapist is usually well-versed in related disciplines such as .....

(a) anatomy, physiology, biomechanics, kinesiology and neuroscience

(b) psychology, anatomy, biomechanics, kinesiology and neurology

(c) anatomy, physiology, psychology, kinesiology and neurology

(d) psychology, anatomy, biomechanics, physiology and neurology

Ans. (a) anatomy, physiology, biomechanics, kinesiology and neuroscience

10. Which of these professionals working for children with special needs is mainly responsible for improvement in instructional methods, such as modification of the classroom equipment and facilities?

(a) Physical education teacher

(b) Speech language pathologist

(c) Occupational therapist

(d) Physiotherapist

Ans. (c) Occupational therapist

11. Which of these is not one of the measures recommended to facilitate inclusive education?

(a) Specialised training programmes for teachers working with students with special needs

(b) Involving parents in the education of students with disabilities

(c) Making the course content much easier for students with physical disabilities

(d) Providing necessary facilities like wheelchair access and assistive devices in schools

Ans. (c) Making the course content much easier for students with physical disabilities

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Athlete	**List II – Sport**
(a) Trischa Zorn	(1) Volleyball
(b) Ragnhild Myklebust	(2) Skiing
(c) Deepa Malik	(3) Swimming
(d) Arunima Sinha	(4) Shot put

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	4	2	3
(c)	3	3	4	2
(d)	2	1	1	1

Ans. (iii): (a) – 3; (b) – 2; (c) – 4; (d) – 1

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Physical education is recognised as an indispensable portion of the school curriculum because of its many faceted benefits.

R: It helps students attain physical, emotional, mental and social prowess.

In the context of the two statements given above, 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 the correct explanation of (A).

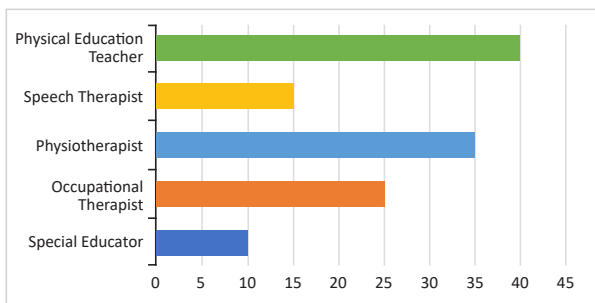
(c) (A) is true, but (R) is false.

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

The data collected from a country about the kind of professions related to physical education and wellbeing preferred by people is given below:



On the basis of the chart given, answer the following questions:

1. What would a Special Educator be required to do?

(a) Make considerations for cultural and environmental factors

(b) Teach basic literacy and communication skills

(c) Evaluate and adapt existing curriculum

(d) None of the above

2. Which is the most popular profession?

(a) Special educator

(b) Physical education teacher

(c) Speech therapist

(d) Physiotherapist

3. A professional who helps students perfect their fine motor and visual skills, as well as take care of themselves is a .....
   (a) occupational therapist.
   (b) physical education teacher.
   (c) speech therapist.
   (d) physiotherapist.

Ans. **1.** (b) Teach basic literacy and communication skills; **2.** (d) Physiotherapist; **3.** (a) Occupational therapist

V. Picture-Based Questions: CBQ

Identify the following occupations:

1.  .....
2.  .....
3.  .....
4.  .....

Ans. **1.** Physical Education Teacher; **2.** Physiotherapist; **3.** Speech Therapist; **4.** Special Educator

VI. Case-Based Questions: CBQ

A person is well-versed in anatomy, physiology, biomechanics, kinesiology and neuroscience.

On the basis of the case given, answer the following questions:

1. Identify the possible occupation of the person described above?
   (a) Special education counsellor
   (b) Physiotherapist
   (c) Speech therapist
   (d) All of these
2. A physiotherapist is needed for .....
   (a) encourage students to participate in class activities.
   (b) chalking out a plan for special education counsellors.
   (c) assist teachers in speech training.
   (d) medical consultation and supervision.
3. Which of the following roles will such a person play?
   (a) Devise a suitable platform for students to perform activities at tournaments
   (b) Design programmes and activities that involve promotion of balance, strength and coordination
   (c) Diagnose the exact type of speech disorder and devise plan to rectify it
   (d) Conduct spiritual wellness sessions

Ans. **1.** (b) Physiotherapist; **2.** (d) Medical consultation and supervision; **3.** (b) Design programmes and activities that involve promotion of balance, strength and coordination

B. Short Answer Type-I Questions 3 marks

1. How do you define 'disability'?

Ans. The persons with disability are defined under Equal Opportunities, Protection of Rights and Full Participation Act, 1955 as under:

- Blindness
- Low vision
- Leprosy–cured
- Hearing impairment
- Loco motor disability
- Mental retardation
- Mental illness

American legislation further specifies the categorization by including multiple disabilities, serious emotional disturbance, traumatic, brain, injury and other health impairment.

2. What are the objectives of adapted physical education?

Ans. The objectives of adapted physical education can be enumerated as under:

- Develop fundamental motor skills and patterns of students with disabilities, such as running, throwing, catching, etc.
- Help students to improve their balance coordination.
- Bring about participation in activities such as dance, aquatic and other sports.

- Make them realize healthy self esteem through increased physical independence.
- Reduce health complications.

3. How is physical education beneficial for students with disability?

Ans. Physical Education is considered as an indispensable and an essential aspect for disabled students. To include them adaptive physical education was introduced as a sub-discipline. It is a modified or individualized programme that caters to the needs of disabled students. It creates a space for them to realize physical and mental well-being.

4. What is the vision of Special Olympics Bharat?

Ans. The vision of special Olympic Bharat is to:

- Promote holistic development and training that goes beyond the classrooms and brings the participants to the sports arena and further to the larger cultural and community spaces.
- Encourage children to join and remain in school so that they receive the same education as their more abled counterparts.
- Produce inspiring role models and also to give a moral and beneficial incentive to parents to send their children to school for both academic education and participation in sports.
- Prepare and sensitive teachers to the specific needs of special children a cadre of physical education teachers from among the disabled community with the ability to work both within and outside of the school.
- Involve the community at large for understanding and accepting people with intellectual disabilities and encourage local people to volunteer.
- Make sure that all Special Olympic Bharat activities reflect the Olympic Movement values and standards.

5. What are some achievements of Special Olympics Bharat?

Ans. The different achievements of Special Olympic Bharat are as under:

- Organized competitions in a wide variety of disciplines since 2002 on the national level like: National Games, National Floor Hockey Championship and many other games.
- Athletes from Special Olympic Bharat have participated in World Winter Games and participated up to 2015, they have won 322 gold, 343 silver and 397 bronze medals in the world summer and world winter games bringing a total of 1062 medals.
- Around 400 sportspersons participated in the first Regional Asia Pacific Games held in 2013. Special Olympics Bharat brought home a total of 387 medals with 111 gold,136 silver and 140 bronze.
- A total of 23,750 athletes participated in the five National Games held between 2001 and 2011.

6. What are the obstacles faced in the implementation of adapted physical education in India?

Ans. It is a matter of concern for all of us that in India we face a number obstacles in the implementation of adapted physical education. There are some of the teachers of physical education who do not know about the programmes of adapted physical education. In the schools, no stress is laid down on understanding the needs of differently abled students. No programmes related to adapted physical education is being implanted. Under such conditions, no programmes of adapted education are being conducted.

7. How are the Paralympic Games carried out?

Ans. International Paralympic Committee organizes the Summer and Winter Paralympic Games. It also serves as the International Federation for nine sports. Its opening ceremony is similar to that of the Modern Olympics, having followed the rituals of the Antwerp Summer Olympics of 1920. First the flag of the host nation is hoisted and the national anthem is played. This is followed by a march past of participating nations in alphabetical order with the host nation's participants entering last, the torch is lit after the sporting events have concluded the closing ceremony takes place. The first to enter are the flag-bearers of participating nations, followed by athletes of different nationalities in a homogenous mass. The Paralympic flag is taken down, the national flag of the subsequent host is hoisted and the national anthem played. The flame is extinguished to officially marked the conclusion of the games.

8. Why is the concept of inclusion necessary in education with respect to students with special needs?

Ans. The matter of inclusion was first adopted at the World Conference on Special Needs Education: Access and Quality, and reinforced at the World Education Forum. In this statement, the

respective governments of participating nations were asked to prioritise inclusive education. Inclusive education was described as the "recognition of the need to work towards schools for all – institutions which include everybody, celebrate differences support learning, and respond to individual needs".

The importance of inclusive education is also highlighted by United Nations Standard Rules on Equalisation of Olympic Opportunities for Person with Disability Proclaiming Participation and Equality for all.

C. Short Answer Type-II Questions 5 marks

1. Discuss the history, mission, oath and vision of Special Olympics Bharat in detail.

Ans. It is a programme of Special Olympics International authorized to conduct Special Olympics for sportspersons with intellectual disabilities in India. Its name was changed to Special Olympics Bharat in 2001. It is now a National Sports Federation registered under the Indian Trust Act, 1882 and the official nodal agency for all disabilities. It was begun by Eunice Kennedy Shriver. It believes that people with intellectual disabilities can also learn, enjoy, and benefit from participation in sports, consistent training helps develop their sports skills, and sports strengthen and benefits people with intellectual disability physically, mentally, sociably and spiritually.

Mission: Special Olympics Bharat aims to provide year round sports training and athletic competition. The types of sports included in the curriculum are all Olympic approved sports. Both children and adults with intellectual disabilities are in the programmes thereby giving them a chance to strengthen their physique, boost their self-confidence by engaging them in an atmosphere of active and healthy communication and friendship.

Oath: The oath is "Let me win. But if I cannot win, let me be brave in the attempt".

Vision: Its vision is to:

- Promote holistic development and training that goes beyond the classrooms and brings the participants to the sports arena and further to the larger cultural and community spaces.
- Encourage children to join and remain in schools so that they receive the same education as their more abled counter parts.
- Produce inspiring role models.
- Prepare and sensitise teachers to the specific needs of special children and build a cadre of Physical education teachers.
- Involve the community at large for understanding and accepting people with intellectual disabilities.
- Make sure that all Special Olympics Bharat activities reflect the Olympic movement values and standards.

2. Describe the objectives and principles of adapted physical education.

Ans. Adapted physical education aims at to:

- Develop fundamental motor skills and patterns of students with disabilities, such as running, throwing, catching, etc.
- Help students to improve their balance coordination and posture.
- Bring about their participation in activities such as dance, aquatics and other sports.
- To make them realize healthy self-esteem through increased physical independence.
- Reduce health complications.

Principals of Adapted Physical education are as under:

- It is imperative to have thorough knowledge of motor behaviours and development patterns of the different kinds of disabilities and how people with these disabilities vary from their abled counterparts.
- The activities and programmes should be planned according to the interests of their students and after taking their specific needs into consideration.
- Routine medical check up should be conducted not only for pure health benefits but also to monitor the progress of the students and assess the effectiveness of the programmes.
- The rules governing physical education classes for abled students cannot be applied to their peers who have special needs.
- Apart from having sufficient knowledge and experience, the trainers should also have abundant patience, empathy and strong communication skills.

3. Write a note on the history of Paralympic Games.

Ans. The Paralympic games are an international multi-sporting event involving athletes with a variety of physical and intellectual disabilities

including mobility disabilities, amputation, blindness, short stature and cerebral palsy. The IPC oversees the organization of these games which are held immediately after the Summer and Winter Olympics as Summer Paralympic Games and Winter Paralympic Games respectively.

The movement was started by Sir Ludwing Guttmann, who believed in the power of sports to change lives for the better. He valued the ability of sports and competing in sports for those with disabilities. He envisioned how they could extent possible and how they could also build their self-esteem by performing well. He organised the first games in 1948. The IPC replaced the ICC in 1989. The motto of the Paralympic Games is "Spirit in Motion", and its symbol are three asymmetrical crescents called agito, circling around a central point. The crescents are red, blue, and green in colour. The French musician Thierry Darnis composed the anthem "Hymne de l'Avenir" ("Anthem of the Future").

4. What are the categories of disabilities accepted by the Paralympic Games for participation?

Ans. The categories of disabilities accepted by the Paralymic games are ten in number, recognized by the IPC for participation in the Paralympic Games: Eight impairment types, visual impairment types and intellectual disability.

- **Physical impairment:** Impaired passive range of movement, leg length difference, short stature, Ataxia, Athetosis and hypertension, etc.
- **Visual impairment:** It includes partial vision, and total blindness.
- **Intellectual disability:** The condition is being that the athletes are diagnosed before the age of 18.

5. Discuss Deaflympics in detail.

Ans. The deaflympics are an international sports event for deaf athletes, held every four years, with both summer and winter games held alternately after a gap of two years. First held in Paris in 1942, it has gone by several other names as International Games for the Deaf from 1924 to 1965, The World Games for the Deaf from 1966 to 1999. The games were also some times referred to as World Silent Games. The name 'Deaflympics' was adopted in 2001. Since its inception, it has been organised by *Comité International des Sports des Sourds (CISS*, 'The International Committee of Sports for the Deaf'). The CISS was recently renamed '*Le Comité International des Sports des Sourds*' (The International Committee of Sports for the Deaf, or ICSD). The CISS was inducted into IOC in 1955.

6. Discuss the history of Inclusive Education.

Ans. In UNESCO's Education for All (EFA) Global Monitoring Report on out-of-school population, 2014, it was observed that 1.4 million Indian children of ages 6 to 11 are not receiving formal education. Almost half of the students in primary school drop out before completing five years, while only 42% complete high school. Some of the contributing factors are shortage of teachers and school in relation to the population, poor quality of learning, social and cultural factors, poverty, etc. This is the case with general education and the general population; in such a condition, inclusive education – education of students with learning disabilities and special needs – in a huge challenge to be met.

In the context of India, the Kothari Commission raised the issue of inclusive education in 1966, and the government introduced Integrated Education for Disabled Children (IEDC) Scheme in 1974. Project Integrated Education for Disabled Children (PIED) was launched by NCERT in 1987 in collaboration with UNICEF to streamline the inclusion of students with disabilities in general education. The National Policy on Education (1986), the Programme of Action (1992), the District Primary Education Programme (1997), Sarva Shiksha Abhiyan (2001), were some of the measures which also laid stress on the integration of students with special needs into the mainstream. The Universalisation of Elementary Education, which launched SSA, made the crucial declaration of access, enrolment and retention of all children of 6–14 years of age in school, with a policy of ensuring education for Child With Special Needs (CWSN).

7. Write a note on the implementation of Inclusive Education for students with special needs.

Ans. In order to facilitate inclusive education successfully the following measures may be considered:

- A proper realization of the Right to Education Act and its provisions and inclusion of students with special needs under its aegis.
- Specialized training programmes for teachers who are given the responsibility of working with students with disabilities

since the requirements of this section of the population are different from the general.

- At schools an entire team of experts from special educators and physiotherapists to counselors and occupational therapists should be present to look the various needs.
- Curricula and instructional design prepared for students with disabilities should have plenty of room for adjustment without dumping down the content.
- Inclusive education is a big step integration of students with disabilities in the greater fold of the society.
- Inclusive education will also reduce the discrimination faced by the people with disabilities.
- Inclusive education also has multiple benefits for students with special needs such as enhancement of their social skills and emotional intelligence, development of principles and culture sensibilities and generally enriching their lives.

8. Write notes on how the following can help students with special needs:

(a) Special Education Counsellor

(b) Occupational Therapist

(c) Special Educator

(d) Physical Education Teacher

(e) Physiotherapist

(f) Speech Therapist

Ans. (a) The special education counselor can look after the students and their well-being, taking into consideration the academic, vocational, social and psychological factors. He can be helpful in deepening the connection between the students and their families, to expand their social skills, to provide guidance to hold sessions with the students, to communicate with students, etc.

(b) Occupational therapist can be helpful to students perfect their fine motor and visual skills, to aid the students in gaining correct hand-eye coordination, to assess the abilities of the students and encourage them to participate in the activities of the class room.

(c) Special educator can be helpful to a student in altering general education lessons to make it accessible according to the needs of the students, to help the students achieve academic success, to have literacy and communication skills.

(d) Physical education teacher can be helpful to devise or setting in which students with special needs can perform exercise and activity, to cultivate and adapt existing curriculum, so that students with special needs can adjust, to plan and prepare the activities according to the needs of the students, to install a positive attitude in the students, to approach the students needs on individual and group levels, to satisfy the emotional needs of the students.

(e) Physiotherapist can be helpful to the students to achieve full physical functions. He can help the students to gain control of fundamental motor skills, to promote balance, strength and coordination, to monitor and make adjustments to the programmes and activities of the students as require, etc.

(f) A speech therapist, also known as Speech Language Pathologist (SLP) or speech pathologist, works with communicative and speech disorders, which may be speech ans lingual issues, problems with swallowing and voice, cognitive communication, etc.

D. Value-Based Question

Sajid is a student of Class 11. He is physically impaired (differently abled). He has different leg lengths. Instead he is very good in sports but never takes part in any activity. Mr Yogesh Chandra, the Physical Education teacher of his school, used to observe him and judged his capabilities to excel in sports. He encouraged Sajid to participate in sports. He helped him to boost confidence and hone his skills. As a result of this motivation and support, he contested in National Games and performed well.

Answer the following questions based on the above passage:

1. What do you understand by the term disability?

2. What is leg length?

3. What are the values shown by the Physical Education teacher?

Ans.

1. By the term disability we understand the one who is physically impaired.

2. By the term leg length we understand that it is the length between bottom edge of the foot base to the upper edge of the greater trochanter.

3. Helping others, value of human being, etc

CHAPTER 5

YOGA

P. 87–91

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. On which date is the International Yoga Day celebrated every year?

(a) 15 August (b) 21 June

(c) 26 January (d) 21 July

Ans. (b) 21 June

2. How many limbs of yoga are there?

(a) 5 (b) 7

(c) 8 (d) 13

Ans. (c) 8

3. Which of the following is not a meditative asana?

(a) Vajrasana (b) Padmasana

(c) Shavasana (d) Gomukhasana

Ans. (c) Shavasana

4. Which famous yogic book was written by Maharshi Patanjali?

(a) *Yoga Sutra* (b) *Yoga Manjari*

(c) *Ashtanga Yoga* (d) *Samaveda*

Ans. (a) *Yoga Sutra*

5. The origin of yoga can be traced back to .....

(a) post-Vedic Indian traditions – around fourth and fifth centuries BCE

(b) pre-Vedic Indian traditions – around fourth and fifth centuries BCE

(c) post-Vedic Indian traditions – around sixth and fifth centuries BCE

(d) pre-Vedic Indian traditions – around sixth and fifth centuries BCE

Ans. (d) pre-Vedic Indian traditions – around sixth and fifth centuries BCE

6. What is the goal of yoga?

(a) To help us utilise the mind and body to achieve an awareness of ourselves as a unit

(b) To help us utilise the breath and body to achieve an awareness of ourselves as a unit

(c) To help us utilise the breath and mind to achieve an awareness of ourselves as a unit

(d) To help us utilise the mind and physique to achieve an awareness of ourselves as a unit

Ans. (b) To help us utilise the breath and body to achieve an awareness of ourselves as a unit

7. Asanas refers to ..... while Pranayama refers to .....

(a) physical exercises; breathing exercises and control of breath

(b) body postures; breathing exercises and control of prana (internal energy)

(c) body movements; mind exercises and control of brain

(d) control of the senses; union with the divine

Ans. (b) body postures; breathing exercises and control of prana (internal energy)

8. What is the difference between Dhyana and Samadhi?

(a) Dhyana is devotion, meditation on the divine will, whereas, samadhi is union with the divine.

(b) Dhyana is union with the divine, whereas, samadhi is devotion, meditation on the divine will.

(c) Dhyana is concentration and cultivating inner perceptual awareness, whereas, samadhi is union with the divine.

(d) Dhyana is union with the divine, whereas, samadhi is concentration and cultivating inner perceptual awareness.

Ans. (a) Dhyana is devotion, meditation on the divine will, whereas, samadhi is union with the divine.

9. What is pratyahara?

(a) Profound contemplation without distraction

(b) The sixth limb of ashtanga yoga

(c) The highest limb in ashtanga yoga

(d) Gaining mastery over external sensory pleasures

Ans. (d) Gaining mastery over external sensory pleasures

10. How many yogic kriyas are there?

(a) Six (b) Five

(c) Four (d) Seven

Ans. (a) Six

11. What does padma in Padmasana stand for?

(a) Spine – strength and control

(b) Feet – stability and firmness

(c) Lotus – enlightenment, rebirth and prosperity

(d) Locust – free movement and happiness

Ans. (c) Lotus – enlightenment, rebirth and prosperity

12. Which of the following asanas resembles the pose of an eagle?

(a) Naukasana (b) Tadasana

(c) Garudasana (d) Vrikshasana

Ans. (c) Garudasana

13. Asanas are classified into three categories. Meditative asanas and relaxative asanas are two of them. What is the name of third category?

(a) Pranayama

(b) Cultural or Corrective asanas

(c) Spiritual asanas

(d) Devotional asanas

Ans. (b) Cultural or Corrective asanas

14. Which one of the following is not a benefit of Naukasana?

(a) Enhances blood circulation

(b) Improves confidence and willpower

(c) Reduces fat around abdomen

(d) Relaxes the spine

Ans. (d) Relaxes the spine

15. What pose does your body get into when you perform Vrikshasana?

(a) Saint like (b) Boat like

(c) Eagle like (d) Tree like

Ans. (d) Tree like

16. Which of the following is a benefit of yog-nidra?

(a) Awakens creativity, enhances memory retention and increases learning capacity

(b) Regulates blood pressure and body temperature

(c) Improves body posture and stability

(d) Strengthen the spine and lungs

Ans. (a) Awakens creativity, enhances memory retention and increases learning capacity

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Limb of Yoga	List II – Meaning
(a) Pranayama	(1) Union with the Divine
(b) Pratyahara	(2) Meditation on the Divine Will
(c) Dhyana	(3) Control of the senses
(d) Samadhi	(4) Breathing exercise

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	4	2	3
(c)	3	3	4	2
(d)	2	1	1	1

Ans. (iv): (a) – 4; (b) – 3; (c) – 2; (d) – 1

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Stress and anxiety can be reduced by regular practice of yoga.

R: Practising breathing techniques drives away insomnia to a large extent.

In the context of the two statements given above, 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 the correct explanation of (A).

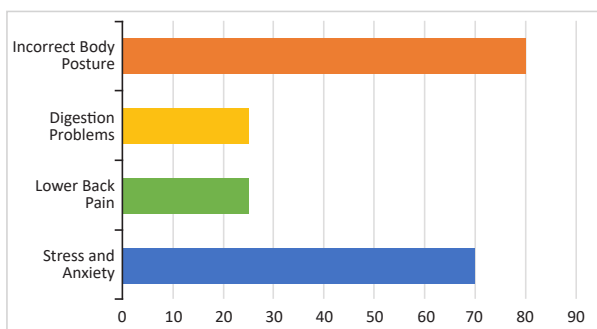
(c) (A) is true, but (R) is false.

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

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

IV. Data-Based Questions: CBQ

Given below is a data collected from a locality identifying the common ailments:



On the basis of the chart given above, answer the following questions:

1. Which of the following asanas can help in reducing lower back pain?

(a) Shashankasana (b) Vrikshasana

(c) Naukasana (d) None of these

2. Which is the following will help in improving body posture?

(a) Tadasana (b) Sukhasana

(c) Vrikshasana (d) All of these

3. Tadasana is also good for tackling .....

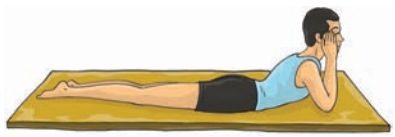
(a) constipation (b) willpower

(c) errant sleep patterns (d) lumber pain

Ans. **1.** (c) Naukasana; **2.** (d) All of these; **3.** (a) Constipation

V. Picture-Based Questions: CBQ

Identify the following asanas:

1. 

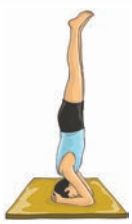
.....

2. 

.....

3. 

.....

4. 

.....

Ans. **1.** Makarasana; **2.** Bhramari Pranayama; **3.** Jal Neti Kriya; **4.** Shirshasana

VI. Case-Based Questions: CBQ

An expert has been called to demonstrate different yogic kriyas in a school campus and also train the students.

On the basis of the case given, answer the following questions:

1. Which of the following kriyas will be taught to children for training the eyes and mind?

(a) Kapalbhati (b) Trataka

(c) Vasti (d) Dhauti

2. The expert tells the students to perform nauli regularly. What are the benefits of nauli?

(a) Removes toxins from the body

(b) Enhances the power to focus

(c) Cleanses the rectum

(d) Strengthens liver

3. Which of the kriyas will help in cases of sinusitis?

(a) Trataka (b) Neti

(c) Dhauti (d) Vasti

Ans. **1.** (b) Trataka; **2.** (d) Strengthens liver; **3.** (b) Neti

B. Short Answer Type-I Questions 3 marks

1. Why is yoga important in modern life?

Ans. We live in an era in which the challenge of modern society is to continuously adapt to a rapidly changing world. We have arrived at a fairly advanced state of living, we also face stress levels that far exceed the concerns and complications faced by our ancestors. We are worried and worried for shelter, food and clothing in other words we face the civilization of materialism.

In order to get over this kind of anxiety and worries, yoga plays a significant and vital role. It aids us to understand our inner self, gives us lasting peace of mind and appreciations of life. The main purpose of yoga is to help us utilize the breath and body to achieve an awareness of ourselves as a unit interconnected with others in the unified whole of creation.

2. Write short notes on: samadhi, dharana, pratyahara and dhyana.

Ans.

- **Samadhi:** It is the highest limb in *Ashtanga Yoga* – the final stage in which a person experiences oneness with the universe. There are two types of samadhi: one as samprajnata samadhi also called savikalpa samadhi and the other asamprajnata samadhi also called as nirvikalpa samadhi.
- **Dharana:** It is sixth limb of *Ashtanga Yoga*, translated as concentration or single focus. It is the initial step of deep concentration or Samadhi, where the object being focused upon is held in the mind without consciousness wavering from it. The focal point can be at the centre of the head of the navel.
- **Pratyahara:** Ahara means food or anything we take into ourselves from the outside. Prati stands for against or away. Pratyahara, therefore, literary means 'control of ahara', or gaining mastery over sensory pleasures. Its primary function is the withdrawal from or control over sensory impressions,

releasing the mind's external influences. It strengthens the mind's power of immunity and brings it close to divinity by avoiding sensory distractions of sound, beauty, smell, touch, etc.

- **Dhyana:** It is known as meditation. It means profound contemplation without distraction. Here the practitioner trains the mind to remain fixed at a single external point in a continuous flow. The concentration is so strong that no sensory perception or intrusion can break it. In this way, the practitioner approaches spiritual liberation and bliss.

3. Discuss at least three types of asanas for concentration.

Ans. The three types of asanas for concentration are as under:

- **Padmasana (lotus pose):** A cross-legged sitting yoga posture which can calm the mind and fight physical ailments. Four *mudras* (hand gestures) can be used in padmasana: *chin mudra*, *chinmayi mudra*, *adi mudra* and *brahma mudra*.
- **Swastikasana (ankle lock pose):** Also known as the auspicious pose, swastikasana is a simple sitting posture with the ankles locked against each other. It can bring relief from muscle pain.
- **Vajrasana (thunderbolt pose):** Performed by sitting on the knees with a straight posture and upward spine. It is known to stimulate digestion and liver function.

4. Differentiate between Relaxative Asanas and Cultural Asanas.

Ans. The differences between Relaxative asanas and Cultural asanas are as under:

Relaxative asanas: These asnas are designed in such a manner that there is no need to contract the muscles. Its aim is to remove fatigue and relax an individual physically and mentally. For example, we take a few relaxative asanas here: Shashankasana, Shavasana, etc.

Cultural asanas: These are exercise poses that imitate various aspects of God in the form of animals and divine beings. It has three stags: coming into the position, holding the position and releasing oneself from the position. It also has different types like: Shalabhasana (locust pose), Halasana (plow pose), Matsyasana (fish pose) and Shirshasana (headstand pose).

5. Write short notes on any three yogic kriyas.

Ans. Three yogic kriyas can be described as under:

- **Neti (Nasal cleansing):** It is important to keep our nasal clean for making respiration easier, maintaining personal hygiene and preventing infection. It can be done in two ways like Sutra neti and Jal neti.
- **Nauli (Abdominal message):** It is a method of churning or sacking the body to stimulate the intestines, strengthen the liver and ease the process of digestion and ejection.
- **Vasti (Colon cleansing):** Like an enema, vasti also cleans the large intestine. It achieves this with the suction of water or air through the rectum.

6. How does yoga improve concentration?

Ans. In Patanjali's *Yoga Sutras*, it has been stated yoga *chitta vriti nirodha*. The famous scholar I K Taimni translated this as "Yoga is the silencing of the modifications of the mind". We can say that yoga enables concentration. It eliminates distractions and lets the individual focus his mind calmly and effectively.

7. Write about the benefits of Sukhasana.

Ans. The benefits of Sukhasanas are as under:

- Sukhasana is perfect for beginners as the position is easy to achieve and there is no need to have a guide or partner. It can be done anywhere.
- Apart from calming the mind and stretching the spine, it can broaden the chest and collar bones.
- It gives an overall sensation of peace and quiet, removing mental fatigue and stress.
- It improves body posture, opens up the hips and strengthens the back.
- It also opens the knees and anklets.

8. Write down the steps of Tadasana.

Ans. The steps of Tadasana are as under:

- Stand erect with your feet slightly apart and raise your arms above the head. Breath steadily.
- Distribute your body weight evenly on the feet. Lock your fingers with palms upwards.
- Stand on your toes. Stretch upwards as much as you can.
- Hold the pose as long as you can. Breathe out and return to your starting position.
- Turn your thighs slightly inwards.
- Elongate your tailbone towards the floor and lift your pubis towards your naval. Look upwards.

- Now breathe in and stretch your shoulders, arms and chest upwards. Raise your heels. Your weight should be balanced on the toes.
- Feel the stretch in your body right from your feet to your head.
- Hold the pose for a few seconds and exhale.
- You should make sure that while doing this pose you don't tuck your tailbone and flatten your lumber spinal curve. Doing this pushes your hips forward and prevents you from forming a long line from your feet to the top of the head.

9. Mention the steps and benefits of Padmasana.

Ans. The steps and benefits of Padmasana are as under:

Steps:

- Sit on a floor surface on the ground. You may also use a carpet /blanket mat. Your spine should be erect and your legs stretched out in front of you.
- Gently bend the right knee. With the help of your hands, place it on your left thigh. Make sure your soles are pointing upwards and the heels close to the abdomen.
- Repeat the above step with the other leg.
- Take up a mudra of your choice and place it in position. The hands should be placed on the knees.
- With your head straight and the spine still erect inhale deeply. Hold the position for a few minutes exhale.
- Repeat the routine with the other leg on top.

Benefits:

- It has a soothing effect on the mind and raises the level of awareness and alertness.
- It straightens the spine and correct body posture.
- Knees and anklets are effectively stretched while the flexibility of the joints and ligaments are increased.
- Additionally it alleviates sciatica and menstrual cramps.
- It strengthens the hips.

10. Describe Shashankasana in your words.

Ans. Shashankasana is the asana in which a practitioner takes a position that resembles a hare. It is the asana which we call hare asana also. This kind of asana brings a feeling of tranquillity, calms our nerves and sharpens our mind also. It involves a number steps like vajrasana or diamond pose and many other steps also. This asana gives us a number of benefits like; it rejuvenates the brain and brings relief from depression, sleeplessness and mental exhaustion. It enhances concentration and memory and relaxes the nervous system and brings emotional stability also.

11. How is the garudasana performed?

Ans. Garudasana is also termed as the eagle pose. This is a standing asana and the final position resembles the bird eagle. This asana symbolises strength, balance and stability. Steps to perform Garudasana are:

- Stand straight and extend your body upward.
- Raise your right leg slightly up by flexing the knee.
- Wrap the left leg with the right, flexing both from the knees. Curl the right toe around back of the left calf muscle.
- Focus on a point in front and get the balance.
- Cross the right hand around the left, keeping the left hand down.
- Flex both the arms from the elbow and try to join the palm.
- Keep the palms at the centre of the face and maintain for 3–5 seconds in the beginning.
- Repeat the same movement while balancing on the right leg.

12. Write any three benefits of naukasana.

Ans. Three benefits of naukasana are:

(i) This asana strengthens the abdominal muscles.

(ii) It improves core stability and strength.

(iii) It improves the stability and strength of the back muscles.

13. Explain the concept of yog-nidra.

Ans. Yoga-nidra or yogic sleep is a relaxation technique that is simple to perform and has wide benefits for the body and soul.

It energises the body. The energy of our body becomes consolidated and our nervous system is fully activated readying us for the final meditation. Yoga-nidra can be understood as a state between consciousness and sleep in which the practitioner is alerted to the inner world. In order to attain a satisfactory yoga-nidra certain conditions are necessary: first, the stomach should be light. Secondly, the area where you have chosen for practice should be free of clutter.

14. What are the benefits of yog-nidra?

Ans. The benefits of yoga-nidra are as under:

- Yoga-nidra can be practised by anyone and does not require any complicated poses or techniques. It only requires you to lie on the floor in a comfortable area of your choice only.
- It is easy to fit yog-nidra into your daily life. You can do it in the morning, evening or before sleeping.
- It reduces stress and tension to a large extent. By staying in tune with your breathing and scanning your body, you help calm the nervous system and achieve full relaxation.
- It also makes you to realise yourself. You come face to face with your deeper spiritual self, making you one with your body and instilling a strong sense of tranquility throughout.
- It awakens your creativity, enhances memory retention and increases learning capacity.

C. Short Answer Type-II Questions 5 marks

1. Write a brief note on the eight limbs of yoga.

Ans. The eight limbs of yoga are:

- **Yama:** Universal morality and ethics comprising ahimsa, satya, asteya, brahmacharya and aparigraha.
- **Niyama:** Personal rules, comprising saucha, tapa, swadhyaya, and ishwara pranidhana.
- **Asanas:** It means body posture.
- **Pranayam:** It is the breathing exercises and control of prana.
- **Pratyahara:** It means the control of senses.
- **Dharana:** It means concentration and cultivating inner peace and awareness.
- **Dhyana:** It is the devotion, meditation on the divine will.
- **Samadhi:** It means the union with the divine.

2. Write in detail on: (a) yama and (b) niyama.

Ans. (a) **Yama:** It is the first form of Yoga. It has the following five sub-disciplines:

- **Ahimsa:** One of the most recognized terms in Indian cultural history. It means non-violence.
- **Satya:** It means the truth. This highlights the importance of truthfulness.
- **Asteya:** It means to 'not steal' or non-stealing of anything whether money, material, ideas, speeches or writings, etc.
- **Brahmacharya:** It is denouncement of excessive sexual desire and lust rather than abstinence from sexual activity which is necessary for protection.
- **Aparigraha:** It is the hoarding of wealth for self-interest. It enables us to be satisfied with what we have or get.

(b) **Niyama:** It is being performed to eliminate wrong, harmful or disturbing behaviour. We have five types of niyamas like:

- **Saucha** which focuses on the importance of having a clean body and mind which can be realised by practising asanas and prayanamas.
- **Santosh:** Like aparigraha, santosh upholds modesty, as a virtue which can bring us contentment of mind.
- **Tapa:** It is called for a discipline use of the energy produced by the body by applying it to fruitful physical tasks and activities.
- **Swadhyaya:** 'swa' means 'self', adhaya' means 'study'. It is, therefore, thoughtful reflection on oneself and one's actions.
- **Ishwara pranidhana:** Proximity with the Divine will save us from going astray.

3. Describe the different types of asanas in detail.

Ans. The different type of asanas are:

(a) **Meditative asanas:** This type of meditative poses are very important when practising the breathing exercises and meditations like:

- **Padmasana** which is a cross-legged sitting yoga posture and can calm the mind and fight physical ailments.
- **Swastikasana:** It is a simple sitting posture with the ankles locked against each other.
- **Vajrasana:** It is performed by sitting on the knees with straight posture and upward spine.
- **Gomukhasana:** A sitting position that releases tension in the hips and shoulders and utilizes the ankles, thighs, hips and chest.

(b) **Relaxative asanas:** These are designed in such a way that there is no need to contract the muscles. Its aim is to relieve from the fatigue. Here are some of the examples:

- **Sashankasana:** It is a bending position in which the body resembles a hare.

- **Shavasana:** In this asana a practitioner lies on his back in the manner of a dead body. It removes one from the stress and anxiety.
- **Makarasana:** It is opposite to shavasana. Here the practitioner; lies with his face upside down.

(c) **Cultural asanas:** These are the exercise poses that imitates various aspects of God in the form of animals and divine beings.

A few examples are as under:

- **Shirshasana:** In this type of asana, the practitioner stands on head and this offers many health benefits.
- **Matsyasna:** When carried out in water, this chest – lifting pose can make the body float like fish. It stretches and relieves tension in the neck and chest and eases the breathing and tones the pituitary glands.
- **Halasana:** In this pose, the practitioner lies on the back, raises legs above the torso and brings the feet towards the head.
- **Shalabhasana:** The practitioner lies on the stomach and raises his legs giving the appearance of a locust.

4. What are the eight types of pranayama? Discuss.

Ans. The eight types of pranayama are:

- **Suryabhedi pranayama:** An alternative breathing technique that increases flow of the gall and digestion, reduces phlegm and gas, provides body warmth and purifies the blood.
- **Ujjayi pranayama:** Sharpens the mind, generates internal body heat, lowers the risk of heart attack and can help patients cope with respiratory diseases especially asthma.
- **Sheetkari pranayama:** It means the Inhalation through an open mouth and exhalation thorough the nose. Health benefits include lowering of body temperature and blood pressure, enhancement of digestion and relieving of stress.
- **Bhastrika pranayama:** It is the pranayama in which the belly is involved in the process of respiration. It is useful for metabolism and digestion.
- **Sheetli pranayama:** It is the pranayama in which the practitioner rolls the tongue, sticks it out and breathes through the hole and then closes the mouth and exhales through the nostrils.
- **Bhramari pranayama:** Breathing is performed with the index fingers pressing into the air and sounding like a black Indian bee.
- **Plavini pranayama:** In this kind of pranayama, the practitioner crosses the legs and balances on the hands to raise the body. It increases the blood circulation.
- **Kapalbhati:** A powerful breathing technique that improves metabolism, blood circulation and function of the liver and kidneys.

5. Describe the benefits of (a) asana and (b) pranayama.

Ans. (a) The benefits of asanas are as follows:

- It makes the practitioner alert to the centre of his being, which further helps to maintain balance in movement and renders the body more agile.
- Blood circulation is improved along with the internal organs for smoother functioning of the body.
- It reinforces immunity and resistance, enhances acuteness of the senses, increases the mind's ability to concentrate and respond intelligently and reduces stress.
- It fends off fatigue and provides relief from cramp and joint pains.

(b) The benefits of pranayama are as follows:

- It generates the internal body heat, lowers the risk of heart attacks, helps to cope with respiratory diseases particularly asthma.
- It lowers the body temperature and blood pressure, enhancement of digestion and relieving stress.
- It cools down the nervous system and endocrine glands.
- It is useful for metabolism and digestion.
- It gives relief from tension, anxiety, migraines, headaches and lowering of blood pressure.
- Increases blood circulation.
- It increases the flow of the gall and digestion, reduces phlegm and gas.

6. Discuss how yogic kriya can cleanse the human body.

Ans. Yogic kriyas are cleansing activities used for purifying the body and preparing it for the journey to a higher state of consciousness such as neti, kapalbhati and trataka. In yogic kriyas, we have six activities like neti which means nasal

cleaninsing, kapalbhati meaning detox breath, trataka meaning gazing at a candle flame, vasti known as colon cleansing and it cleans the large intestines, dhauti which means internal cleaning, nauli meaning abdominal massage and it is the method of churning or shaking the belly to stimulate the intestines, strengthen the belly to stimulate the intestines, strengthen the liver and ease the processes of digestion and ejection.

7. Discuss how yoga can improve concentration, citing specific examples.

Ans. It is universally admitted that yoga improves the concentration. It eliminates distractions and lets the individual to focus his mind calmly and effectively. There are many yoga poses which can help us to achieve the state of absolute concentration and the four of them are here:

(a) **Sukhasana:** Also, known as easy pose, the decent pose, or the pleasant pose. It is a form of asana in which the individual assumes a crossed-legged sitting position. Improves body posture, opens up the hips, strengthens the hips, strengthens the back, and opens the knees and ankles, etc.

(b) **Tadasana:** Which means palm tree, therefore, this asana is also referred to as palm tree pose. It can be used to warm-up before taking on complicated poses. Improves the posture, strengthens the thighs, knees and ankles, makes the buttocks and abdomen firmer, etc.

(c) **Padmasana:** It is another asana in which an individual takes a crossed-legged sitting position. Straightens the spine, corrects body posture, flexibility of the joints and ligaments, etc.

(d) **Shashankasana:** The fourth asana which is very useful for the improvement of the concentration. It is also called hare pose. It brings a feeling of tranquility, calms the nerve and sharpens the mind, enhances concentration and memory and relaxes the nervous system.

8. Enumerate the steps and benefits of Sukhasana and Padmasana.

Ans. **Sukhasana**

Steps:

- Sit down on the floor. Use a yoga mat. Stretch out your legs in front of you.
- Cross your legs. Fold them in such a way that there is enough space to slip in each foot under the opposite knee.
- Your feet should be loose and there should be some space between your feet and pelvis.
- Now sit with your buttocks in a neutral position.
- Your spine should be erect. Relax your body and breathe.

Benefits:

- It is a perfect asana for beginners.
- Apart from calming the mind and stretching the spine, it can broaden the chest and collar bone.
- It gives an overall sensation of peace and quiet, removing mental fatigue and stress.
- It improves body posture, opens up the hips and strengthens the back.
- It also opens the knees and ankle.

Padmasana

Steps:

- It is best to practice 4–6 hours after meals.
- Sit on a flat surface on the ground.
- Gently bend the right knee. With the help of your hands, place it on your left thigh. Make sure your soles are pointing upwards and the heels close to the abdomen.
- Repeat the above step with the other leg.
- Take up a mudra of your choice and place it in a position. The hands should be placed on the knees.
- With your head straight and the spine still erect inhale deeply. Hold the position for a few minutes.

Exhale.

- Repeat the routine with the other leg on top.

Benefits:

- It has a soothing effect on the mind and raises the level of awareness and alertness.
- It straightens the spine and corrects body posture.
- Knees and ankles are effectively stretched while the flexibility of the joints and ligaments are increased.
- Additionally, it alleviates sciatica and menstrual cramps. It strengthens the hips.

9. Briefly explain Tadasana and Shashankasana.

Ans. **Tadasana:** The prefix 'tada' means 'palm tree',

therefore, this asana is also referred to as palm tree pose.It is a simple preparatory asana which can be used to warm-up before taking on complicated poses. Though it can be performed at any time of the day. It is recommended that one should do it 4–6 hours after taking ones meals. (Refer to P-81 for benefits).

Shashankasana

In Shashankasana, the practitioner takes a position that resembles a hare. This asana is therefore called Hare Pose. Shashankasana brings a feeling of tranquility, calms the nerves and sharpens the mind in process. (Refer to P-82 for steps and benefits).

10. Write any five benefits of vrikshsana.

Ans. Benefits of Vrikshasana are:

- This asana helps in stretching the body muscles.
- It helps in relaxing the spinal muscles.
- It improves balance and body stability.
- It improves the body posture.
- It reduces cervical and lumbar pain.

11. Write any four benefits of garudasana. Also, write any one precaution for this asana.

Ans. Benefits of Garudasana are:

- It improves the body posture.
- It improves the balance and stability of the body.
- It improves concentration and mental strength.
- It strengthens the immune system of the body.

Precaution: People having ankle, knee and shoulder problems should avoid this asana.

12. Explain how yog-nidra is performed and what type of benefits it has on the body and mind.

Ans. To perform yog-nidra firstly lie on your back, keeping your posture straight. One can assume shavasana or the corpse pose.

Then close your eyes and relax. Take a few slow and relaxed breaths.

After this begin yog-nidra by gently focusing on your right foot. Hold the attention for a few seconds while relaxing his feet. Then gently move your attention up to the right knee, right thigh and hip. This makes you aware of your whole right leg.

Repeat the above step with the left leg.

Gradually spread your attention to all parts of the body in the lower region such as the stomach, naval groin and then bring it up the chest.

Take your attention to the right shoulder and right arm, palm and fingers.

Inhale deeply observe the sensation in your body and relax in this still state for a few minutes.

After having become aware of your body and surroundings turn to your right side and lie there few more minutes.

Benefits:

It has the following benefits:

- Yog-nidra reduces stress and tension to a large extent.
- It makes us to realize ourselves.
- It establishes a connection with our deeper spiritual self, making us one with our body and instilling a strong sense of tranquility throughout.
- It awakens our creativity, enhances memory retention and increases learning capacity.

D. Value-Based Question

During summer vacations, Neha decided to join a yoga camp with one of her friends, Jenny. Their yoga trainer taught them different asanas like Meditative asanas, Relative asanas and Pranayama.

He told them about the importance of yoga in one's life. "Yoga is nothing but discipline." Yoga helps to become creative, focused and develop positive qualities in life. He suggested them to practice asanas and breathing exercises everyday. He suggested them to live healthy and maintain positive lifestyle by adopting healthy eating habits. After rejoining school, they continue to practice yoga.

They felt some physiological changes as well as psychological changes in them.

Answer the following questions based on the above passage:

1. What do you mean by Meditative Asanas?

2. What is the importance of yoga in our life?

3. What are the values shown by Neha and Jenny during the camp?

Ans.

1. Meditative asanas are the postures to attain peace of mind.

2. The importance of yoga in our life is that it aids us to understand our inner self, gives us lasting peace of mind and appreciation of life.

3. Self care, health consciousness, use of knowledge, etc.

CHAPTER 6

PHYSICAL ACTIVITY AND LEADERSHIP TRAINING

P. 100–103

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. Which one of the following does not qualify as an extended meaning of leadership?

(a) To guide a person or a group

(b) To direct a group with submissiveness

(c) To have good control with proper management over a specific action

(d) To extend a proper supervision to fulfil a definite task

Ans. (b) To direct a group with submissiveness

2. Which one of these qualities is not among those recommended for a good leader?

(a) A leader should enforce his authority over his juniors.

(b) A leader should have a sense of integrity.

(c) A leader should be able to do things in a different way.

(d) A leader should be able to communicate effectively.

Ans. (a) A leader should enforce his authority over his juniors.

3. Which of the following is not taught by physical education and sporting activity?

(a) Social cohesiveness

(b) Spirit of competitiveness

(c) Important characteristics of a follower

(d) Cooperation

Ans. (c) Important characteristics of a follower

4. Which of the following define(s) adventure sports?

(a) Activities that deliver extraordinary challenges

(b) Involve high risk of injury

(c) Exclusively competitive in nature

(d) Both (a) and (b)

Ans. (d) Both (a) and (b)

5. Irfan is travelling to a hill station in the Himalayas during his summer break. Which of these adventure sports is he least likely to get to enjoy during his vacation in the hills?

(a) Trekking (b) Mountaineering

(c) Surfing (d) Paragliding

Ans. (c) Surfing

6. Which of these is not an equipment required for rock climbing?

(a) Harness (b) Knee brace

(c) Paddle (d) Rope

Ans. (c) Paddle

7. River rafting is considered as an ..... sport.

(a) pleasurable (b) extreme

(c) challenging (d) none of these

Ans. (b) extreme

8. Which of the following leadership qualities one does not learn through physical education and sports?

(a) Learning to accept defeat

(b) Cooperating with others to achieve the goal

(c) Using creativity to solve problems

(d) Putting one's personal interest before others'

Ans. (d) Putting one's personal interest before others'

9. According to the safety measures recommended for preventing sports injuries, which of these should not be done?

(a) Keeping oneself hydrated through a game

(b) Continuing to play in extreme pain

(c) Always honouring the decisions of the officials

(d) Performing stretching before the game for warm-up

Ans. (b) Continuing to play in extreme pain

10. Proper hydration of the body is a ..... safety measure.

(a) pre- and during activity

(b) pre- and post-activity

(c) during- and post activity

(d) none of these

Ans. (b) pre- and post-activity

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Adventure Sport	**List II – Safety Equipment Required**
(a) Rock climbing	(1) Parachute
(b) Snorkelling	(2) Harness
(c) Paragliding	(3) Fins
(d) River Rafting	(4) Life jacket

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	3	2	3
(c)	3	1	4	2
(d)	2	4	1	1

Ans. (ii): (a) – 2; (b) – 3; (c) – 1; (d) – 4

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Performing physical activity is the beginning of the development of the leadership quality.

R: Performing physical activity is actually a task of challenging the physical and mental constraints on a daily basis, thereby improving the self-control on the body and improving the mind immensely.

In the context of the two statements given above, 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 the correct explanation of (A).

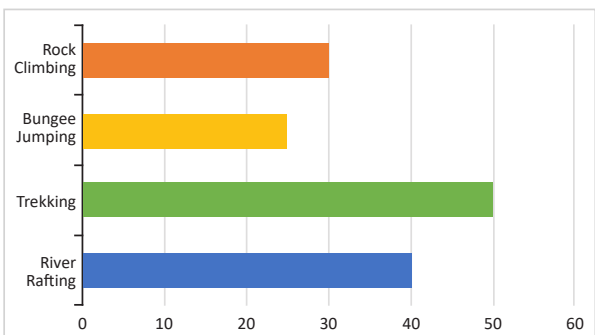
(c) (A) is true, but (R) is false.

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

Given below is a data collected from a city which shows the percentage of people who have undertaken various adventure sports:



On the basis of the chart given above, answer the following questions:

1. Which of the following is the least popular adventure sport?

(a) Trekking (b) River rafting

(c) Bungee jumping (d) Rock climbing

2. Which is the following adventure sport will require a walking stick?

(a) Trekking (b) River rafting

(c) Bungee jumping (d) Rock climbing

3. Which of the following adventure sport is usually done in a group?

(a) Trekking and river rafting

(b) Bungee jumping and rock climbing

(c) Bungee jumping and river rafting

(c) Rock climbing and trekking

Ans. **1.** (c) Bungee jumping; **2.** (a) Trekking;

3. (a) Trekking and river rafting

V. Picture-Based Questions: CBQ

Identify the following adventure sports:

1. 

.....

2. 

.....

3. 

.....

4. 

.....

Ans. **1.** Surfing; **2.** Sky Diving; **3.** River Rafting; **4.** Scuba Diving

VI. Case-Based Questions: CBQ

A boxer suffers from severe muscle cramps and has a history of injuring himself during or after most matches.

On the basis of the case given, answer the following questions:

1. How do you think muscle cramps can be avoided?

(a) Gradual slowing down of the activity

(b) Performing proper warm-up

(c) Proper hydration

(d) All of these

2. Which of the following is an important safety equipment for a boxer?

(a) Shoes (b) Boxing vest

(c) Glasses (d) Mouth guard

3. Which of the following is a pre-activity safety measure that the boxer must undertake?

(a) Perform general warm-up

(b) Perform specific warm-up

(c) Both (a) and (b)

(d) Gradually slow down the activity

Ans. **1.** (d) All of these; **2.** (d) Mouth guard; **3.** (c) Both (a) and (b)

B. Short Answer Type-I Questions 3 marks

1. Explain the role of a leader.

Ans. The role of a leader can be explained as under:

- The role of a leader is to plan and execute the plan smoothly.
- The role of a leader is also to communicate the effectiveness of the policies of the organisations to the workers at various levels.
- The role of a leader is also to integrate and motivate fellow workers towards the accomplishment of a task.
- A leader acts as a bridge between the management and the workforce.
- The role of a leader is to take everyone together to the finishing point of a task and enjoy the success collectively.
- The role of a leader is to support everyone during the execution of any work.
- A leader is a guide, philosopher and a friend for his fellow mates.

2. Explain how physical education helps in creating leaders.

Ans. Physical education is a field which involves a lot of physical activity and sports. It is a very active and dynamic field. It is evident that various professional domains use the component of physical education. Physical activity and sports are to train their professionals to become leaders.

It is, therefore, true that involvement in physical education activities itself is a process of creating a leader. It provides a platform to nurture their innate potential. All the qualities needed for becoming a leader are directly or indirectly inculcated during physical education. In short, physical education prepares an individual holistically. She/he learns to accept defeat, face challenge in life and become a leader.

3. Explain the objectives of adventure sports.

Ans. The objectives of adventure sports are as follows:

- It exposes the students to have a variety of indoor and outdoor sports.
- They also expose students to aquatics, aerial activities, activities related to height and depth.
- They also develop qualities like courage, willpower, strength, confidence, determination, dedication, fighting spirit and self-motivation.

4. Explain the meaning and benefits of trekking.

Ans. Trekking is an activity where people walk on to a specific path for exploring and seeing natural beauty. It is an exhaustive self-exploring walking activity done on hills and mountain ranges.

The benefits of trekking are as under:

- Improves life skills
- Develops the love for nature
- Creates self confidence
- Develops the habit of working consistently
- Prepares one for self exploration
- Develops the attitude of cooperation
- Develops helping attitude
- One gets knowledge and understanding of the socio-economic culture of the trekking area.

5. Write a short note on paragliding and surfing.

Ans. **Paragliding:** It is a spectacular and challenging sport where just like a bird, a person floats above the ground in the air and enjoys the beauty of nature. The sport is recreational as well as competitive in nature. In this sport, the person is termed as the pilot sits in a harness which is suspended below a fabric wing comprising a large number of launching the glider in air where the paragliders wing or canopy is inflated by the air and it moves above the pilot who is suspended below with the help of a network of suspension lines. These suspension lines help the pilot to glide in air, lift and change direction and speed.

Surfing: Surfing is a sport where a surfer rides a wave on a surfing board. When a high wave travels to the shore, the surfer moves on the wave surface by standing or lying on the surfing board and gradually moves sideways or diagonally with the wave to reach the top of the wave. As the wave moves to the shore the surfer too comes to the shore with the wave.

6. Write any three safety measures to prevent sports injuries during pre-activity.

Ans. Three safety measures to prevent sports injuries during pre-activity are:

- Readiness and clarity of the activity should be there.
- Proper warm-up kit to be worn.
- Condition of playground, equipment and environment should be adequate.

7. What safety measures do you suggest to your friend during an activity to prevent sports injuries? Write any three.

Ans. Three suggestions to prevent sports injuries during an activity are:

- Proper playing kit to be worn with all safety measures.
- Proper technique of the skills to be followed.
- Standard playing equipment to be used.

C. Short Answer Type-II Questions 5 marks

1. Briefly explain the role and qualities of a leader.

Ans. The role and the qualities of a leader can be discussed as under:

Qualities of a leader

- A leader should have clarity of thought.
- A leader should have effective communication skills which helps her/him to reach out to every member of a group effectively and convincingly.
- A leader should have a sense of integrity.
- A leader should be a visionary.
- A leader should be a motivator.
- A leader should have the courage to take correct decision at the appropriate time.
- A leader should be innovative and creative.
- A leader should possess strong interpersonal skills.
- A leader should repose faith and trust in her/his group members.
- A leader should respect her/his fellow members.
- A leader should have a sense of humour.
- Commitment is another quality of a good leader.
- A leader should have a positive attitude.

Role of a leader

- A leader plans and executes the plan smoothly.
- His role is to communicate the effectiveness of the politics of the organization to the workers at various levels.
- He is to integrate and motivate fellow workers towards the accomplishment at various levels.
- A leader acts as a bridge between the management and the work force.
- His role is to take everyone together to the finishing point of a task and enjoy the success collectively.
- The role of a leader is to support everyone during the executive of any work.

2. Elaborate the meaning and objectives of adventure sports.

Ans. Meaning of adventure sports

Activities that deliver extraordinary challenges at every step of execution, involve a high risk of injury and may even be life challenging can be termed as adventure sports. This type of sports can be competitive or non-competitive.

The objectives of adventure sports are as under:

- It exposes students to a variety of indoor and outdoor activities.
- They also expose the student community to aquatics, aerial activities, activities related to height and depth.
- They develop qualities such as: courage, willpower, strength, confidence, determination, dedication, fighting spirit and self motivation.
- An important aspect is that a person taps into her/his immense potential and starts understanding what she/he is capable of.
- Adventure activities help a child to be self reliant and independent.
- These activities also help a child to connect to nature.
- They help to develop in human beings the importance of conserving, nature and its importance for our survival.
- Adventure sports develop a challenging attitude which is a pre-requisite in our day-to-day life.
- These sports help in developing a better command of body movements, thought and analytical skills.

3. Explain the types of adventure sports.

Ans. The types of adventure sports can be explained as under:

- **Rock climbing:** It is an activity in which a person climbs a natural or artificial rock surface. Here the person climbs up or sideways or sometimes slightly down.
- **Trekking:** Trekking is an activity where people walk on to a specific path for exploring and seeing natural beauty. It is an exhaustive self-exploring walking activity done on hills and mountains.
- **River rafting:** It is considered as an extreme sport. The degree of challenge of this activity depends upon the movement of water in the river. It is done within inflatable raft on the water surface of a river. This is an outdoor activity.
- **Mountaineering:** It is an activity or sport in which people take up the challenge of climbing various mountains.
- **Surfing:** It is a sport where a surfer rides a wave on a surfing board. When a high wave travels to the shore, the surfer moves on the wave surface by standing or lying on the surface board and gradually moves sideways or diagonally with the wave to reach the top of the wave. As the wave moves to the shore, the surfer too comes to the shore with the wave.
- **Paragliding:** It is another spectacular and challenging sport where just like a bird, a person floats above the ground in the air and enjoys the beauty of nature. The sport is recreational and competitive in nature.

4. Differentiate between trekking and mountaineering.

Ans. We can differentiate between trekking and mountaineering as under:

(a) Trekking is an activity where a person walks onto a specific path for exploring and seeing natural beauty. While mountaineering is an activity or sport in which people take up challenge of climbing various mountains.

(b) Trekking is done to explore new areas, to know the culture and tradition of the people living in those areas and adjust to high attitude adversities and many more life threats. Mountaineering needs for climbing rocks and glaciers, cross snow covered ranges and valleys and adjust to high attitude adversities and many more life threats.

(c) In trekking, the challenges are higher or even life threatening if trekking is done on snow. The same threats prevails while going for mountaineering.

(d) Mountaineering is a long process where people need to adjust to many situations and gradually improve body conditions and increase physical and mental capabilities. But trekkers gradually improve their life skills, love of nature, self exploration, cooperation, helping attitude, knowledge and understanding. The mountaineering is a fight between me and myself.

5. Explain the benefits of adventure sports.

Ans. The benefits of adventure sports are:

- Develops in human beings the importance conserving nature and importance for survival,
- Helps to be self-reliant,
- To develop qualities like: courage, willpower, strength, confidence, determination, dedication, fighting spirit, self motivation,
- Exposes to a number indoor and outdoor sports,
- Exposes to aquatic, aerial activities related to height and depth,
- Helps in developing a challenging attitude,
- Helps the development of better command of body movements, etc.,
- Develops qualities required for performing adventure activities.

6. Explain the need of safety equipment for adventure sports.

Ans. The need of safety equipment in adventure sports is must for the safety of a person either she/he is trained person or not. For example, the need of safety equipment in river rafting is very must along with a life jacket. It serves the one who is a new comer to this sports and saves one to be drowned. It also saves from drowning of those who are trained swimmers also. Generally the equipment needed for river rafting include a swim suit, tennis shoes and socks, life jacket, helmet, waterproof bags, flash light, sunglasses, first aid box, additional clothes, personal medication, cap, camping equipment, etc. Therefore, these equipment are very much needed for adventure sports.

7. Mention any five safety measures to prevent sports injuries for post-activity sports sessions.

Ans. The safety measures to be taken during adventure sports are:

- Mental clarity and preparation before and during performing an activity.
- Proper supervision.
- Performing surface and equipment should be examined before the activity.
- Performing the task with the correct technique.
- Following ethical practices during any sport.
- To avoid any kind of mishap environmental conditions to be taken into consideration.

8. Write short notes on:

(a) paragliding (b) river rafting

(c) surfing (d) rock climbing

(e) trekking

Ans. (a) **Paragliding:** It is a very spectacular and challenging spot where, just like a bird, a person floats above the ground in air and enjoys the beauty of nature.

(b) **River rafting:** River rafting is considered as an extreme sport. The degree of challenge of this activity depends upon the movement of water in the river. Safety equipment are very must along with a life jacket. The fun and challenge of this activity is to manoeuvre through the water current and propel the raft with the help of paddle.

(c) **Surfing:** Indulging in surfing sports, a person develops a good sense of body balance and increases flexibility, endurance and muscular strength. In this sport one needs understand the movement of the sea water or wave and act accordingly.

(d) **Rock climbing:** Rock climbing is an activity in which a person climbs a natural or artificial rock surface. This activity is done on a natural rock as an anchor point during the climbing. The rock climbing is a very challenging activity and in it there are very high chances of injury.

(e) **Trekking:** Trekking is done to explore new areas, to know the culture and tradition of the people living in those areas and enjoy the panoramic beauty of nature. It improves their life skills, love for nature, self-confidence, self exploration, cooperation, etc.

CHAPTER 7

TEST, MEASUREMENT AND EVALUATION

P. 113–116

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. "A test is a tool to evaluate the skill, knowledge, capacities or aptitudes of an individual or a group." Who gave this statement?

(a) John F Kennedy (b) H M Barrow

(c) Webster Dictionary (d) Jack Nelson

Ans. (c) Webster Dictionary

2. What is the systematic assessment of information using criteria governed by a set of standards that provides useful feedback about the performance of a sportsperson called?

(a) Assessment (b) Evaluation

(c) Test (d) Measurement

Ans. (b) Evaluation

3. WHR is the measurement of the .....

(a) wrist circumference divided by height circumference

(b) waist circumference divided by height circumference

(c) waist circumference divided by hip circumference

(d) wrist circumference divided by hip circumference

Ans. (c) waist circumference divided by hip circumference

4. If a person with a height of 1.5 m weighs 75 kg, which of these categories from the BMI chart will apply to him?

(a) Ideal (b) Overweight

(c) Obesity Class I (d) Obesity Class II

Ans. (c) Obesity Class I

5. If a 30-year-old man without any illness has a BMI of 18, which somatotype is he least likely to be among the following?

(a) Endomorph (b) Mesomorph

(c) Ectomorph (d) Data insufficient

Ans. (a) Endomorph

6. Which of the following is not a characteristic of endomorphs?

(a) Difficulty in losing weight

(b) Prone to knee and feet problems

(c) Underdeveloped muscles

(d) Thick bones and muscles

Ans. (d) Thick bones and muscles

7. What is skinfolds measurement?

(a) Manual technique of measuring body fat

(b) Manual technique of measuring body composition

(c) Manual technique of measuring body mass

(d) Manual technique of measuring body weight

Ans. (b) Manual technique of measuring body composition

8. What is the only instrument required for measuring body composition using the skinfold measurement method?

(a) Measuring tape (b) Scissors

(c) Needle (d) Calliper

Ans. (d) Calliper

9. According to the Heath-Carter measurement system for finding out the somatotype of a person, if the three-digit score of an endomorphic person is XYZ, which of the three digits X, Y and Z is likely to be greater than the other two?

(a) X

(b) Y

(c) Z

(d) Any digit can be greater than the other two

Ans. (a) X

10. Which of these health related fitness components can be defined as the proportion of fat and fat-free mass in the body?

(a) Muscular Strength

(b) Body composition

(c) Flexibility

(d) Cardiorespiratory endurance

Ans. (b) Body composition

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Fitness Component	**List II – Measurement Test**
(a) Cardiorespiratory Endurance	(1) Weightlifting
(b) Muscular Strength	(2) Sit and Reach test
(c) Muscular Endurance	(3) Running on Treadmill
(d) Flexibility	(4) VO_2 Max test

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	3	2	3
(c)	3	1	4	2
(d)	2	4	1	1

Ans. (ii): (a) – 4; (b) – 1; (c) – 3; (d) – 2

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: In the field of sports, objectives are set to decide which goals to achieve, and how to motivate and build self-confidence to successfully achieve them.

R: Test, measurement and evaluation are not important factors involved in this process.

In the context of the two statements given above, 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 the correct explanation of (A).

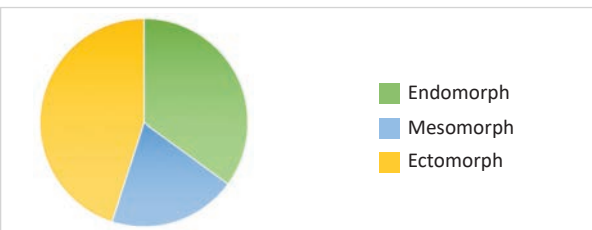
(c) (A) is true, but (R) is false.

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

Ans. (c) (A) is true, but (R) is false.

IV. Data-Based Questions: CBQ

A class of students was divided into three categories and the percentage of each category is as follows:



On the basis of the pie-chart given above, answer the following questions:

1. Which of the following is the least popular adventure sport?

(a) Endomorph (b) Ectomorph

(c) Mesomorph (d) Both (a) and (b)

2. What are the characteristics of the children who fall in Mesomorph category?

(a) Lean (b) Muscular

(c) Fat abdomen (d) Both (a) and (b)

3. A soft and round body shape with short arms, legs and neck is an example of a/an .....

(a) Endomorph (b) Mesomorph

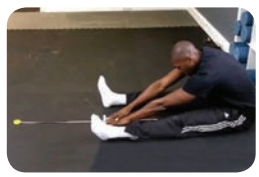
(c) Ectomorph (c) All of these

Ans. 1. (c) Ectomorph; **2.** (d) Both (a) and (b); **3.** (a) Endomorph

V. Picture-Based Questions: CBQ

Identify the following adventure sports:

1.



.....

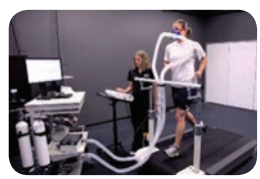
2.

.....

3.

.....

4.



.....

Ans. 1. V-sit Test; **2.** Push-ups; **3.** Partial Curl-up; **4.** VO_2 Max Test

VI. Case-Based Questions: CBQ

The BMI for three adults was calculated to be A – 56; B – 27; C – 13.

On the basis of the case given, answer the following questions:

1. Person 'A' is .....

(a) underweight. (b) normal.

(c) overweight. (d) extremely obese.

2. Person 'B' should workout to .....

(a) increase his BMI to 29.

(b) decrease his BMI to 17.

(c) increase his BMI to 31.

(d) decrease his BMI to 21.

3. What should be the lest ideal BMI for person C?

(a) 32.5 (b) 25.5

(c) 18.5 (d) 15.5

Ans. 1. (d) extremely obese; **2.** (d) decrease his BMI to 21; **3.** (c) 18.5

B. Short Answer Type-I Questions 3 marks

1. Write briefly on the importance of test, measurement and evaluation in sports.

Ans. We can understand the importance of tests, measurements and evaluations in the field of sports and physical education as under:

- **Classification of athletes:** We can classify the athletes as it is very difficult to have all sportspersons having the same physical aptitudes and attributes.
- **Identification of skill sets:** Tests, measurements and evaluations can help trainers to identify an athlete's physical and technical assets and direct them in the right sporting area best suited for their potential.
- **Improvement of performance:** Enable the trainers to redesign the programmes for more effective results.
- **Motivation:** Tests, measurements and evaluations motivate sportspersons from aspiring students to adult professionals by setting and showing records of the levels of their own previous standards as well as the standards of others for competitive purposes.
- **Goal setting:** Test, measurement and evaluation helps in setting goals for the students which involves mental skills such as imagery which in turn can help with skill learning, strategies, presentation and working through competitive anxiety.
- **To predict performance potential:** Using the results made through tests, measurements and evaluations, the performance potential of an athlete can be predicted in advance.
- **For finding out athletes needs:** A training can only be effective when the students' needs are discovered and addressed. Fulfilling these needs will empower them towards both physically and mentally, and push them towards greater achievements.
- **For research purpose:** Tests, measurements and evaluations contribute data to help researchers to develop new techniques, bring further improvement and predict performance in the field of physical education. (any three)

2. How is BMI calculated and what are its uses?

Ans. BMI can be calculated by using the following formula:

$$\text{Body Mass Index} = \frac{\text{Body weight}}{\text{height} \times \text{height}}$$

In this formula the weight of an individual is measured in kilograms and the height in metres. BMI shows how much body weight a person has in relation to their height, which can further demonstrate if their weight is excessive for their stature or lacking. It helps in finding our ideal weight.

3. How is WHR calculated and how can it be used to assess the healthiness of a person?

Ans. WHR means Waist-Hip Ratio. It is the measurement which can be calculated by measuring the circumference of the waist and hips using a measuring tape. The measurements are then used to calculate WHR as under:

WHR = Waist circumference/ Hip circumference

Measurements are taken in inches or centimetres. WHR can be used to assess the risk levels of a person's health with respect to heart diseases, hypertension and type-II diabetes.

4. Briefly explain the somatotypes.

Ans. The number of people inhabiting the earth runs into billions, no two persons have the same physique and physical features – not even identical twins. The differences may be seen in height, weight, distribution of weight, bone structure, muscular build, skin type, etc. It is, therefore, very difficult to have body classification. As per the view of the experts somatotype classification has also proven useful in the field of physical education and sports. Therefore, somatotype describes the present shape and composition of a human body.

5. Discuss the traits of ectomorphs.

Ans. The traits of ectomorphs are:

- Tall and slender, narrow shoulders and hips, flat chest and elongated limb and muscles and has soft and round body shape with short arms, legs and neck. Joints are small.
- Have low fat content.
- Have thin and fragile appearance.
- Have fast metabolism.

6. Briefly describe the skinfolds measurement method for measuring body composition.

Ans. This is a manual technique of measurement of the body composition. In this technique the superficial lower fold of the skin is picked up without piercing and the thickness of the picked skin is measured with the help of a skinfold calliper. Skinfold measurement is an appropriate method for finding out body composition as it is being taken from various sites of the body like

– biceps, triceps, forearms, sub scapularies, suprailliac region, inner thigh, calf and so on. The sum of the skinfold measurements is then tallied with the norms. This is an approximate method because the reading depends upon the mastery of the person taking skinfold measurements.

7. Enlist any three of the components of health related fitness.

Ans. The fitness components that are directly related to health or in other words, whose imbalance will create an ill-effect in the maintenance of good health are termed as Health Related Fitness Components. The three of these components are as follow:

(a) Cardiorespiratory Endurance: VO_2 Max test, Endurance Run/Walk (1 mile), Harvard step test 1 mile Rockport test, 1.6 km run, 12 minute Cooper test, etc.

(b) Muscular Strength: Partial pushups, weightlifting, pull ups, modified pushups, partial curl up, etc.

(c) Muscular Endurance: Sit ups, push ups, pull ups, running on treadmills, etc.

C. Short Answer Type-II Questions 5 marks

1. Describe the importance of test, measurement and evaluation in the field of sports.

Ans. The Importance of tests, measurements and evaluation in the field of sports is:

- Tests, measurements and evaluations can help trainers to identify an athlete's physical and technical assets and direct them in the right sporting area best suited for their potential.
- Tests, measurements and evaluations motivate sportspersons from aspiring students to adult professionals by setting and showing records of the levels of their achievements against their own previous standards as well as the standards of others for competition. These help in setting goals for the students which involves while using mental skills such as imagery which in turn can help with skill learning, strategies, presentation and working through competitive anxiety.
- Using the results made through tests, measurements and evaluations, the performance potential of an athlete can be predicted in advance.
- Tests, measurements and evaluations contribute data to help researchers to develop new techniques, bring further improvement and predict performance in the field of physical education.

2. What is BMI? Explain the method of calculating BMI.

Ans. BMI is a statistical measurement which uses an individual's height and weight for comparison so that their healthiness can be determined.

The BMI can be calculated using the following method:

$$\text{Body Mass Index (BMI)} = \frac{\text{Body weight}}{\text{Height} \times \text{Height}}$$

In this formula, the weight of an individual is measured in kilogram and the height in metres. For example, the weight of a person is 60 kg and height is 1.65 m.

$$\text{So, BMI} = \frac{60 \text{ kg}}{1.65 \text{ m} \times 1.65 \text{ m}} = 22.03 \text{ kg/m}^2.$$

Thus, the BMI of the person is 22, which is ideal.

3. Write an essay on the three somatotypes described by W H Sheldon.

Ans. The three somatotypes classified by W H Sheldon are:

- **Endomorphy:** It is a characterized by a soft and round body shape with arms, legs and neck. They have a wide bone structure and their body fat is distributed mainly on the arms and thighs. The upper half of the arms and legs are thicker than the lower halves.

  It usually finds difficult to lose weight and are greater risk of becoming obese as their metabolism is lower and thus capacity of fat storage is higher than other body. Their muscles are underdeveloped and hidden under layers of fat. They are prone to knee and feet problems.
- **Mesomorphy:** The person is lean and muscular with a flat abdomen. The shoulders are broad, their arms and legs are proportionate and their bones and muscles are thick.

  These are able to build muscles quickly and with greater ease. Their body fat is low and evenly distributed. These have strong and agile bodies, good metabolism and respond well to exercise.

  These can do strong cardio workouts, unlike endomorphs and apply themselves to all types of power sports.
- **Ectomorphy:** They have low fat content which is responsible for their thin and fragile appearance and find it difficult to gain weight and muscle mass due to fast metabolism.

Their joints are small.

The sports suitable for them are badminton, tennis, table tennis, gymnastics, track and field, etc.

4. What are the differences between endomorphy and mesomorphy?

Ans. The difference between endomorphy and mesomorphy is that an endomorphy is characterized by a soft and round body shape with short arms, legs and neck. While mesomorphs have strong and agile bodies, good metabolism and respond well to exercise, attributes that fit the physiology of a sportsperson. A mesomorph is lean and muscular with a flat abdomen while an endomorph is characterized by a soft and round shape with short arms, legs and neck. Endomorphs have a wide bone structure and their body fat is distributed mainly on the arms and thighs while a mesomorph can do strong cardio workouts unlike endomorphs and apply themselves to all types of power sports.

5. Briefly explain the Heath-Carter somatotype measurement system with the help of a somatograph.

Ans. Heath-Carter measurement system is used for finding out the somatotype of a person. It includes ratings for all three somato-types and it uses a range of anthropometric measurements in its calculation.

An individual is classified on a scale of 1 to 7 in each category, with 1 being the minimum rating and 7 being the maximum rating.

The three ratings together give a somatotype number, with endomorphy being the first score, followed by mesomorphy and ectomorphy.

Scores are plotted in a shield diagram, also known as somatography which represents the somatotype of the individual on a two dimensional scale.

It can be said that all individuals have some combination of all the three somatotypes to a certain degree. If an individual has a score of 361 on the somatograph, it includes that they are a mesomorph since 6 is a higher score than 3 or 1.

By using the results of a somatograph, athletes can be matched with suitable sports types. For example a statistic of 375 is suitable for a footballer and 172 for bodybuilder.

CHAPTER 8

FUNDAMENTALS OF ANATOMY, PHYSIOLOGY AND KINESIOLOGY IN SPORTS

P. 132–135

A. Objective Type/ Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. The study of how living systems function is called .....

(a) psychology (b) physiology

(c) kinesiology (d) radiology

Ans. (b) physiology

2. Boxers are advised to keep their feet apart during a bout inside the ring to maintain balance. Which of these factors is influenced by keeping the feet apart?

(a) Friction is increased.

(b) Vertical distance of the COG from the base of support is decreased.

(c) Area of base of support is increased.

(d) Weight of the boxer's body is increased.

Ans. (c) Area of base of support is increased.

3. Aerobic exercise programmes can help increase the muscular strength of a person. This is an example of which principle of kinesiology?

(a) Adaptation through exercise

(b) Neuroplasticity

(c) Motor redundancy

(d) None of these

Ans. (a) Adaptation through exercise

4. Which of these is not one of the classifications of bones based on shape and formation?

(a) Flat bones (b) Regular bones

(c) Sesamoid bones (d) Short bones

Ans. (b) Regular bones

5. What are immovable joints also called?

(a) Synarthrosis (b) Amphiarthrosis

(c) Synchrondrosis (d) Diarthrosis

Ans. (a) Synarthrosis

6. Which of these joints of the human body is an example of a hinge joint?

(a) Wrist joint (b) Hip joint

(c) Knee joint (d) Thumb joint

Ans. (c) Knee joint

7. Pharynx, larynx and diaphragm are a part of which system?

(a) Skeletal system

(b) Cardiovascular system

(c) Respiratory system

(d) Circulatory system

Ans. (c) Respiratory system

8. Which of these is not one of the functions of muscles in the human body?

(a) Protection of organs of the body

(b) Regulation of body temperature

(c) Storage of calcium

(d) Circulation of blood

Ans. (c) Storage of calcium

9. Which part of the human respiratory system is also known as the 'windpipe'?

(a) Trachea (b) Larynx

(c) Bronchi (d) Pharynx

Ans. (a) Trachea

10. Which part of the human body can cover the distance around the earth twice, if laid end to end two times?

(a) Skin cells (b) Blood vessels

(c) Epicardium (d) Atriums

Ans. (b) Blood vessels

11. What are the two sub-categories of equilibrium based on the position of centre of gravity?

(a) Static and dynamic

(b) Stable and potential

(c) Physical and mental

(d) Unstable and neutral

Ans. (a) Static and dynamic

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Types of Bones	**List II – Name**
(a) Long Bone	(1) Tarsal
(b) Flat Bone	(2) Sternum
(c) Sesamoid Bone	(3) Femur
(d) Short Bone	(4) Patella

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	3	2	3
(c)	3	1	4	2
(d)	2	4	1	1

Ans. (iii): (a) – 3; (b) – 2; (c) – 4; (d) – 1

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Kinesiology is not really important in sports and physical education.

R: Using Kinesiology, exercise methods can be evaluated and altered for better performance and safety.

In the context of the two statements given above, 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 the correct explanation of (A).

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

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

Ans. (d) (A) is false, but (R) is true.

IV. Data-Based Questions: CBQ

A class was being taught about the functions of circulatory system:

On the basis of the pie-chart given, answer the following questions:

1. Which of the following gases does circulatory system throw out of our body?

(a) CO (b) Hydrogen

(c) CO_2 (d) Nitrogen

2. What is the ideal pH range in our blood plasma?

(a) 4 to 6 (b) 3.5 to 5.5

(c) 5.5 to 7.5 (d) 7.35 to 7.45

3. A rise in body temperature is controlled by the blood vessels close to the .....

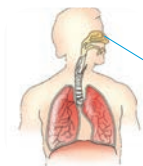
(a) body surface (b) heart

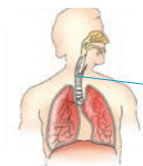
(c) respiratory system (d) all of these

Ans. 1. (c) CO_2; **2.** (d) 7.35 to 7.45; **3.** (a) body surface

V. Picture-Based Questions: CBQ

Identify the following parts of the respiratory system:

1.  .....

2.  .....

3.  .....

4.  .....

Ans. 1. Nasal Cavity; **2.** Trachea; **3.** Lungs; **4.** Diaphragm

VI. Case-Based Questions: CBQ

'Balance' in sports is another word for 'stability'. The degree of stability is influenced by a number of factors such as:

- **Area of Base Support**
- **Vertical Distance of the COG from the Centre of the Base of Support**
- **Location of the COG**
- **Horizontal Distance of the COG from the Direction of Movement**
- **Weight of the Body**
- **Friction**

On the basis of the information given above, answer the following questions:

1. Stability is directly proportional to ..... from the edge of the base towards the given direction of movement.

(a) vertical speed of the COG

(b) horizontal speed of the COG

(c) vertical distance of the COG

(d) horizontal distance of the COG

2. Why do different sports have different weight categories?

(a) because stability is inversely proportional to the mass of the body

(b) because stability is directly proportional to the mass of the body

(c) because stability is inversely proportional to the weight of the body

(d) because stability is directly proportional to the weight of the body

3. When there is insufficient friction between two bodies there is ..... chance of slipping and therefore .....

(a) lesser; less stability

(b) greater; more stability

(c) greater; less stability

(d) lesser; more stability

Ans. **1.** (d) horizontal distance of the COG; **2.** (d) because stability is directly proportional to the weight of the body; **3.** (c) greater; less stability

B. Short Answer Type-I Questions 3 marks

1. How does anatomy differ from physiology?

Ans. The difference between the two can be enumerated as under:

- **Anatomy:** It is the study of the structure of living organisms. It is derived from two Greek words *ana* and *tomia*. Ana means up and tomia means cutting. Therefore, the word anatomy means cutting up, which implies that the focus of anatomy is not just the body that we see outside but the internal placement and arrangement of organs, tissues, bones, muscles, etc. of that body.
- **Physiology:** On the other hand, physiology is the study of how living systems function. 'Physiology' studies the nature while anatomy studies the physical aspects of body components, unravels the function of those components and their interrelationship.

2. What is the importance of kinesiology in sports and physical education?

Ans. Kinesiology is very important in sports and physical education.

We can illustrate the importance as follows:

- It is an inclusive subject that covers personal public and environmental health. A lot can be learned about the nature of motor functions through familiarization with this subject.
- Kinesiology involves applications of biomechanics, anatomy, physiology and psychology to examine how the human body responds to physical activity.
- It focuses on the acquisition and development of motor skills.
- Kinesiology improves the area of rehabilitation from sport related injuries as well as therapeutic application of physical exercises.
- With the use of kinesiology, exercise methods can be evaluated and altered for better performance and safety.
- It can be applied to regulate our sleeping habits, reinforce our immune system, enhance body functions brings an overall positive change to our well-being.

3. How is the skeletal system classified?

Ans. Skeletal system can be classified as under:

It is a combination of all bones in the body together with the structure that supports them. The adult human body has 206 bones of various shapes and sizes joined together by tendons, ligaments and cartilage.

- **Axial skeleton:** It consists of the vertebral column, the rib cage and the skull. It is responsible for maintenance of upright posture carrying the weight from the head to the hip points. It has a total of 80 bones in the axial skeleton: skull 28, vertebral column 26, hyoid bone 1, sternum 1 and ribs 24.
- **Appendicular skeleton:** It consists of the upper and lower limbs and pectoral and pelvis girdles. Their functions are to make movements of the limbs possible in addition to protecting internal organs. They are a total of 126 bones – upper limbs 64 and lower limbs 62.

4. What are the functions of the skeletal system?

Ans. The functions of the skeletal system are:

- **Locomotion:** It is closely associated with skeletal muscles which are attached to them by tendons and ligament. Together they make movement of the body possible.
- **Support:** It lends support to the whole body.
- **Protection:** Bones like the skull and pelvis protect vital organs.

- **Calcium storage:** Bones and teeth store most of the calcium supply of the body.
- **Acting as levers:** Our bones are the levers of our body.
- **Endocrine regulation:** The bones cells release a hormone called osteocalcin. It controls regulation of glucose and fat deposition.

5. How are bones classified?

Ans. Bones can be classified on the basis of their shape and formation as under:

- **Long bones:** These bones are found mainly in the upper and lower limbs. They have a long shaft and two expanded ends on each side. The shafts have a cavity where bone marrows can be found.
- **Short bones:** These bones are found in the wrist and ankle. They are short and have geometrical shapes.
- **Flat bones:** These are protective bones which resemble shallow plates.
- **Sesamoid bones:** These bones are small and independent which take the form of nodules attached to tendons and joint capsules.
- **Irregular bones:** These bones like vertebra, hip and at the base of the skull do not have well defined shapes and are known as irregular bones.

6. How would you differentiate between the skeletal system and bones?

Ans. The skeletal and bones can be differentiated as under:

The skeletal system is a combination of all the bones in the body together with the structures that support them. The adult human body has 206 bones of various shapes and sizes. They are joined together by tendons, ligaments and cartilage. This system is further divided into two more types like axial skeleton consisting of the vertebral column, the ribs cage and the skull. It is responsible for the maintenance of upright posture, consisting of the upper and lower limbs, and pectoral and pelvic girdles. Their functions are to make movements of the limbs possible. We can say that bones jointly form the skeletal system.

7. How do muscles regulate body temperature?

Ans. Skeletal muscles help our body to retain its internal temperature when exposed to condition that might lower it. When it gets suddenly cold, our body starts shivering. This is a sign of skeletal muscles contracting to produce heat inside the body. Smooth vessels of the blood vessels restrict supply of blood to the skin so that loss of body heat on the surface is limited. In the opposite situation, these muscles relax to increase blood flow and loss of heat through the surface.

8. Why is it better to breathe through the nose than through the mouth?

Ans. Yes, it is better to breathe through nose than through the mouth for the reason that the nasal cavities have coarse hair that trap dust particles entering through the nostrils. Mucus also contain enzymes capable of killing certain bacteria and viruses. Besides, the nostrils slow down the escape of air to enable our lungs to extract more air.

9. What are the functions of respiratory system?

Ans. The functions of respiratory system are:

- To implement inhalation and exhalation and thus obtain oxygen and eliminate carbon dioxide and excess water from the body.
- To produce energy inside the body using oxygen.
- To produce sound through the vibration of the vocal chords.
- To enable olfaction, i.e. the detection of smell.

10. How do the circulatory and respiratory systems work together?

Ans. The circulatory and the respiratory are the two important systems which work together. When we inhale air, it contains oxygen, CO_2 and other gases. When we exhale CO_2 is flushed out by the circulatory system. It also collects toxins and metabolic wastes. So, respiration takes place with the help of circulatory system.

11. Briefly describe the heart.

Ans. The heart is a hollow four-chambered muscular organ responsible for the pumping of blood. It also helps in the removal of waste products like CO_2 and reduction of lactic acid and acid phosphate.

The heart has the shape of a cone and is as large as a fist. The average size is 12 cm in length, 8 cm wide and 6 cm thickness. The heart is located in the thorax between the lungs, behind the sternum. There are three layers in the wall of the heart. The heart is divided into two sides by a partition known as interventricular septum.

There are four chambers, two on each side. The upper chambers are called atriums while the lower chambers are called ventricles.

12. How do arteries differ from veins?

Ans. Arteries make up one of the three vessels through which blood is carried throughout the body. They transport blood from the heart to the body. Veins are different from arteries in many ways. Veins perform the opposite function with the exception of pulmonary veins, they transport deoxygenated blood to the heart from the rest of the body. Arteries do not collapse in size in the absence of blood but veins collapse. Arteries do not have valves but veins have. Like arteries veins also have the three layers of tunica intima, tunica media and tunica adventitia.

13. What are the different types of capillaries?

Ans. Capillaries can be classified into three types based on the structure of their endothelial cells.

- **Continuous capillaries:** Defined as continuous due to the interrupted lining made up by their endothelial cells, they are found abundantly in all types of muscles, connective tissues, lungs and the central nervous system.
- **Fenestrated capillaries:** These capillaries have pores that allow large molecules to pass through and are found mostly in the renal organs, endocrine glands and intestines, where widespread molecular exchange with blood occurs.
- **Sinusoidal capillaries:** They are discontinuous and have open pores to perform large molecules like proteins and blood cells to pass between the blood and the tissue. They are found in the liver, spleen, bone marrow, lymphoid tissues and some endocrine glands.

14. Write a short note on the lymphatic system.

Ans. Lymphatic system is not a part of the closed circulatory system of the human body. It is an open sub-system, the function of which contributes to the efficient running of the cardiovascular part of circulation and to the strength of the immune system in general.

The lymphatic system primarily transports 'lymph' an interstitial fluid containing leftover WBCs and other materials. Approximately 20 litres of blood is processed through the human circulatory system in a day. Capillaries filter of this blood and extract RBCs. About 17 litres of the filtered plasma is reabsorbed by the blood vessels for pulmonary circulation, while the lymphatic system as 'lymph'. The lymphatic system is made up of lymphatic vessels. They carry the leftover plasma to the lymph nodes, where it is filtered to build WBCs.

15. Write down the functions of the circulatory system.

Ans. The circulatory system performs the following five important functions:

- **Transportation of oxygen:** The most important function of the circulatory system is the non-stop transportation of oxygen, essential nutrients and hormones to the rest of the human body. It energies the body, gives it strength and with the correct application of hormones regulates moods and elevates the recovery process.
- **Stabilisation of pH balance:** The pH range in our blood plasma and interstitial fluids must lie between 7.35 to 7.45 in order to maintain a healthy immune system. When the blood becomes too acidic, alkaline buffers are released into the blood streams and when alkalinity increases, acidic buffers are released.
- **Maintenance of body temperature:** A rise in body temperature is controlled by the blood vessels close to the body surface. They dilate to increase their size and release excess heat through the skin. If body temperature drops, these blood vessels contract to restrict flow of blood and thus reduce loss of heat through the skin.
- **Removal of waste product:** CO_2 is not the only waste product flushed by the circulatory system. It also collects toxins and metabolic waste and delivers them to the liver and kidney for ejection from the body.
- **Boosting the immune system:** By releasing hormones and WBCs at the injured sites, the circulatory system also boosts the resistance of our body and protects us from diseases.

16. Discuss the three types of circulation performed by the heart.

Ans. The three types of circulation performed by the heart are:

- **Pulmonary circulation:** In this circulation the deoxygenated blood is carried from the heart to the lungs for oxygenated blood. The right atrium passes blood into the right ventricle which contracts and then sends

the blood to the pulmonary artery. Here the blood gets divided into two streams and transferred to the two lungs. It separates into pulmonary capillaries where oxygenation occurs and the CO_2 in the blood is left behind. Four veins formed by the combination of pulmonary capillaries bring the blood back to the heart. The oxygenated blood is ready for systemic circulation.

- **Systemic circulation:** It carries functional blood to all body tissues. The oxygenated blood is pushed from the left ventricle to the aorta, the largest artery in the body and after that it travels through the systematic arteries. As arteries are narrow vessels, blood flow experiences a pressure of resistance. The blood then arrives at the capillary beds and gets supplied to body tissues. The thin walls of the capillaries enable easy exchange between the blood and the cells. After picking up waste products and CO_2 from the tissues, the deoxygenated blood returns to the right atrium through a system of veins for pulmonary circulation. These two circulations together make up cardiovascular circulation.
- **Coronary circulation:** A third circulation of blood also takes place within the heart itself. During diastole blood is forced into two coronary arteries arising from the aorta. These arteries deliver oxygenated blood to the myocardium. The deoxygenated blood is picked up by coronary veins which converge to form coronary venous sinus. Since this sinus drains into the right atrium, the deoxygenated blood is prepared for pulmonary circulation.

17. Describe the structure of arteries.

Ans. Arteries do not have a uniform size and structure. Arteries make up one of the three vessels through which blood is carried throughout the body. They transport oxygenated blood from the heart to the body. Each artery has three layers like:

- **Tunica intima:** The inner layer lined by endothelium which is a smooth tissue that minimizes friction.
- **Tunica media:** A muscular layer that performs the contraction and dilation of the tube, allowing blood to pass through at the required pressure.
- **Tunica adventitia:** This layer is composed of fibres of elastic and collagen. It supplies the walls of the tube with nerves and anchors it to nearby tissue.

18. What are the different categories of arteries?

Ans. The different categories of arteries are:

- **Conducting arteries:** These are also known as elastic arteries due to high content of elastin fibres. These arteries are found near the heart. Their diameter can range from 2.5 cm to 1 cm. The largeness in size and elasticity allows blood to pass more freely and continuously.
- **Muscular arteries:** These arteries are of medium size and distribute blood to various organs of the body. They are known as distributing arteries also. Internal diameter ranges from 1 cm to 0.33 mm.
- **Arterioles:** They are the smallest arteries. They have internal diameter from 0.3 mm down to 10 µm. They control the blood pressure in the body.

19. Explain the meaning and types of equilibrium.

Ans. A body is said to be in equilibrium when all the forces acting on it are counterbalanced by equal and opposite forces and their sum becomes equal to zero. A state of equilibrium is also achieved when the body's centre of gravity is over its base of support and the line of gravity falls within the base. There can be two types of equilibrium like:

- **Static equilibrium:** Equilibrium is achieved when the centre of gravity is resting or stable position like: sitting and standing.
- **Dynamic equilibrium:** Equilibrium is achieved when the centre of gravity is in motion like: running and doing cartwheels, etc.

20. Explain two factors that influence the centre of gravity.

Ans. A body's centre of gravity is the point at which its weight is evenly distributed and all sides of the body are in balance. It is an imaginary albeit an important point where the entire mass of the body can be located. Centre of gravity of a person standing erect with hands at the side is located at the hips but it is difficult to determine for most positions.

C. Short Answer Type-II Questions 5 marks

1. Briefly discuss the importance of anatomy and physiology in sports and physical education.

Ans. The importance of anatomy and physiology in sports and physical education are:

- It gives the knowledge of human body.
- It helps in the selection of sports.

- It helps in the prevention of sports injuries.
- Augmenting rehabilitation and first aid.
- Preparation of training programmes.
- Understanding the differences between male and female.
- Correct sports massage therapy.
- Proper physical fitness development.
- Cultivating a culture of knowledge.

2. Discuss the concept and application of kinesiology.

Ans. Kinesiology is the study of movements, whether of the human body or that of non-human animals. The word is a combination of the Greek word for 'movement' (*Kinesis*) and study (*logos*). It is a multifaceted subject which covers an array of sub-disciplines such as, psychology of physical activity, biomechanics, exercise physiology, history of physical activity, measurement of physical activity. Motor development, motor learning and control, philosophy of physical activity, physical activity and public health, physical education pedagogy, etc. Kinesiology is applied in strength training, sports conditioning, physical and occupational therapy and occupational health and safety.

3. Explain the classification of the skeletal system and bones.

Ans. The classification of the skeletal system and bones are:

- **Axial skeleton:** This system consists of the rib cage and the skull. It is responsible for maintenance of upright posture, carrying the weight from the head to the hip joint.
- **Appendicular skeleton:** It consists of the upper and lower limbs, and pectoral and pelvic girdles.

The classification of the bones:

- **Long bones:** These type of bones are found in the upper and lower limbs. They act as levers and execute movement. They have a long shaft and two expanded ends on each side.
- **Short bones:** These are found in the wrist and ankle. They are short and have geometrical shapes.
- **Flat bones:** These are protective bones which resemble shallow plates.
- **Sesamoid bones:** These are small and independent bones which take the form of nodules attached to tendon and joint capsules.
- **Irregular bones:** Bones such as vertebra, hip, bones and bones at the base of the skull.

These do not have defined shape and are known as irregular bones.

4. Describe the classification of joints.

Ans. Joints are classified into three groups. They are:

- **Immovable joints:** These joints are known as synarthrosis joints also. These include skull sutures, facial bones except the mandible and the joint between the first pair of ribs and the sternum. They are sometimes called fibrous joints as they are connected by fibrous tissues.
- **Slightly movable joints:** These joints unite bones with cartilage which give them another name cartilaginous joints. They are further divided into two types: Symphysis which connects two long bones with a broad, flat disc fibrocartilage. Synchrondrosis which are found in the epiphyseal plates of growing bones in children.
- **Freely movable joints:** These joints are freely movable as they have a cavity filled with synovial fluid between the adjoining bones. These bones are further divided into joints like: gliding joints, hinge joints, condyloid joints, saddle joints, ball and socket joints and pivot joints.

5. Write on the properties and function of muscles.

Ans. Properties and function of muscles can be described as under:

- **Excitability:** The responsiveness of muscle cells to stimulation by nerves and hormones is called excitability of muscles.
- **Contractility:** It is the ability of voluntary/ skeletal muscle cells to contract forcefully when stimulated.
- **Extensibility:** Muscles cells have the ability to extend or stretch themselves.
- **Elasticity:** This property enables muscles to return their normal resting length and shape after contraction and extension. Without this ability, muscles would lose their vigour.

Functions:

- **To produce physical movement of every kind:** Muscles make all kinds of physical movements happen – from the swallowing of food to the twitching of an eye.
- **To maintain body posture:** It provides the framework. It is the muscle that holds

numerous bones together and support them to give shape of the human body.

- **To protect organs of the body:** Muscles work together with the ribs and the spine to keep internal organs like those in the abdominal safe.
- **To circulate blood:** Cardiac muscles pump blood throughout our body, taking it to the lungs for oxygenation and then aiding in the distribution of oxygenated blood to the other areas of the body.
- **Execute internal organ function:** Though we are generally not aware of it, involuntary muscles work hard for the smooth functioning of internal organs.
- **Regulating body temperature:** Skeletal muscles help our body retain its internal temperature when exposed to conditions that might lower it. When it gets suddenly cold, our body starts shivering. This is a sign of skeletal muscles contracting to produce heat inside the body.

6. Write a note on the various parts of the respiratory system.

Ans. The various parts of the respiratory system are:

- **The nose:** It is an organ involved in both respiration and smelling. We use it to breathe in and out. It consists of an external part which includes the triangular framework of bone and cartilage covering the skin.
- **Pharynx:** The pharynx can be found behind the nasal cavity and the mouth. It is attached to the base of the skull and surrounding area by thick muscular fibres and connective tissues. Its circular muscle fibres push food from the mouth to the oesophagus and prevent swallowing of air. The longitudinal muscle fibres lift the walls of the pharynx during swallowing. It serves as a part of digestive system too.
- **Larynx:** It is located in the front part of the neck and directs air into the respiratory organ. Since it is responsible for the production of the sound, it is also known as voice box. It is composed of three large and unpaired cartilages, three paired and smaller cartilage and intrinsic muscle.
- **Bronchi:** The left and right bronchi reduce in size and branch into smaller tubes called the bronchioles as they enter the lungs. They are responsible for conducting air into the lungs. The right main bronchus is broader, shorter and more vertical than the left main bronchus.
- **Diaphragm:** It is also called the thoracic diaphragm. It is a dome-shaped sheet of muscles and tendons. It extends across the bottom of the rib cage and separates the chest from the abdomen. As air enters the lungs, the muscles in the diaphragm contract and pull the central tendon inferiorly into the abdominal cavity. This enlarges the thorax and allows air to inflate the lungs.
- **The lungs:** The lungs are located in the chest, with their resting on the floor of the thoracic cavity on the diaphragm. The two lungs differ in size. The left lung has a smaller size to accommodate the heart, while the right lung is shorter to make room for the liver. A residual volume of 1000 to 1200 mL of air is stored in the lungs at all times. There are three lobes in the right lung and two in the left lung. The total area of these lobes exceeds that of the parent bronchus, thereby enabling air to flow inside the lungs with great ease. The pleura membrane lines the lungs and the thoracic walls and the diaphragm. The pleura cavity between these two surfaces contains only a thin film of fluid. Air in the pleural cavity can cause the lungs to collapse.

7. Discuss the two types of respiration.

Ans. The two types of respiration are:

- **External respiration:** It is the stage in which O_2 is taken into the body from the air. It enters through the nose, trachea and bronchi and when it reaches the pulmonary alveoli, it is absorbed into the blood in the pulmonary capillaries. It is separated from the blood by single membrane and absorbed by RBCs in the haemoglobin. After that, it is transported through the heart which further distributes it to the rest of the body. At the same time, CO_2 is separated by the membrane and expelled through the alveoli to finally exit the body through the bronchi, trachea in the nose.
- **Internal respiration:** It is the trading of O_2 and CO_2 at the tissue level. O_2 passes from the blood into the tissue fluid, and eventually the tissue cells, while CO_2 takes the reverse route. It passes from the tissue cells into the tissue fluid, then finally mixes with blood. While external respiration occurs in the lungs, internal respiration occurs in the cells.

8. Discuss the circulatory system and its components.

Ans. The circulatory system is a vital network of organs and vessels that work together to transport blood, nutrients, hormones, oxygen, antibodies and lymph throughout the body. By continuously supplying these substances and removing waste products such as carbon dioxide, it maintains homeostasis and fights diseases. The components of circulatory system are:

- Heart
- The three vessels
- Lymph system

9. Give a detailed explanation about centre of gravity and its applications in sports.

Ans. Centre of gravity is the point at which its weight is evenly distributed and all sides of the body are in balance. It is an imaginary though an important point where the entire mass of the body can be located.

The COG of a person standing erect with the side is located at the hips.

COG forms the bases of many scientific studies of sports mechanics and developments and upgrade of techniques. Understanding these concepts is advantageous for gymnasts, runners, footballers, weightlifters and a host of various other sportspersons, as they give an idea of how to increase their speed and minimize physical effort, etc.

10. How can the principles of stability be used in sports?

Ans. Principles of stability can be applied in the sports as under:

- Area of base of support
- Distance of the COG from the centre of the base of support
- Location of the COG
- Horizontal distance of the COG from the direction of movement
- Weight of the body
- Friction.

(Refer to pages 130–131 of the textbook)

CHAPTER 9
PSYCHOLOGY AND SPORTS

P. 145–148

A. Objective Type/Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. Which of these branches of science deals with the study of behaviour?

(a) Kinesiology (b) Physiology

(c) Psychology (d) Anatomy

Ans. (c) Psychology

2. "Sports psychology explores one's behaviour in athletics." Who gave this statement?

(a) Singer (b) John Lauther

(c) Clark and Clark (d) K M Burns

Ans. (a) Singer

3. The mental aspects used in sports psychology are:

(a) energy, balance, focus, flow and motivation.

(b) imagery, focus, simulation and stability.

(c) energy, balance, focus, simulation and stability.

(d) imagery, focus, simulation, flow and motivation.

Ans. (d) imagery, focus, simulation, flow and motivation.

4. What aspect of sports psychology involves training a person in an environment that imitates the actual conditions the player will face during a competition?

(a) Simulation (b) Stimulation

(c) Simucation (d) Simulcasting

Ans. (a) Simulation

5. Which of these is not one of the correct ways to manage problems faced by adolescents?

(a) Encouraging them to get involved in physical activities

(b) Ordering them to resolve their issues

(c) Instructing parents and teachers on engaging constructively with them

(d) Discussing their concerns with them in a safe environment

Ans. (c) Instructing parents and teachers on engaging constructively with them

6. Seventeen-year-old Derek has always been known for his healthy habits. However, after moving to a hostel, he saw that his new friends would stay up late every night and then bunk classes. Derek didn't want to stand out as an odd person, so he began doing it too. As a result, his grades began suffering. Which of the problems faced by adolescents is this an example of?

(a) Physiological changes

(b) Peer pressure

(c) Clash between expectation and reality

(d) Hero worship

Ans. (b) Peer pressure

7. Which term related to growth and development refers to the passing of traits from parents to their offspring?

(a) Puberty (b) Infancy

(c) Sexuality (d) Heredity

Ans. (d) Heredity

8. Which of the following is not a stage in growth and development?

(a) Infancy (b) Childhood

(c) Middle-age (d) Adolescence

Ans. (c) Middle-age

9. The word adolescence means .....

(a) to become an adult (b) to grow up

(c) to gain legal rights (d) both (a) and (b)

Ans. (d) both (a) and (b)

10. Developing healthy eating and exercise habits at adolescence age is a foundation for ..... in adulthood.

(a) good health

(b) emotional wellbeing

(c) sexual development

(d) emotional challenges

Ans. (a) good health

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Age Group	List II – Activity
(a) 0–2 Years	(1) Activities requiring cognitive skills
(b) 5–9 Years	(2) Activities focusing on muscle development
(c) 10–12 Years	(3) Activities focusing on motor skills
(d) 13–19 Years	(4) All sorts of sports

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	3	4
(b)	1	3	2	3
(c)	3	1	4	2
(d)	2	4	1	1

Ans. (ii): (a) – 2; (b) – 3; (c) – 1; (d) – 4

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: A strong body must be accompanied by a strong mind to succeed in sports.

R: With the application of sports psychology, the player's strengths and weaknesses can be assessed and their sense of positivity can be amplified by instilling self-confidence and a healthy awareness of their own potential.

In the context of the two statements given above, 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 the correct explanation of (A).

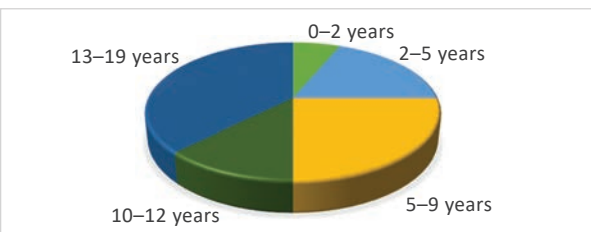
(c) (A) is true, but (R) is false.

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

A housing society had children of various age groups, the numbers have been given below:



On the basis of the pie-chart given above, answer the following questions:

1. What are the children falling in the 2-5 Years category called?

(a) Toddlers (b) Children

(c) Infants (d) Kids

2. What sort of activities do the children in the age group of 5–9 years indulge in?

(a) Catching, hitting and bouncing

(b) Reaching, rolling and sitting

(c) Running, hopping and striking

(d) Hiking, trekking and swimming

3. Which age group faces the problems of peer pressure, emotional and physiological changes?

(a) 13–19 Years (b) 2–5 Years

(c) 5–9 Years (d) all of these

Ans. **1.** (c) Infants; **2.** (c) Running, hopping and striking;
3. (a) 13–19 Years

V. Picture-Based Questions: CBQ

Identify the activities and write the age group for which they are best suited:

1. 

.....

2. 

.....

3. 

.....

4. 

.....

Ans. **1.** Playing Badminton - Child (10–12) Years;
2. Sitting - Infant (0–2) Years;
3. Trekking - Teenager (13–19) Years;
4. Striking for Accuracy - Child (5–9) Years

VI. Case-Based Questions: CBQ

Of late a teenage boy has been behaving erratically. On the basis of the information given, answer the following questions:

1. What could be some of the possible reasons for such a behaviour?

(a) Emotional changes

(b) Clash between expectations and reality

(c) Struggle with self esteem

(d) All of these

2. Which of the following is a not a way of managing problems faced by adolescents?

(a) Involvement in physical activities

(b) Instruction in morals and ethics

(c) Creation of a suitable environment for learning

(d) Throwing back-to-back challenges

3. What should be done to channelise the boy's energy in the right direction?

(a) Encourage hero worship

(b) Encourage the practice of peer review

(c) Encourage hobbies and indulgence in physical activities

(d) Educate parents and teachers to be soft with the boy

Ans. **1.** (d) All of these; **2.** (d) Throwing back-to-back challenges; **3.** (c) Encourage hobbies and indulgence in physical activities

B. Short Answer Type-I Questions 3 marks

1. What are the mental aspects used in sports psychology?

Ans. Mental aspects used in sports psychology are:

- **Imagery:** Improvement of performance by mental visualization.
- **Focus:** Removal of distractions so that full attention may be given to the performance.
- **Simulation:** The practice of training in an environment that imitates the actual conditions the player will face during the competition.
- **Flow:** Achievement of effortless concentration.
- **Motivation:** Stimulus for productive and competitive behaviour in the form of extrinsic motivation.

2. Why is adolescence considered a difficult period?

Ans. Adolescence is considered a difficult period because of the following reasons:

- One has to face physical changes, i.e. increase in weight and height, change of voice and growth of facial hair in boys, menstruation and development of breast in girls.
- Besides, development of sexual organs, all these rapid and complex changes which are considered one of the most significant characteristics and considered to be a difficult period to coup up.
- Emotional changes, i.e. hormonal changes can bring about emotional turmoil in adolescents. Here they are filled with desire to impress, to confirm, etc. Hence a difficult period.

3. Give five reasons why sports psychology is important.

Ans. Though sports psychology is a relatively new discipline, its importance has increased for a simple reason: its scientific approach towards sports development from a psychological perspective. A strong body must be accompanied by a strong mind to succeed in sports. With the application of sports psychology, the player's strengths and weaknesses can be assessed and their sense of positivity can be amplified by instilling self-confidence and a healthy awareness of their own potential.

4. Write in detail about the meaning and definition of sports psychology.

Ans. Sports psychology has been explained by experts as follows:

"Sports psychology is an area which attempts to apply psychological facts and principles to learning performance and associated human behaviour in the whole field of sports."

– John Luther

"Sports psychology is an applied psychology. It is more concentrated with the personalities, emotional or motivational aspects of sports and physical activities. It employs many of the techniques used in psychology."

– Clark and Clark

"Sports psychology explores one's behaviour in athletics". *– Singer*

By observing and analyzing a player's response to demand and pressure, a sports psychologist can discover and interpret the psychological factors involved in their performance.

5. Differentiate growth and development.

Ans. **Growth:**

- Change in physical structure, features, dimension like change in height, weight, length of limbs, replacement of teeth and changes brought by puberty.
- Stops after the individual has passed into adulthood and become mature physically.
- Is only one part of the process of development of an individual and her/his personality.
- Manifested in the physical appearance of an individual.
- Can simply be described as quantitative change.
- Cellular and purely biological.

Development:

- Overall changes occurring in an individual, including social, mental and emotional development.
- Impacts behaviour, aptitude and attitude.
- Involves and is influenced, by factors outside of the body.
- Can be defined as qualitative change.
- Can be perceived but not measured.
- It is an intrinsic process which can only be felt.
- Is a complex and comprehensive process that touches all aspects of an individual.
- Manifested in the bahaviour and attitude of an individual.

6. Write about developmental characteristics during adolescence.

Ans. The developmental characteristics during adolescence are:

- **Continuity:** Changes begin from infancy and continue till old age.
- **Orderly sequence:** Human development occurs in an orderly sequence.
- **General to specific:** Development moves from general to the specific.
- **Individual differences in the rate of development:** Rate of development differs for each individual, though the process may be similar.
- **Heredity and environment:** Genetic structure and interaction with the environment also influence the development of an individual.

C. Short Answer Type-II Questions 5 marks

1. Discuss in detail the importance of sports psychology.

Ans. According to Brown and Mahoney, "Sports psychology is the study of application of psychological principles to sports and physical activity, at all levels of skill improvement."

Though sports psychology is a relatively new discipline, its importance has increased for a simple reason: its scientific approach towards sports development from a psychological perspective. A strong body must be accompanied by a strong mind to succeed in sports. With the application of sports psychology, the player's strengths and weaknesses can be amplified by instilling self-confidence and a healthy awareness of their own potential. Some of the mental aspects used in sports psychology are imagery, focus, simulation, flow and motivation.

Sports psychology is important for the following reasons:

- **Development of physiological capacities:** Sports psychology motivates players to push themselves further and use their full physical potential.
- **Aiding the learning of motor skills:** One important application of sports psychology is its role in complementing the psychological readiness of the player.
- **Development of strategies and plans:** It enables the instructor to diagnose the approach of their instruction and detect the flaws, so that measures can be taken to rectify them.
- **Understanding the behaviour of players:** It is vital to have a full knowledge of the player's behaviour, attitudes, instincts, interest and drives, in order to help her/him grow into a better, wiser, stronger sportsperson.
- **Strengthening the mind:** It trains the players to boost their self-confidence by building a positive mindset, to focus on the performance and to open up a powerful link between thought and action.
- **Development of team spirit and goal setting:** Sports psychology can instruct sportspersons to learn the skills of good communication and cohesion. It also motivates them to set goals and work towards achieving it with the development of a focused and practical mind.

2. Describe briefly characteristics of growth and development (a) at infancy, (b) during childhood, and (c) during adolescence.

Ans. The stages of growth and development are given below:

Infancy (1-5 years)

- Physical characteristics include soft, small, flexible, and underdeveloped muscles and bones; uncoordinated movements; disproportionate body parts. Female and male children exhibit a similar pace in growth.
- Muscles and muscle control develop fast and motor skills are gradually obtained.

Perception of colour starts at about 3-4 months; eyes become mature at 6 months.

- With the development of the nervous system, the child also learns coordinated patterns of movement.
- Growth slows down in the last three years though the body begins to have a proportionate appearance.
- As for emotional and mental development, the child is first guided by feelings of pain and pleasure. Fear, anger and love are the dominant emotions at this stage.
- An infant's brain is quite sharp and has great retention of memory, although attention switches easily from one thing to another in an effort to respond to various stimuli.
- An infant eventually starts to participate in daily activities and begins to address wants and needs.
- The child also begins to assert itself and gains a personality.
- Activities that interest an infant include running, throwing and kicking balls, playing with toys.

Childhood (6-12 years)

- The speed of physical growth is fast in the first three years and it slows down subsequently.
- The child also gains weight steadily, though physical strength is still weak. Neuromuscular coordination, however, shows vast improvement.
- Pulse rate is higher compared to adults, while blood pressure is lower. Baby teeth are replaced.
- Energy level is high but diminishes quickly as endurance is still poor.
- Mental and emotional intelligence grows at a fast pace. Memory, logic and decision-making abilities are attained.
- The child begins to have a good grasp of social skills and interacts with the environment.
- The child undergoes the process of establishing a personality.
- A child is more self-centered at the early stage of childhood.
- In the latter half, the child also loses interest in rhythmic activities and acquires a taste for specific activities and sports.

Adolescence (12-18 years)

- The period of transition from childhood to adulthood. It is believed that adolescence starts from the age of 13 and lasts till 19.
- Physical growth is extremely fast in this stage. Bones and muscles grow in size and strength, height shoots up. The heart increases in size, the skeleton is well calcified.
- Motor skills and coordination are well-defined.
- The onset of puberty brings are well-defined.
- Adolescence is a stage full of emotional complications.
- Friendship is highly valued during adolescence, and loyalty is expected.
- Feelings of intimacy towards other individuals also begin in this stage.

3. What are the problems faced by adolescents and how can they be managed?

Ans. Problems faced by adolescents are:

(a) Physiological changes

(b) Emotional changes

(c) Sexual development

(d) Clash between expectation and reality

(e) Peer pressure

(f) Academic pressure

(g) Hero worship

(h) Struggle with self-esteem

(For detailed description refer to page 143 of the book)

4. Explain in detail about the management of problems faced by adolescents.

Ans. Management of problems faced by adolescents:

- **Involvement in physical activities:** Physical activities provide a healthy and productive distraction from the emotional issues faced by adolescents.
- **Sex education:** Sex education should be given high priority in the design of school curricula.

Students should also be fully informed of the consequences of unprotected sexual activities such as pregnancy and contraction of STDs and reminded that their urges are a natural part of growing up. It also encourages teenagers of opposite sexes/genders to respect each other as individuals.

- **Encouraging hobbies:** Music, theatre and dance, etc. are not strictly academic in nature, but provide the benefit of nurturing the passion and talents of teenagers, thereby enabling them to employ their mind in emotionally fulfilling pursuits.
- **Vocational guidance:** Vocational guidance can be very useful to aid in this area, keeping in view the adolescent student's interest, intelligence, aptitude and capabilities.

Besides, there are many ways of management like instruction morals and ethics, creation of a suitable environment and educating parents and teachers.

5. Write a brief note on the following:

(a) Emotional changes in adolescents.

(b) Physiological changes in adolescents.

Ans. (a) **Emotional changes in adolescents:** Hormonal changes can bring about emotional turmoil in adolescents. They are filled with the desire to impress, to conform to what is the ideal standard of beauty, to be loved and appreciated. Lust, envy, anger and dissatisfaction with oneself, triggering impulsive actions, aggressive reactions, obsessive habits and emotional breakdowns. Teenagers frequently fall prey to health issues like eating disorders, bipolar disorder, mood disorders, depression, etc. As Ross puts it, "The adolescent lives an intensely emotional life, in which we can see once more the rhythm of positive and negative phases of behaviour in his constant alternation between intense excitement and deep depression".

(b) **Physiological changes:** These changes are marked by increase in height and weight, change of voice and growth of facial hair in boys, menstruation and development of breasts in girls. Development of sexual organs also occurs which is considered one of the most significant characteristics. All these rapid and complex changes affect the adolescents psychologically and induce feelings of fear, shame, withdrawal from society, boredom, anxiety, etc.

6. Write short notes on:

(a) Vocational guidance

(b) Peer pressure

Ans. (a) **Vocational guidance:** To have a clear and precise idea of what one wants to be in future can direct an adolescent towards a fruitful, ambitious and disciplined lifestyle. Teachers can provide vocational guidance to aid them in this area, keeping in view the adolescent student's interest, intelligence, aptitude and capabilities.

(b) **Peer pressure:** Adolescents have a keen yearning to impress their peers. They form groups and gangs and build their own social hierarchy. In their need for appreciation and acceptance, they risk the danger of taking part in substance abuse and even minor criminal activities.

CHAPTER 10
TRAINING AND DOPING IN SPORTS

P. 167–170

A. Objective Type/Multiple-Choice Questions

(1 mark)

I. Multiple-Choice Questions

1. Surekha's gymnastics coach told her that, to get better in her sport, she would have to develop interest in the steps he was teaching her and focus on practising the steps on her own. Which principle of sports training was he indirectly referring to?

(a) The principle of overload

(b) The principle of cyclicity

(c) The principle of active involvement

(d) The principle of variety

Ans. (c) The principle of active involvement

2. Which method of warming-up is meant to improve the flexibility of muscles?

(a) Jogging (b) Stretching

(c) Wind sprints (d) Striding

Ans. (b) Stretching

3. Warming-up is necessary for preparing the body .....

(a) physically (b) mentally

(c) emotionally (d) Only (a) and (b)

Ans. (d) Only (a) and (b)

4. A lawn tennis player is very good at her service. Which of these types of skills would she be said to possess in relation to her service?

(a) Coactive skill (b) Continuous skill

(c) Individual skill (d) Discrete skill

Ans. (d) Discrete skill

5. Handspring in gymnastics is an example of .....

(a) style (b) technique

(c) skill (d) all of these

Ans. (c) skill

6. ..... defined technique as "The most rational and effective form to perform exercises."

(a) Grosser (b) Ozolin

(c) Jersild (d) Sadler

Ans. (b) Ozolin

7. What type of prohibited substances are illegally used by some athletes to remove excess water from the body?

(a) Diuretics (b) Cannabinoids

(c) Stimulants (d) Beta-2 agonists

Ans. (a) Diuretics

8. The World Anti-Doping Agency (WADA) was set-up in 1999 after a major drug scandal during which popular international sporting event in 1998?

(a) Summer Olympics (b) Football World Cup

(c) Wimbledon (d) Tour de France

Ans. (d) Tour de France

9. Which of the following fall under the category of performance enhancing drugs or substances?

(a) Narcotics

(b) Cannabinoids

(c) Gene doping

(d) Glucocorticoids

Ans. (c) Gene doping

10. Which of the following is not a harmful effect of substance abuse?

(a) Physical attributes will be high

(b) Person will become addicted

(c) Person will become mentally imbalanced

(d) Willpower will be low

Ans. (a) Physical attributes will be high

11. Liver damage is one of the main negative effects of which of these harmful substances?

(a) Cannabinoids

(b) Corticosteroids

(c) Alcohol

(d) Beta blockers

Ans. (c) Alcohol

II. Match the following:

Match list – I with list – II and select the correct answer from the code given below:

List I – Types of Performance Enhancing Drugs/Substance	**List II – Name**
(a) Stimulants	(1) Ephedrine
(b) Narcotics	(2) Diamorphine
(c) Cannabinoids	(3) Marijuana
(d) Anabolic-Androgenic Steroids	(4) Oxandrolone

Select the correct set of options:

Code				
	(i)	(ii)	(iii)	(iv)
(a)	4	2	1	4
(b)	1	3	2	3
(c)	3	1	3	2
(d)	2	4	4	1

Ans. (iii): (a) – 1; (b) – 2; (c) – 3; (d) – 4

III. Assertion-Reason Type Questions: CBQ

Given below are the two statements labelled Assertion (A) and Reason (R).

A: Warming-up is an intricate part of any training or sports.

R: It ensures the efficiency of an activity by preparing the body physically, mentally and psychologically.

In the context of the two statements given above, 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 the correct explanation of (A).

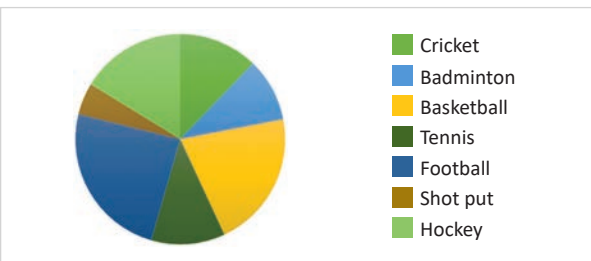
(c) (A) is true, but (R) is false.

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

Ans. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

IV. Data-Based Questions: CBQ

A school has children divided into various teams, the data is as follows:



On the basis of the pie-chart given above, answer the following questions:

1. Which of the following, sport-specific exercise will be performed during warming-up sessions by cricket players?

(a) Dodging (b) Running backwards

(c) Catching (d) Passing shots

2. Which seems to be the most popular game amongst students?

(a) Tennis (b) Cricket

(c) Hockey (d) Football

3. Lunge walks will be a good warm-up exercise for which of the following sports specifically?

(a) Tennis (b) Football

(c) Shot put (d) Only (a) and (b)

Ans. **1.** (c) Catching; **2.** (d) Football; **3.** (d) Only (a) and (b)

V. Picture-Based Questions: CBQ

Identify the following activities and classify on the basis of skills:

1.

2.

.....

.....

3.

4.

.....

.....

Ans. **1.** Shooting – Discrete Skill; **2.** Hammer Throw – Individual Skill; **3.** Flick Service – Simple Skill; **4.** Handspring – Complex Skill

VI. Case-Based Questions: CBQ

A set of players tried to enhance their performance by unnatural means (doping) for an international tournament:

On the basis of the information given, answer the following questions:

1. Which agency is responsible to set-up rules and regulations against such unnatural performance enhancement practices?

(a) TEUs (b) UNESCO

(c) HGH (d) WADA

2. Which of the following is a physical method of doping?

(a) Beta-2 Agonists

(b) HGH intake

(c) Diuretics and Masking Agents

(d) Gene doping

3. Which of the following sports does not specify prohibition of alcohol consumption?

(a) Cricket (b) Football

(c) Archery (d) Tennis

Ans. **1.** (d) WADA; **2.** (d) Gene doping; **3.** (c) Archery

B. Short Answer Type-I Questions 3 marks

1. Briefly describe the concept of sports training.

Ans. The word 'sport training' has been basically defined as the training in which an individual is taught knowledge and skills required for a particular task. In the context of the sports, training has been defined as under:

According to Harre, "A training based on scientific knowledge and a pedagogical process of sports perfection which, through systematic effect on psycho-physical performance ability and performance readiness, aims at leading a sportsman to top level of performance."

2. What are some considerations on which the principle of individual differences is based?

Ans. **The principle of individual differences:** The basis of this principle is that every sportsperson is different and has physiological characteristics that are specific to them. The effect of exercise or load varies from one sportsperson to another. By taking the following points into consideration, a training programme suitable for an individual may be developed without much difficulty:

- Smaller muscles take less time to heal as compared to large muscle.
- Slow twitch muscle fibres have a slower recovery rate than fast twitch muscle.
- Generally, men recover faster than women.
- Slow movements lead to faster recovery than fast or vigorous ones.

Other factors that should be considered include age, medical conditions, motivational level, natural assets, injuries, etc.

3. Differentiate between the principle of continuity and the principle of cyclicity.

Ans. **The principle of continuity:** This principle stresses on the importance of a continuous training process. According to it, there should not be prolonged periods of inactivity between each training session. Discontinuity often results in decreased physical abilities of sportspersons.

The principle of cyclicity: In sports training, there are different types of training cycles such as marcocycle, mesocycle and microcycle. Macrocycle is the longest and its period is almost 3 to 12 months. Mesocycle has medium period of three to six weeks while microcycle is the shortest of them as it has duration of only three to ten days.

4. How would you differentiate between the principle of specificity and the principle of variation?

Ans. **The principle of specificity:** The basis of this principle is that the only way to develop a particular component of the body is by improving its strength and skills to the maximum.

The principle of variation: As the training progresses, the monotony of load and recovery causes sportspersons as well as the coach to lose interest and the sessions become dull. To avoid this the coach must introduce variety in the process such as changing the session timing and duration, the volume and intensity of the workout, the environment, etc. It helps in preserving the interest and enthusiasm of the athlete.

5. Why is warming-up important? Give five points.

Ans. Warming-up is important because all the experts have agreed that performance in sports can be remarkably improved by warming-up. The five points are as under:

- **To raise the body temperature:** When the body is warmed-up properly, the temperature of muscles increases. This improves the flexibility of muscles and strengthens contraction force. The rate of contraction and relaxation also increases. Therefore, the body becomes ready for intensive activities without the risk of damage such as tearing of muscle fibres.
- **To decrease the viscosity of muscles:** At the start of an exercise, concentration of previously unused muscles is irregular and weak and the relaxation is incomplete. As the activity progresses, the contraction becomes stronger and regular and the relaxation is complete. This is the result of reduction in the viscosity of muscles.
- **To increase the speed of the nerve impulses:** During warming-up, the body is stimulated and the speed of nerve impulses increases. This enhances reaction time which is an important factor in every sport.
- **To reduce muscle capillaries resistance:** Many studies indicate that warming-up reduces muscle capillaries resistance.

- **To reduce anxiety and tension:** Warming-up helps athletes to suppress anxieties and tensions by bringing up their confidence level, more importantly at the games.

6. Differentiate between passive warming-up and active warming-up.

Ans.
- **Passive warming-up:** When a body is subjected to increase in temperature through external means and without undergoing any physical activity, then this process is known as passive warming-up. It can be done by wearing heavy uniforms, massage, hot water, steam, sunlight, hot drinks, etc. As no energy is used in this process, it is an efficient method. But it should be accompanied by active warming-up in order to achieve positive outcomes.
- **Active warming-up:** Active warming-up involves direct participation of an athlete in various physical exercises like jogging, stretching, etc. In short, these activities help sportspersons to perform better.

7. Give three examples of stretches used for limbering down.

Ans. The three stretches used in limbering down are:
- **Hamstrings:** Lie on your back, then raise and stretch one leg directly above the hips. Holding the calf or thigh, press the heel of the stretched leg towards the ceiling as you lower the leg back towards the chest. Repeat the same stretch with the other leg.
- **Chest:** Stand erect and interlace your fingers behind your back. Straighten your arms as you lift your chin towards the ceiling.
- **Triceps/Shoulders:** Bring the right arm across your body and over left shoulder, holding your elbow with you left hand, until you feel a stretch in your tricep. Repeat with the other arm.

8. Explain why doping should be banned in sports.

Ans. The ban or prohibition on doping is necessary to protect the athletes from the unfair advantage which may be gained by those athletes who use prohibited substances or methods to enhance their performance and also from the possible harmful side effects which these substances or methods can produce. Doping not only harms the athletes but also it is against the sportsperson and needs to be banned very strictly.

9. Explain the physical methods of doping.

Ans. The physical methods of doping are:
- **Blood doping:** Blood doping is a way of boosting the number of red blood cells in the bloodstream in order to increase the amount of oxygen in the blood and improve athletic performance. This can develop stamina and performance especially during long distance events such as running and cycling.
- **Gene doping:** The World Anti-Doping Agency defines gene doping as the "non-therapeutic use of cells, genes, genetic elements, or modulation of gene expression, having the capacity to enhance performance". It manipulates the athlete's cells or genes to produce faster reflexes and amplify physical strength and endurance.

10. Explain in brief about blood doping.

Ans. Blood doping is a way of boosting the number of red blood cells in the bloodstream in order to increase amount of oxygen in the blood and improve athletic performance. This can develop stamina and performance especially during long distance events such as running and cycling. In autologous blood doping, two units of the athlete's blood is taken a few weeks before the event; the blood is then frozen and injected one or two days before the competition. Fresh blood from another person is used in homologous blood doping. Another method of blood doping increases haemoglobin – oxygen carrying proteins – in the blood to achieve the same benefits.

11. Write short notes on:

(a) Substances and methods prohibited at all times

(b) Substances prohibited in particular sports.

Ans. (a) Substances prohibited at all time:
- Anabolic androgenous steroids
- HGH, peptide hormones and related substances
- Non-approved substances
- Beta-2 agonists
- Diuretics and masking agents.

Methods prohibited at all time:
- Manipulation of blood and blood components
- Chemical and physical manipulation
- Gene doping

(b) Substances prohibited in particular sports:

- Alcohol
- Beta-blockers

12. What are the various substances prohibited in a competition?

Ans. The various substances prohibited in a competition are:

- Stimulants
- Narcotics
- Cannabinoids
- Glucocorticoid

13. What are the side effects of stimulants?

Ans. The side effects of stimulants are:

- Anxiety
- Convulsions
- Adverse heart conditions
- Increase in blood pressure
- Dehydration
- Extreme weight loss
- Insomnia
- Sweating
- Cerebral haemorrhage
- Addiction and withdrawal problems
- Psychological side effects like impaired judgement and decision-making.

14. Enlist any four harmful effects of substance abuse.

Ans. (i) Slowly develops many health issues

(ii) Person becomes fickle minded

(iii) Person will be mentally imbalanced

(iv) Physical attributes will be low.

C. Short Answer Type-II Questions 5 marks

1. Make a list of the principles of sports training and describe at least eight of them.

Ans. The principles of sports training are:

- The principle of continuity
- The principle of transfer
- The principle of balance
- The principle of overload
- The principle of progression
- The principle of recovery
- The principle of individual differences
- The principle of general and specific preparation
- The principle of specificity
- The principle of active involvement
- The principle of variation
- The principle of warm-up and cool down
- The principle of ensuring results
- The principle of cyclicity.

Description:

- **The principle of general and specific preparation:** It plays an important role in improving performance. It acts as a frame work for specific preparation.
- **The principal of active involvement:** It is necessary to gain the advantage of a training programme.

  The combined efforts of an athlete and her/his coach determine the degree of the performance.
- **The principle of specificity:** The basis of this principle is that the only way to develop a particular component of the body is by improving its strength and skills to the maximum.
- **The principle of transfer:** It is related to transfer of learning. It is not always positive. It can be negative or zero too.
- **Principle of progression:** It states that increase of overload should be a gradual process at a reasonable rate. A rapid increase can cause serious complications such as muscle damage or injury.
- **The principle of recovery:** An athlete's body needs rest and recovery to revitalise and become better and stronger than earlier. A training programme should include proper rest and a recovery period between each session.
- **The principle of warm-up and cool down:** Warm-up is a process of increasing blood flow to the working muscles which in turn raises the body temperature and prepare the body for more intense exercises. On the other hand, cooling down facilitates the flow of blood to vital organs and eliminates waste products after each training.
- **The principal of cyclicity:** There are different types of training cycles such as macrocycle, mesocycle and microcycle. Macrocycle is the longest and lasts up to three to 12 months. Mesocycle has a medium period of three to six weeks. Microcycle is the shortest of all the cycles. It has duration only three to ten days.

2. Discuss the concept of warming-up and its types.

Ans. Warming-up is a process of preparing the body before training or competition through performing light exercise. It is a combination of rhythmic exercise which raises the heart rate and muscle temperature and static stretching through a full range of motion.

Types of warming-up: It has two types.

- Passive warming-up
- Active warming-up.

(For brief explanation, refer to pages 132–133 of the textbook.)

3. Describe the methods of warming-up that you have learned.

Ans. The methods of warming-up are:

- General method
- Warming-up with warm water.
- Warming-up through massage
- Through sunbath
- Through steam bath.

(For detail, refer to page 133 of the textbook.)

4. Discuss the importance of warming-up in sports.

Ans. The importance of warming-up are as under:

- raises the body temperature
- Decreases the viscosity of muscles
- Increases the speed of the nerve impulses
- Reduces muscle capillaries resistance
- Increases the speed of transfer of oxygen
- Increases metabolic rate
- Reduces anxiety and tension
- Boosts cooling efficiency
- Reduces the blood lactic acid
- Avoids injury
- Increases the speed of muscles
- Increases flexibility
- Increases strength
- Increases endurance
- Increases explosive power
- Improves specific skills
- Improves neuromuscular coordination
- Warming-up brings second wind more readily

(For more detail, refer to pages 154–155 of the textbook.)

5. What are the physiological bases of warming-up?

Ans. Physiological bases of warming-up are as under:

- Increases body temperature
- Decreases the viscosity of muscles
- Increases the speed of nerve impulses
- Decreases the resistance in muscle capillaries
- Increases the speed of transfer of oxygen and fuel to tissues
- Increases the metabolic rate
- Reduces the blood lactic acid
- Increases the working capacity.

(For more details, refer to page 155 of the textbook)

6. Enumerate and explain the guiding principles of warming-up.

Ans. The guiding principles of warming-up are:

- **Simple to complex:** This principle states that simple exercise or activity should be performed at the start of warming-up, followed by complex exercise. The nature of exercise should not be exceedingly complex otherwise it will lead to exhaustion and diminish the performance at the competitive stage.
- **Exercise for all the parts of body:** This principle means that warming-up should include exercise of all parts of the body.
- **Stretching and loosening exercise should be included:** Stretching and loosening exercises prevent injuries and increase flexibility. They also prepare the body to use its full potential.
- **Intensive enough to raise body temperature:** The extent of warming-up should be intense enough to raise the body temperature. It should be devoid of exhaustion. This technique is very helpful for mature sportspersons.
- **Age and sex specific:** The efficiency of warming-up depends on age and sex criteria. The extent of intensity and time for warming-up should be more for boys than girls of the same age. It is a well-known fact that men need a longer period of training as compared to women. This should be always kept in mind.

7. Discuss the importance of limbering down in sports.

Ans. Limbering down restores the body's normal temperature, i.e. when normal temperature exceeds due to intense and vigorous activity or competition, then the proper cooling brings it down to its normal value. The importance of limbering down in sports are:

- It eliminates waste products.
- It helps in reducing tensions.
- It also decreases the chances of dizziness or fainting.
- Helps in supplying oxygen.
- Decreases adrenaline in the blood.
- It does not allow muscles to remain stiff.
- Above all it helps to get heart rate to a normal state.

8. Write an essay on the classification of skills.

Ans. Classification of skills is a very tricky task and are more or less placed in a sequence. Skills can be of different varieties but let us try to write here about some of them like open skill that are random and prone to changes as per the circumstances. Secondly there are closed skills which are within the control of the players and independent of the opponent's actions likewise we have simple skills which do not require a lot of physical effort of strategies or coordination. Complex skill is also a basic skill which unlike simple skill needs intense physical involvement, coordination, decision-making abilities, etc. In short we have fine skills, discrete skills, serial skills, continuous skills, individual skills, coactive skills and interactive skills. All these types of skills vary according to the nature of their respective games. Besides each skill has its own ending and beginning such as discrete skill has a definite ending and beginning while coactive skill can be performed without direct confronting them and interactive skills involve direct confrontation.

9. What are the different roles of the World Anti-Doping Agency?

Ans. The World Anti-Doping Agency (WADA) was set-up on November 10, 1999 in Lausanne, Switzerland, as an initiative of the International Olympic Committee. It aims to advance, manage and monitor the fight against drugs in sports at the international level.

The World Anti-Doping Agency (WADA) developed a code simply known as the WADA code to set anti-doping policies, rules and regulations. The Code applies to all parties involved in the world of sports – from players, coaches, organisations and public authorities. WADA Code works with five International Standards to promote consistency among anti-doping organisations in various areas namely, laboratories, Therapeutic Use Exemptions (TEUs), the List of Prohibited Substances, and the protection of privacy and personal information.

10. What are different performance enhancing drugs? Write in detail.

Ans. There are substances, chemical agents or procedures designed to increase the performance of athletes. They enlarge muscles, sharpen alertness of the mind or increase the blood's oxygen-carrying capacity. Now let us discuss the performance enhancing substances as under:

- Anabolic-androgenic steroids
- Human growth hormone, peptide hormones and related substances
- Beta-2 agonists
- Diuretics and masking agents
- Stimulants
- Narcotics
- Cannabinoids
- Glucocorticoids

11. Discuss the side effects of at least six prohibited substances in detail.

Ans. Refer to Table 10.2 of Chapter 10 on pages 163–165 of the textbook.

12. Write notes on at least eight prohibited substances and methods.

Ans. Substances prohibited in-and out-of-competitions all the times are:

- Anabolic-androgenic steroids
- HGH, peptide hormones and related substances
- Non-approved substances
- Beta-2 agonists
- Diuretics and masking agents

The following methods are prohibited.

Blood Doping: Blood doping is a way of boosting the number of red blood cells (RBC) in the bloodstream in order to increase the amount of oxygen in the blood and improve athletic performance. This can develop stamina

and performance especially during long distance events such as running and cycling. In autologous blood doping, two units of the athlete's blood is taken a few weeks before the event; the blood is then frozen and injected one or two days before the competition. Fresh blood from another person is used in homologous blood doping. Another method of blood doping increases haemoglobin – oxygen carrying proteins – in the blood to achieve the same benefits.

Gene Doping: The WADA defines gene doping as the *"non-therapeutic use of cells, genes, genetic elements, or modulation of gene expression, having the capacity to enhance performance"* (WADA, 2008). It manipulates the athlete's cells or genes to produce faster reflexes and increase physical strength and endurance. Methods like transfer of polymers of nucleic acids or nucleic acid analogues are banned.

13. What are the rules prescribed by the WADA?

Ans. The rules prescribed for the sportspersons by the WADA are:

- Athletes should keep themselves available for the sample collection any time they are called one.
- They should keep themselves informed of current anti-doping policies and rules and comply with them.
- They should inform medical personnel that they are sportspersons and are under obligation not to use substances and methods that are prohibited.
- They should maintain control of their own samples until they are sealed.
- They should take steps to avoid ingestion of banned substances with their food in the form of supplements.
- They should be aware of the procedure for applying a Therapeutic Use Exemption.
- They must report immediately to the doping control station for testing unless delayed for valid reasons.
- Athletes in a control pool must report their whereabouts, provide evidence of identity to the person carrying out the control, obey instructions of the control staff and accept supervision by control officer between the time of receiving request to provide a sample and the time of reaching the control points.

14. Briefly discuss four ways to prevent a young person from getting involved in substance abuse.

Ans. (i) Firstly prevention starts from the family bonding and culture. Values and customs can be imbibed in a child from and by the family.

(ii) Self-belief is the best prevention.

(iii) Good education and effective understanding are very important to understand the ill-effects of substance abuse.

(iv) Love and respect for the parents is another strong aspect of prevention.

D. Value-Based Questions

1. Rasika was participating in 'Run for Health' organised by her society. She was very excited as this was the first time she was taking part in such an event. Before going for run, Mr Verma told her about the importance of warming-up before doing any physical activity. Mr Verma told her about the general methods of warming-up, and warm-up prepares the body for exercise and gradually increases the heart rate and blood circulation which loosen the joints, increase blood flow and prevent injuries. He advised her to warm-up before running. Rasika wholeheartedly followed the instructions of Mr Verma.

Answer the following questions based on the above passage:

(i) What do you understand by the term warming-up?

(ii) What are the general methods of warming-up?

(iii) What are values shown by Rasika while participating in 'Run for Health'?

Ans. (i) Warming-up is a process of preparing the body before training or competition through performing light exercises.

(ii) The general methods of warming-up are:

- Jogging
- Simple exercises
- Striding
- Stretching
- Wind sprints.

(iii) Self-discipline and determination.

2. Sukhbir was a good weightlifter. He was selected for National Championship. He used to do rigorous training. His trainer was sure about his win as he was the best performer. Due to lot

of psychological and physiological pressures, he lacked confidence and started taking anabolic steroids. Somehow his trainer helped him to come out of this situation and suggested not to use such substances in future.

Answer the following questions based on the above passage:

(i) What do you mean by anabolic steroids?

(ii) What makes Sukhbir to involve in such situations?

(iii) Write down the values of trainer that reflect through this initiative.

Ans. (i) Anabolic-androgenic steroids are manufactured substances related to male sex hormones. Anabolic refers to muscle-building and androgenic refers to increased male sexual characteristics. Steroids refers to a class of drugs. These drugs can be legally prescribed to treat conditions resulting from steroid hormone deficiency.

(ii) It is due to psychological and physiological pressures that Sukhbir got involved in such situation.

(iii) Caring and generous.