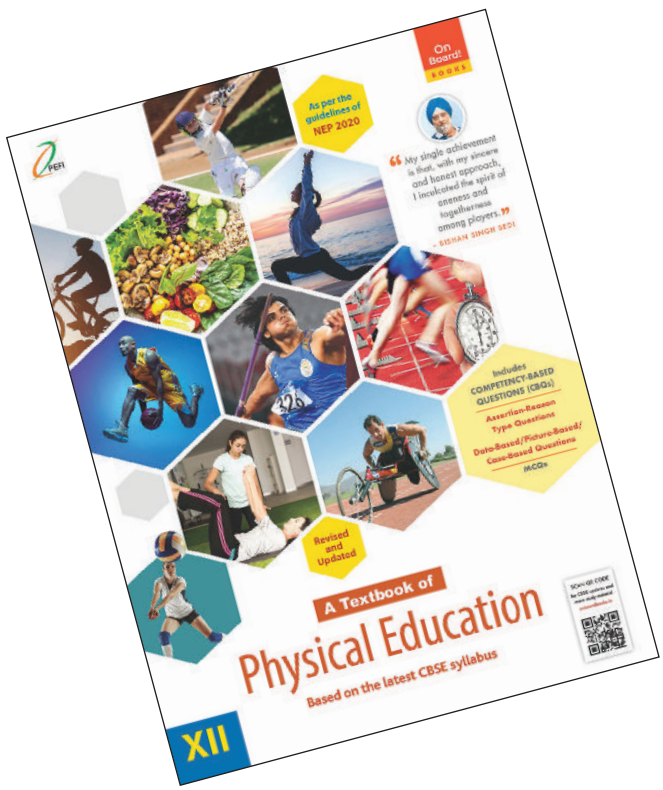
TEACHER'S HANDBOOK

A TEXTBOOK OF
PHYSICAL EDUCATION
Book 12



On Board! BOOKS

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CHAPTER 1

MANAGEMENT OF SPORTING EVENTS

P. 24–29

A. Objective Type/ Multiple-Choice Questions

I. Multiple-Choice Questions

1. Which of the following is a part of sports management?

(a) Planning

(b) Directing and Organising

(c) Staffing and Controlling

(d) All of these

Ans. (d) All of these

2. Identify which one of these is not the objective of planning? **(CBSE SP 2021 Term 1)**

(a) Enhance creativity

(b) Increase efficiency

(c) Reduce chances of mistake

(d) Facilitates poor coordination

Ans. (d) Facilitates poor coordination

3. What is the meaning of staffing?

(a) Interviewing staff

(b) Selecting and recruiting staff

(c) Promoting staff

(d) All of these

Ans. (b) Selecting and recruiting staff

4. Which of the following are salient aspects of a tournament?

(a) Nurturing social skills

(b) Means of recreation

(c) Promoting national and international integration

(d) All of these

Ans. (d) All of these

5. What are the types of league tournaments?

(a) Single and Double league tournament

(b) Single and Mixed double league tournament

(c) Double and Combination league tournament

(d) Simple and Complex league tournament

Ans. (a) Single and Double league tournament

6. Which fixture is also known as 'Berger system'? **(CBSE SP 2021 Term 1)**

(a) Knockout fixture

(b) Round Robin fixture

(c) Combination fixture

(d) Challenge tournament

Ans. (b) Round Robin fixture

7. What is the formula to calculate the number of matches in a single league tournament? **(CBSE 2020)**

(a) N – 1 (b) N(N – 1)

(c) N(N – 1)/2 (d) 2N –N

Ans. (c) N(N – 1)/2

8. Which formula is used to find out the number of matches in a double league tournament?

(a) N × N (b) N (N – 1)

(c) (N – 1) (d) N × N × N

Ans. (b) N(N – 1)

9. What is the formula to find the number of matches in a knockout tournament?

(a) N (b) N (N – 1)

(c) (N – 1) (d) (N + 1)

Ans. (c) (N – 1)

10. The formula for determining the number of rounds in a single league fixture when the number of teams is even? **(CBSE SP 2021 Term 1)**

(a) N (b) (N – 1)/2

(c) N – 1 (d) N(N – 1)/2

Ans. (c) N – 1

11. What is the formula to divide an odd number of teams in the upper half for a knockout fixture? **(CBSE SP 2021 Term 1)**

(a) (N + 1)/2 (b) (N – 1)/2

(c) N(N – 1)/2 (d) N(N + 1)/2

Ans. (a) (N + 1)/2

12. Formula for determining the number of bye in the lower half of a knockout fixture when number of byes are odd? **(CBSE SP 2021 Term 1)**

(a) (NB + 1)/2 (b) (NB – 1)/2

(c) NB /2 (d) NB + 1

Ans. (a) (NB + 1)/2

13. How many byes will be given if there are 17 teams? **(CBSE SP 2022)**

(a) 1 (b) 8

(c) 15 (d) 12

Ans. (c) 15

14. How many matches will be played in the knockout tournaments first round if there are 15 teams? **(CBSE SP 2022)**

(a) 8 (b) 7

(c) 5 (d) 6

Ans. (b) 7

15. It is a process/procedure of shuffling the position of good teams so that they don't meet each other in an early stage of the competition and spectator interest is kept alive till finals. What is the name of this process?

(a) Intramural (b) Seeding

(c) Fixture (d) Extramural

Ans. (b) Seeding

16. Which one of the following is an advantage of Round Robin tournament? **(CBSE 2020)**

(a) Time consuming

(b) More number of officials

(c) Expensive

(d) Decides the real strong team

Ans. (d) Decides the real strong team

17. The total number of matches in a knock out tournament of 34 teams are **(CBSE 2020)**

(a) 31 (b) 32

(c) 33 (d) 35

Ans. (c) 33

18. How many rounds will be played if the number of teams are 29 in the knockout fixture? **(CBSE SP 2021 Term 1)**

(a) 5 (b) 6

(c) 7 (d) 3

Ans. (d) 3

19. Which sports competition is organised within the school itself?

(a) Extramural (b) Intramural

(c) Inter-state (d) None of these

Ans. (b) Intramural

20. Which of these is not one of the methods used for fixtures in League or Round Robin tournaments?

(a) Cyclic method (b) Spiral method

(c) Staircase method (d) Tabular method

Ans. (b) Spiral method

21. Consolation tournaments are a part of which type of fixture? **(CBSE SP 2021 Term 1)**

(a) Knockout (b) League

(c) Combination (d) None of these

Ans. (a) Knockout

II. Match the following:

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

List I – Category	List II – Name
(a) Technical committee	(1) To provide shifting facility
(b) Finance committee	(2) To resolve dispute
(c) Transport committee	(3) To deals with money and expenditure
(d) First aid committee	(4) To provide medical facilities

Select the correct set of options:

(a) (i)–(2), (ii)–(3), (iii)–(1), (iv)–(4)

(b) (i)–(3), (ii)–(2), (iii)–(1), (iv)–(4)

(c) (i)–(2), (ii)–(3), (iii)–(4), (iv)–(1)

(d) (i)–(4), (ii)–(3), (iii)–(1), (iv)–(2)

Ans. (a) (i)–(2), (ii)–(3), (iii)–(1), (iv)–(4)

III. Assertion-Reason Type Questions: CBQ

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

1. A: Knockout tournaments save cost and time and make each match intensive.

R: In this type of format, players or teams have to consistently give their best performance to avoid elimination.

2. A: Planning is the foremost function in sports.

R: Planning gives a view of future course of action. **(CBSE SP 2020)**

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

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

IV. Data-Based Questions: CBQ

Given below is the tournament fixture proce-dure of a volleyball national competition.

1-2							
1-3	2-3						
1-4	2-4	3-4					
1-5	2-5	3-5	4-5				
1-6	2-6	3-6	4-6	5-6			
1-7	2-7	3-7	4-7	5-7	6-7		
1-8	2-8	3-8	4-8	5-8	6-8	7-8	
1-9	2-9	3-9	4-9	5-9	6-9	7-9	8-9

On the basis of the above data, answer the following questions:

1. In the fixture shown above, which of the following is not needed?

(a) Byes (b) Knockout

(c) Seeding (d) Consolation

2. In League tournaments, the winner is decided by

(a) British method (b) American Method

(c) No of matches won (d) Both (a) and (b)

3. Which of the following is not a league fixture procedure?

(a) Ladder method (b) Staircase method

(c) Cyclic method (d) Tabular method

Ans. 1. (a) Byes

2. (a) British method

3. (a) Ladder method

V. Picture-Based Questions: CBQ

Your school is organising annual sports day. To make this event successful, write the names of any four important committees with one responsibility.

Ans. i. Publicity Committee: Advertise the event

ii. Finance Committee: To deal with money and expenditure

iii. Reception Committee: To welcome chief guest and players

iv. Announcement Committee: Make announcements regarding opening and closing ceremony.

VI. Case-Based Questions: CBQ

1. Rohan and Satish organised a volleyball tournament on Knockout basis. They found that the spectators were losing interest in the tournament because two good teams were out of the tournament as they were defeated in the beginning. Which provision could have avoided this kind of situation? **(CBSE SP 2021 Term 1)**

(a) Bye (b) Seeding

(c) Pools (d) Halves

Ans. (b) Seeding

2. ABC School is one of the reputed schools in their location for the number of sports facilities it provides to its stakeholders. Keeping that in consideration CBSE sports cell has given them the responsibility of conducting CBSE Football cluster. Total 35 teams have sent their entry for participation in the tournament. Due to the large number of teams willing to participate, the school should conduct the competition by which fixture? **(CBSE SP 2021 Term 1)**

(a) League (b) Knockout

(c) Staircase (d) Challenge

Ans. (b) Knockout

3. A fixture has to be prepared for a knockout tournament between 15 teams. On the basis of the case given, answer the following questions:

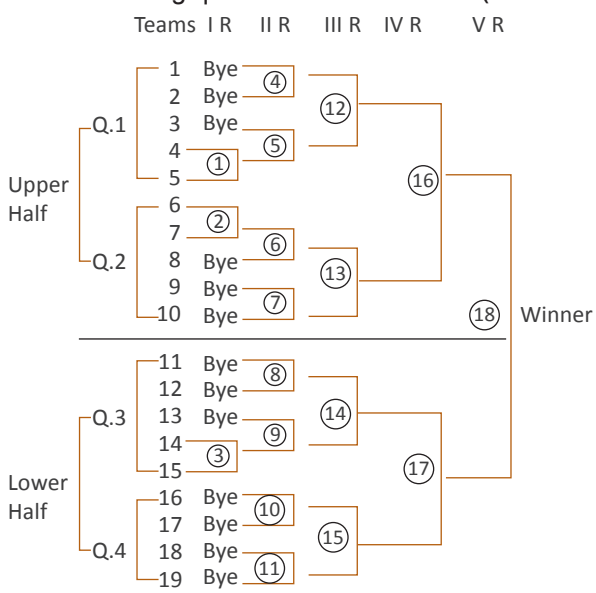
(a) How many teams will the lower half have?

(b) How many byes will the upper half have?

(c) In case of byes, the first bye goes to the ..... team of the ..... half.

Ans. (a) 7, (b) 0, (c) last lower

4. On the basis of fixture given below, answer the following questions: **(CBSE SP 2022)**



(a) Total number of matches in second round are .....

(b) What is the formula for calculating the total number of matches?

(c) The fourth round in this case can also be called as .....

(d) What is the formula for calculating the number of byes?

OR

The formula for calculating number of rounds is .....

Ans. (a) 8, (b) N – 1, (c) Semi-final, (d) 2^n – N

B. Very Short Answer Type Questions

1. What do you mean by planning? **(CBSE 2016)**

Ans. Planning is a course of action in order to reach a definite goal.

2. What do you mean by a tournament?

Ans. A tournament is a type of contest in which several players participate and defeat opponents in various rounds to get to the final match and win it.

3. Round Robin tournament is of two types. Name them and give one major difference between them. **(CBSE 2017)**

Ans. Single league tournament and double league tournament. In single league tournament, each team/player plays against every other participant once. In double league tournament, each team/ player plays against every other participant twice.

4. Fixtures are the schedule, fixed for the matches. What is a bye? **(CBSE 2017)**

Ans. A bye is a dummy team that participates in the second round to even out the number. The number of byes in a fixture is the difference between the number of participants and the next highest number which is the power of 2.

5. What is the difference between single league tournament and double league tournament?

Ans. In single league tournament, each team/player plays against every other participant once. In double league tournament, each team/player plays against every other participant twice.

6. What is seeding? **(CBSE 2011, 2012)**

Ans. Seeding is a tactic used in sports events in which specific teams are sorted into a bracket in such a way that the strongest teams meet later in the tournament.

7. Write the formula for giving a bye. **(CBSE 2016)**

Ans. The number of byes in a fixture is the difference between the number of participants and the next highest number which is the power of 2. If there are two very strong teams, one will be placed on the top of the upper half and the other at the bottom of the lower half. If there are four strong teams, then the third will be placed on the top of the lower half, and the fourth at the bottom of the upper half. This usually works if the number of teams to be seeded are the power of 2. Save for seeded teams, the rest are divided by drawing lots.

8. What is a consolation tournament?

Ans. A consolation tournament is held to give second chance to defeated players in knockout tournaments.

C. Short Answer Type-I Questions

1. Define sports management.

Ans. Sports management can be defined as the coordination of resources, technologies, processes, personnel and situational contingencies for the efficient production and exchange of sports services.

2. What is a short-term planning? Explain giving a suitable example.

Ans. Short-term planning is setting goals that the organisation hopes to achieve within the next few months to a year. For example, an athletic shoe firm could aim to buy enough inventory of a specific model of shoe so that its salesperson can stock suppliers with enough shoes to match customer demand for the future year.

3. State the responsibilities of finance committee.

Ans. Finance Committee is primarily related to financial management for the sport event. It prepares budget to purchase equipment, medals, etc. before the sport event. During the event, the finance committee checks the cash flow, payments, remuneration of officials, etc. This committee settles all the bills, prepares report, etc. once the event is over.

4. What are the different types of league tournaments?

Ans. There are two types of league tournament. Single league tournament, in which each team player plays against every other participant once or double league tournament, in which each team/player plays against every other participant twice.

5. Write any two advantages of league tournament.

Ans. Advantages of League or Round Robin Tournaments

- Leagues give each participant a chance to prove itself against every opponent involved in the tournament. As such, there is no question of missed opportunities. It is a fair way of determining the best and most consistent competitor. Many footballs and cricket tournaments use this approach.
- There is no such thing as getting lucky in round robins. Even if a team defeats another in the first round due to sheer luck, it will still have to outperform the others.

6. Define the term fixture. **(CBSE 2018)**

Ans. Fixture is a sport event or its date. Further, it is a process of arranging the team in systematic order in various groups for competitive fights for physical activity.

7. How are byes fixed in a knockout tournament?

Ans. First of all, lots will be drawn and the total number of teams will be divided into 2 two halves. Following that, byes will be fixed in the following manner:

- The first bye goes to the last team of the lower half, and the second to the first team of the upper half.
- The third bye goes to the first team of the lower half, and the fourth to the last team of the upper half.
- This sequence will be followed while assigning the next bye or byes.

8. Explain briefly the cyclic method.

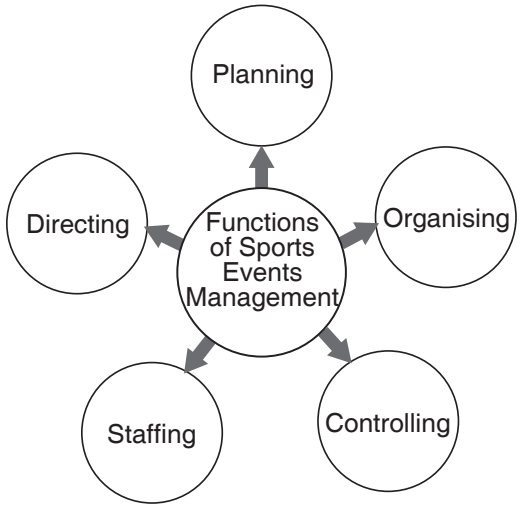
Ans. Cyclic method: Cyclic method has different applications for even and odd numbers of teams. In the former case, the 1st team is placed at the top of the right hand side. The remaining team numbers are put in ascending order consecutively and then upward on the left side. In the latter, the bye is fixed on the top of the right side, and then followed by the rest of the procedure. Teams are rotated from right to left.

If N (number of teams) is even, the number of **rounds** will be (N – 1).

D. Short Answer Type-II Questions

1. Create a mind map depicting the functions of sports management.

Ans.



2. What is controlling in sports management?

Ans. Controlling comprises all the processes created by leaders to monitor success. Controlling entails ensuring that performance adheres to established guidelines. Controlling consists of three steps:

- Setting performance criteria.
- Comparing actual performance to standards.
- Taking remedial action as needed.

3. What is directing in sports management?

Ans. Directing is the activity element of the management process. It is commonly referred to as the directing or leading function. This is the step where everything takes place. The sports manager is responsible for coordinating the actions of the personnel in order to achieve corporate goals. The manager's responsibilities as a leader include delegating, communicating, managing conflict, managing change, and inspiring staff. The manager employs a variety of talents to carry out these tasks, which are detailed in the following section of this chapter.

4. List down the important committees during a tournament. **(CBSE 2011)**

Ans. Publicity Committee, Boarding and Lodging Committee, Transport Committee, Grounds and Equipment Committee, Refreshment and Entertainment Committee, Reception Committee, Decoration and Ceremony Committee, Committees on Entries and Programmes, etc. are various important committees during a tournament.

5. What is the task of the decoration and ceremony committees?

Ans. Decoration and Ceremony Committees work in tandem with the refreshment and entertainment committee and the reception committee to make the ceremonies vibrant and well coordinated. They decorate the viewing areas and stages so that the venue looks attractive. This committee is also charged with arranging for certificates, medals and trophies.

6. Your school is organising 'Run for Unity'. Explain the responsibilities of accreditation, technical and finance committee. **(CBSE 2016)**

Ans.
- **Accreditation committee:** This committee registers all the participants with an operational role. The production, distribution and validation of passes is the duty of this committee.
- **Technical committee:** Technical committee looks after the technical aspects of the tournament. It ensures that the field is safe for play for all participants. It ensures the quality of equipment.
- **Finance committee:** This committee prepares the budget of the tournament and maintains every expenditure related to tournament.

7. Give two reasons why tournaments are important.

Ans. The purpose of a tournament is to establish the one team or player who has outperformed the rest. Tournaments introduce the youth to stress that is different from the one they face in the classroom; on the field, their alertness of mind, physical strength, coordination between the mind and the body, and natural and acquired reflexes are all put to test in front of spectators.

8. What are the three types of tournaments?

Ans. Three types of tournaments are knockout; league or round Robin and combination.

9. League tournament is a better way to judge the best team of the tournament. Comment.

(CBSE 2020)

Ans. League or Round Robin tournament, as opposed to knockouts, allows each team or player to compete against every other participant in the tournament. A league tournament is a better way to determine the best team in a tournament because each team has the most opportunities to show its efficiency. Teams and players have a lot of chances to show and improve her/his performance. The teams which score more points are eligible for next matches in the tournament.
- Leagues give each participant a chance to prove itself against every opponent involved in the tournament. As such, there is no question of missed opportunities. It is a fair way of determining the best and most consistent competitor. Many footballs and cricket tournaments use this approach.
- There is no such thing as getting lucky in round robins. Even if a team defeats another in the first round due to sheer luck, it will still have to outperform the others.
- Since leagues accurately measure the performances of a particular team or player, their strengths and weaknesses can be evaluated with greater certainty.
- League tournaments tend to be popular and also earn a lot of revenue. Fans get to cheer their players/teams through a greater number of matches. (any three)

10. What is the difference between round robin and knockout?

Ans.

In knockout tournaments, the defeated team or player is eliminated with no scope of participating further. As for the winner, they continue competing against other opponents until they eventually lose or win the tournament.	League or round Robin tournament, as opposed to knockouts, allows each team or player to compete against every other participant in the tournament. This can be either of two variations: single league tournament, in which each team/ player plays against every other participant once or double league tournament, in which each team/player plays against every other participant twice.

11. What types of statistics are used while drawing fixtures for knockouts?

Ans. For knockouts, the total number of matches to be played in a single tournament is determined by the following formula:

$$(N - 1)$$

where N is the number of teams/individual players.

So, if in a tournament there are 8 participants, then the total number of matches played will be 7. In the first phase, there will be 4 matches (1 against 1); in the second, the four winners will advance further to decide the two finalists, so there will be 2 matches. Counting the final match, there are 7 in total, as derived from the formula. Lots are drawn to decide the pairs of competitors.

12. Define bye. Explain the rules of giving bye with the help of an example. **(CBSE SP 2022)**

Ans. Bye: When a team or a player does not face an opponent in the primary round due to allotment of draws, random lottery system is used to give a bye to any participating team/player. In a tournament, the organising committee assigns byes to the teams due to many reasons. They are as follows:

- Uneven distribution of teams in tournament
- Keeping previous winners in different pool to create balanced competition
- Avoiding one particular team from playing more matches on a single day than the other teams.

First of all, lots will be drawn and the total number of teams will be divided into 2 two halves. Following that, byes will be fixed in the following manner:

- The first bye goes to the last team of the lower half, and the second to the first team of the upper half.
- The third bye goes to the first team of the lower half, and the fourth to the last team of the upper half.
- This sequence will be followed while assigning the next bye or byes.

13. How many byes will be allotted in a knockout in which 15 teams are participating?

Ans. Number of Bye = (16 – 15) = 1 (refer to pages 17–18 of textbook)

14. Draw a fixture of 11 football teams participating in a tournament on the basis of a knockout.

(CBSE 2016)

Ans. Refer to pages 18-20 of the textbook.

15. How many rounds will be there in a knockout of (i) 10 teams and (ii) 13 teams?

Ans. (i) When the number of participating teams or players (N) is the power of two (i.e. 2, 4, 8, 16, 32, and so on), then number of rounds will be the number of 2's making up N. For instance, when

N = 10, number of rounds will be

2 × 2 × 2 × 2 = three 4s = 4,

(ii) N = 13, number of rounds will be

2 × 2 × 2 × 2 = four 2s = 4.

When N is not the power of 2, the number of rounds will be based on the next highest power of 2.

16. Draw a knockout fixture of 24 teams.

(CBSE SP 2016)

Ans. Refer to pages 18-20 of the textbook. Follow the same method to draw a fixture of 24 teams.

17. Differentiate between the cyclic method and staircase method.

Ans. Cyclic method: Cyclic method has different applications for even and odd numbers of teams. In the former case, the 1st team is placed at the top of the right hand side. The remaining team numbers are put in ascending order consecutively and then upward on the left side. In the latter, the bye is fixed on the top of the right side, and then followed by the rest of the procedure. Teams are rotated from right to left.

If N (number of teams) is even, the number of rounds will be (N – 1).

Staircase method: In this type, fixtures are arranged in such a way that it resembles a ladder or a staircase. There is no need to give byes to any team as there is no issue of odd or even number of teams.

E. Long Answer Type Questions

1. What are the various functions of sports management?

Ans. Functions of Sports Management

- Planning: Planning is a goal-oriented activity. It gives a view of future course of action. The planning role entails identifying organisational goals and selecting the best methods for achieving these goals.
- Organising: After planning, the sports manager then takes up the task of organising. The organising function kickstarts the implementation of plans. The manager selects which sorts of duties must be completed and who will be accountable for doing them as part of the organisational role.
- Staffing: Staffing can begin after the organisational chart has been created and the position qualifications have been determined. The responsibility for the roles in the organisational structure is determined by staffing. Staffing is the process of effectively recruiting and selecting people to fill roles in a company. Position qualifications obtained during the organising function are used in this situation.
- Directing: This is the activity element of the management process. It is commonly

referred to as the directing or leading function. This is the step where everything takes place. The sports manager is responsible for coordinating the actions of the personnel in order to achieve corporate goals. The manager's responsibilities as a leader include delegating, communicating, managing conflict, managing change, and inspiring staff. The manager employs a variety of talents to carry out these tasks, which are detailed in the following section of this chapter.

- Controlling: Controlling comprises all the processes created by leaders to monitor success. Controlling entails ensuring that performance adheres to established guidelines.

2. Describe how various planning committees function in sports events.

Ans. Various planning committees function in the following manner in a sports event.

- Publicity Committee: The publicity committee completes this preparation before the games. During the games they maintain the interest level for the games with proper advertisement. They also coordinate with the media for coverage during and after the games.
- Boarding and lodging committee: This committee takes care of accommodation and meals for the players, officials, and other members involved in the event. Before the games, they confirm the bookings. Once the tournament has started, they keep track of all boarding and lodgings, switches between departures and new arrivals, etc.
- Transport committee: The transport committee handles transportation facilities for the players, officials, etc. They arrange for buses and other vehicles to take the players and officials to the venue of the games from the places where they are staying.
- Grounds and equipment committee: This committee has the responsibility of ensuring that the grounds, fields, courts, etc. are in top condition. They also check the equipment and other gears to be used in the games to ensure that no mishap occurs and that plenty of equipment is available for all the players.
- Refreshment and entertainment committee: They supply drinks and refreshments to the guests, players, officials and other invitees. The entertainment programmes, such as opening song, closing dance, etc. are also arranged by this committee in advance.
- Reception committee: The reception committee welcomes the guests, players, officials, audiences, etc. during the opening and closing ceremonies.
- Decoration and ceremony committee: They decorate the viewing areas and stages so that the venue looks attractive. This committee is also charged with arranging for certificates, medals and trophies.
- Committees on entries and programmes: The committee on entries and programmes are tasked with sending out entry forms to various institutions early so that the latter can send in their applications on time. The committee then allots slots to the competitors, prepares fixtures if required, build a clear-cut schedule of the programmes and prints it so that it may be distributed to all involved parties.
- Committee for officials: There are many officials involved in a sporting event: judges, referees, umpires, recorders, starters, time keepers, lap scorers, clerks of the course, announcers, commentators, etc. The committee for officials selects and manages them for smooth functioning of the sports event.
- Announcement committee: The announcement committee is responsible for making announcements during the opening and closing ceremonies, games, important information like when an event is going to take place or changes in schedules, names of officials and players, running commentaries, etc.
- First aid committee: One of the most important committees in a sports event, the first aid committee works under the supervision of a medical expert. It provides first aid to injured players and ensures that they receive advanced medical attention if the need arises. The first aid team makes all necessary arrangements before the commencement of the sports event.

3. Explain pre-, during and post-game responsibilities of officials of various committees for organising a sports tournament smoothly. **(CBSE 2020)**

Ans. Pre-, during and post-game responsibilities of officials of various committees are as follows:

Technical Committee: Pre-sports event/ tournament: Before the event, it is the job of the Technical Committee to put forward a requisition to purchase equipment, invitation and confirmation from officials to conduct sports event, cleaning and layout of the fields, arrangement of equipment and stationery, preparation of fixtures, rules and regulation of the sports event.

During sports event/tournament: While the tournament is in progress, the Technical Committee is responsible for conducting matches, presence of the jury, cleaning and layout of the fields, collection of score sheets and other related papers from officials, preparation of merit list, etc.

Post sports event/ tournament: After the event is over, the Technical Committee arranges for the cleaning and layout of the fields, maintenance of the field, and placing of all equipment back to store.

Finance Committee: Pre sports event/ tournament: Before the event, It is the responsibility of Finance Committee to prepare the budget, to purchase sports equipment, stationery, medals, certificates, and other requirements as desired by the other committees, as well as preparing and finalizing the MoU with sponsors.

During sports event/ tournament: During the course of the event, the Finance Committee keeps a check on the outflow and inflow of finances including payment and remuneration to officials.

Post sports event/ tournament: Once the event is over, the Finance Committee examines all records related to settlement of the bills and accounts, and prepares the financial report. Refer to textbook for detail.

4. What is a knockout tournament? Explain different types of knockout tournaments. Draw a fixture of 21 teams on a knockout basis.

(CBSE 2012, 2015)

Ans. In boxing, a match is finished when an opponent is knocked down and unable to rise and return to the game within a certain time limit. This is called knockout. The concept of knockout tournaments is somewhat similar. In this type of tournament, the defeated team or player is eliminated with no scope of participating further. As for the winner, they continue competing against other opponents until they eventually lose or win the tournament.

Single knockout tournament, consolation tournament and double knockout tournament are different types of knockout tournament.

See page 19 of the textbook for a fixture of 21 teams on a knockout basis.

5. What is a league or round robin? Draw a fixture for 6 teams using round robin method.

(CBSE 2012)

Ans. League or Round Robin tournament, as opposed to knockouts, allows each team or player to compete against every other participant in the tournament. This can be either of two variations: single league tournament, in which each team/ player plays against every other participant once or double league tournament, in which each team/player plays against every other participant twice.

Example. Draw a fixture of 6 teams on a league basis according to the cyclic method.

Solution. Total number of teams
= 6 (Given)

Total number of matches

$$= \frac{N(N-1)}{2} = \frac{6(6-1)}{2}$$

$$= \frac{6 \times 5}{2} = \frac{30}{2} = 15 \text{ matches}$$

Number of rounds
= N – 1 = 6 – 1 = 5 rounds

Fixtures

I R		II R		III R		IV R		V R	
6	①	5	①	4	①	3	①	2	①
5	2	4	6	3	5	2	4	6	3
4 ←	3	3 ←	2	2 ←	6	6 ←	5	5 ←	4

6. Draw a fixture of 12 teams on a league basis according to the staircase method. How will you decide a winner in league tournament?

(CBSE 2019)

Ans. Fixture of 12 Team on the basis of staircase method

1-2										
1-3	2-3									
1-4	2-4	3-4								
1-5	2-5	3-5	4-5							
1-6	2-6	3-6	4-6	5-6						
1-7	2-7	3-7	4-7	5-7	6-7					
1-8	2-8	3-8	4-8	5-8	6-8	7-8				
1-9	2-9	3-9	4-9	5-9	6-9	7-9	8-9			
1-10	2-10	3-10	4-10	5-10	6-10	7-10	8-10	9-10		
1-11	2-11	3-11	4-11	5-11	6-11	7-11	8-11	9-11	10-11	
1-12	2-12	3-12	4-12	5-12	6-12	7-12	8-12	9-12	10-12	11-12

No. of Rounds = N – 1 = 12 – 1 = 11

No. of matches $= \frac{N(N-1)}{2} = \frac{12(12-1)}{2}$

$$= \frac{12 \times 11}{2} = \frac{132}{2} = 66$$

The following way is used to decide a winner:

(i) The team that wins the match gets
= 2 points.

(ii) The team that loses the match gets
= 0 point.

(iii) If match draws then each team gets
= 1 point.

After the tournament, all the teams are awarded the score as per their performance and the team which scores maximum is declared winner.

If the points of two teams are equal, then a match is held again between both teams.

7. Mention all calculations and steps involved to draw a knockout fixture of 19 teams, where 4 teams are to be seeded. **(CBSE 2018)**

Ans. Total no. of teams = 19 (N = 19)

No. of matches = (N – 1)

= 19 – 1 = 18

No. of teams in upper half $= \frac{(N + 1)}{2} = 10$

No. of teams in lower half $= \frac{(N - 1)}{2} = 9$

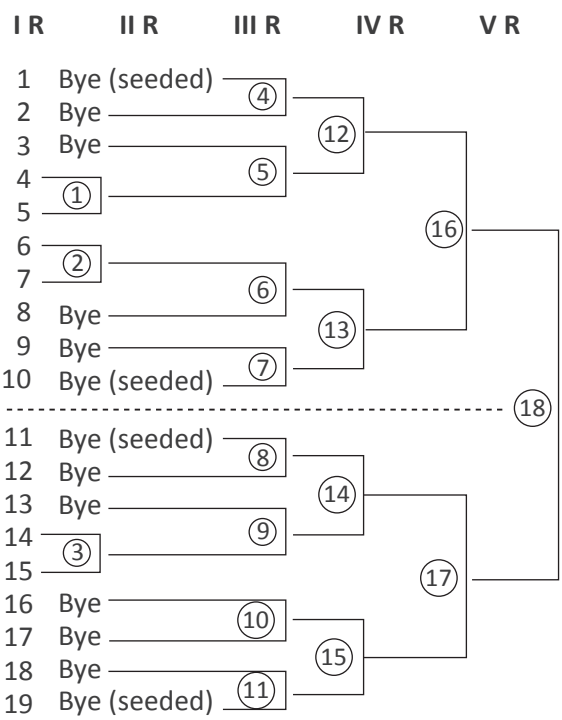
Total no. of byes (NB) = next power of 2 – N = 32 – 19 = 13

No. of byes in upper half $= \frac{NB - 1}{2} = 6$

No. of byes in lower half $= \frac{NB + 1}{2} = 7$

Seeding – 2 teams in upper half with byes

2 teams in lower half with byes



8. Draw a league fixture of 16 teams.

Ans. Number of teams = 16

Number of matches = N – 1 = 16 – 1 = 15

Number of teams in upper half = N/2 = 16/2 = 8

Number of teams in lower half = N/2 = 16/2 = 8

Number of byes = Next nearest power of 2 – Number of teams

= 16 – 16 = 0

Number of rounds = 4

For fixture, refer to pages 18-20 of the textbook.

9. Being sports captain of the school, prepare five important committees with their responsibilities to conduct one day Run for Health Race.

(CBSE 2015)

Ans. (i) **Publicity committee:** The publicity committee completes this preparation before the games. During the games they maintain the interest level for the games with proper advertisement. They also coordinate with the media for coverage during and after the games.

(ii) **Boarding and lodging committee:** The boarding and lodging committee takes care of accommodation and meals for the players, officials, and other members involved in the event. Before the games, they confirm the bookings. Once the tournament has started, they keep track of all boarding and lodgings, switches between departures and new arrivals, etc. They ensure that the guests are taken care of wherever they are staying. After the event is over, they are incharge of settling the bills and other fees incurred by the guests during their stay.

(iii) **Transport committee:** The transport committee handles transportation facilities for the players, officials, etc. They arrange for buses and other vehicles to take the players and officials to the venue of the games from the places where they are staying. Though preparations for logistics begin before the games start, it is during the tournament that the transport committee is at its busiest.

(iv) **Grounds and equipment committee:** This committee has the responsibility of ensuring that the grounds, fields, courts, etc. are in top condition. They also check the equipment and other gears to be used in the games to ensure that no mishap occurs and that

plenty of equipment is available for all the players. Their responsibilities start before the games. During the games, they have to maintain the grounds and equipment, and once the competition is over, they ensure that everything is in place and damaged equipment and areas reported for replacements or repairs.

(v) **Refreshment and entertainment committee:** They are different from the boarding and lodging committee. They supply drinks and refreshments to the guests, players, officials and other invitees. The entertainment programmes, such as opening song, closing dance, etc. are also arranged by this committee in advance.

F. Value -Based Question

Sports management is a process of setting objective and deciding how to accomplish them. It is the most important task of all administration. Like, there is a new school in our town. The school has a huge campus, so the school authorities have decided to introduce some sports that includes taekwondo, martial arts, archery, boxing, swimming, etc. The school has made it mandatory for each student. So that every student can participate in the competitions organised by the school. The idea of introducing such sports is appreciated by the parents of the students. Such sports help students to expand their knowledge and capabilities. These sports help to build confidence and provide healthy recreation.

Answer the following questions based on the above passage:

1. What do you understand by sports management?
2. What is the importance of sports and games for the students?
3. What are the values shown by the parents of the students in the school?

Ans. 1. Sports management can be defined as the coordination of resources, technologies, processes, personnel and situational contingencies for the efficient production and exchange of sports services.

2. Playing various sports helps them teach life skills such as teamwork, leadership, accountability, patience, and self-confidence and prepares them to face life challenges. Students get a chance to work on their physical and mental abilities to achieve goals in their life.

3. Coordination, positive attitude, decision-making, etc.

CHAPTER 2

CHILDREN AND WOMEN IN SPORTS

P. 44–49

A. Objective Type/Multiple-Choice Questions

I. Multiple-Choice Questions:

1. Which one of the following is not a cause of bad posture?

(a) Poor diet

(b) Daily exercise

(c) Poorly designed furniture

(d) Carrying heavy load

Ans. (a) Poor diet

2. The deformity shown in figure is caused due to

(a) malnutrition.

(b) illness.

(c) rickets.

(d) all of these.

Ans. (d) all of these.

3. Which of the following is not a cause of lordosis?

(a) Imbalanced diet (b) Cancer

(c) Obesity (d) Physical inactivity

Ans. (b) Cancer

4. Which of these asanas is suggested for relief from lordosis?

(a) Chakrasana (b) Vajrasana

(c) Halasana (d) Matsyasana

Ans. (c) Halasana

5. Which of the following are counted amongst the commonly known postural deformities?

(a) Spinal curvature

(b) Flat foot

(c) Bow legs

(d) All of these

Ans. (d) All of these

6. Running on an uneven terrain can cause —

(a) lordosis. (b) kyphosis.

(c) scoliosis. (d) none of these.

Ans. (c) scoliosis.

7. Which yogic poses help in correcting round shoulders?

(a) Bhujangasana and Ustrasana

(b) Gomukhasana and Padmasana

(c) Ardh Matsyendrasana and Garudasana

(d) Chakrasana and Dhanurasana

Ans. (a) Bhujangasana and Ustrasana

8. In which postural deformity is there an abnormal lateral curvature of the spine?

(a) Kyphosis (b) Lordosis

(c) Fibrosis (d) Scoliosis

Ans. (d) Scoliosis

9. What is the name of the postural deformity caused due to increase in the curve at the lumbar region? **(CBSE SP 2021 Term 1)**

(a) Knock knees (b) Bow legs

(c) Kyphosis (d) Lordosis

Ans. (c) Kyphosis

10. Which postural deformity has convexities right or left? **(CBSE SP 2021 Term 1)**

(a) Flat foot (b) Knock knees

(c) Kyphosis (d) Scoliosis

Ans. (d) Scoliosis

11. Which postural deformity is related to posterior curve of the spine? **(CBSE SP 2021 Term 1)**

(a) Scoliosis (b) Kyphosis

(c) Lordosis (d) Knock knees

Ans. (b) Kyphosis

12. Which exercise should be done to cure this deformity? **(CBSE SP 2021 Term 1)**

(a) Skipping

(b) Walking on heels

(c) Both (a) and (b)

(d) Hanging on horizontal bar

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

13. Scoliosis is a postural deformity related with —

(a) foot.

(b) leg.

(c) vertebral column.

(d) hand. **(CBSE 2020)**

Ans. (c) vertebral column.

14. Menarche is defined as the .....

(a) ending of menstrual period in women.

(b) beginning of menstrual period in women.

(c) time of pregnancy.

(d) beginning of pregnancy. **(CBSE 2020)**

Ans. (b) beginning of menstrual period in women.

15. Which of the following is not a female athlete triad? **(CBSE 2020)**

(a) Amenorrhoea (b) Eating disorder
(c) Obesity (d) Osteoporosis

Ans. (c) Obesity

16. Amenorrhoea, dysmenorrhoea and menorrhogia are the types of .....

(a) menarche.
(b) menstrual dysfunctions.
(c) osteoporosis.
(d) anorexia nervosa.

Ans. (b) menstrual dysfunctions.

17. If the menstrual periods go more than ..... days, it is oligomenorrhoea.

(a) 15 (b) 25
(c) 35 (d) 45

Ans. (c) 35

18. Weakening of bones due to loss of bone density and improper bone formation is known as .....

(CBSE SP 2022)

(a) amenorrhoea. (b) anorexia nervosa.
(c) osteoporosis. (d) lordosis.

Ans. (c) osteoporosis.

19. Which of these is an eating disorder in which patients have an obsessive fear of gaining weight?

(a) Bulimia (b) Amenorrhoea
(c) Leukaemia (d) Anorexia

Ans. (d) Anorexia

II. Match the following:

1.

List I (Postural Deformities)		**List II (Causes)**	
(a)	Scoliosis	(1)	Long distance running
(b)	Lordosis	(2)	Lack of phosphorus
(c)	Flat foot	(3)	Obesity
(d)	Knock knee	(4)	Uncomfortable shoes

Select the correct set of options:

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

Ans. (c) (i)–(1), (ii)–(3), (iii)–(4), (iv)–(2)

2.

List I – Asanas		**List II – Postural Deformity**	
(a)	Garudasana	(1)	Round shoulder
(b)	Gomukhasana	(2)	Lordosis
(c)	Chakrasana	(3)	Bow legs
(d)	Naukasana	(4)	Knock knees

Select the correct set of options:

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

Ans. (a) (i)–(3), (ii)–(4), (iii)–(1), (iv)–(2)

3.

List I – Postural Deformities		**List II – Corrective measure** **(CBSE SP 2021 Term 1)**	
(a)		(1)	
(b)		(2)	
(c)		(3)	
(d)		(4)	

Select the correct set of options:

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

Ans. (b) (i)–(1), (ii)–(4), (iii)–(3), (iv)–(2)

III. Assertion-Reason Type Questions: CBQ

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

1. A: Lordosis is the excessive inward curvature of spine in the lower back.

   R: Halasana and toe touching exercises are helpful in correcting lordosis.

2. A: Physical activities as corrective measure are very effective in functional deformity in comparison to structural deformity.

   R: Muscles and ligaments are affected in functional deformity. **(CBSE SP 2021 Term 1)**

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.

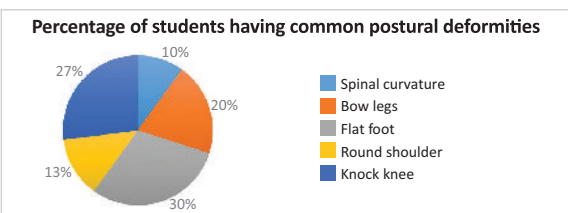
Ans. 1. (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

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

IV. Data-Based Questions: CBQ

A total of 1,000 students were clinically screened for physical deformities in order to identify and classify the various forms of physical deformities. Ninety of the students were identified with various physical deformities.

Given below is the chart which depicts the percentage of students having common postural deformities.



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

1. How many students are with physical deformity bow legs?

   (a) 30 (b) 18

   (c) 9 (d) 24

2. Which of the following is not a spinal curvature deformity?

   (a) Kyphosis (b) Scoliosis

   (c) Lordosis (d) Flat foot

3. Which postural deformities is least in number as per the given data?

   (a) Round shoulder (b) Knock knee

   (c) Spinal curvature (d) Bow legs

Ans. 1. (b) 18 2. (d) Flat foot

3. (c) Spinal curvature

V. Picture-Based Questions: CBQ

Identify the following asana and write the name of the postural deformity that it is helpful in treating:

1.

.....

.....

3.

.....

Ans. 1. Dhanurasana – Kyphosis; 2. Halasana – Lordosis; 3. Padmasana – Knock Knee; 4. Trikonasana – Scoliosis

VI. Case-Based Questions: CBQ

1. Sandy is diagnosed with postural adaptation of the spine in lateral direction. The curve is identified as convexity right. It happened due to Sandy's underdeveloped legs and carrying heavy loads on one side only.

   (CBSE SP 2021 Term 1)

   What kind of postural deformity doctors found in Sandy?

   (a) Scoliosis (b) Kyphosis

   (c) Bow Legs (d) Flat foot

Ans. (a) Scoliosis

2. Posture plays a very significant role in our daily activities. Correct posture means the balancing of the body in an accurate and proper manner. Various types of postural deformities can be identified in individuals. **(CBSE SP 2021 Term 1)**

From the following picture, the deformities seen on the left most is caused due to deficiency of which nutrient?

(a) Iron (b) Calcium

(c) Vitamin D (d) Both (b) and (c)

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

3. A female athlete has an abnormal eating behaviour and suffers from Anorexia Nervosa. On the basis of the case given, answer the following questions:

(a) What could possibly be a reason behind the behaviour?

(b) Which symptoms confirm Anorexia Nervosa?

(c) _____ can possibly help the athlete manage her condition.

(d) Anorexia Nervosa comprises _____ type of Anorexia and _____ type of Anorexia.

Ans. (a) Massive weight lossz

(b) Fatigue and insomnia

(c) Psychotherapy

(d) restricting, purging

4. In relation to the picture, answer the following questions.

(a) Which deformity is shown here?

(b) Mention two factors that lead to this condition.

(c) _____ people mostly suffer from this condition.

(d) Doing _____ (yoga asana) can correct this condition.

OR

Mention two precautionary measures for preventing this condition.

Ans. (a) Lordosis

(b) Imbalanced diet, obesity

(c) Obese

(d) Halasana

OR

Two precautionary measures:

(a) Good nutrition will help in controlling pain, disability and will keep spine healthy. Therefore, a well balanced diet must be taken.

(b) While carrying a heavy load, the person has to lean forward which results in a bad posture. Even if carrying weight, one should align her/his body in straight position.

B. Very Short Answer Type Questions

1. Define posture.

Ans. Posture can be defined as synchronising body movement which allows a quick and easy transition into the next relevant movement.

2. What do you mean by knock knee? **(CBSE 2011)**

Ans. Knock knee is a condition of postural deformity where the knees knock or rub together while walking or standing and the feet and ankles are far apart than normal.

3. What are the negative impacts of incorrect postures on a person's mental health?

Ans. Incorrect postures can have negative impacts on a person's mental health by causing physical discomfort, pain and fatigue, which can lead to decreased motivation and energy levels, lower mood, and increased stress levels. Additionally, poor posture can affect one's self-esteem and body image, leading to negative thoughts and emotions.

4. State the common postural deformities.

(CBSE 2017)

Ans. The common postural deformities are:

- Spinal curvature
- Flat Foot
- Knock Knees
- Bow Legs
- Round Shoulder.

5. What is scoliosis? **(CBSE 2011)**

Ans. Scoliosis is the abnormal lateral curvature of the spine. It can be bending, twisting or rotating of the spine.

6. What is the main cause of scoliosis?

(CBSE 2012, 2018)

Ans. The main causes of scoliosis are diseases in the joints of bones, polio, rickets, infantile paralysis, cerebral palsy and juvenile osteoporosis or

other diseases. These conditions are also often associated with poor posture, partial deafness and carrying heavy loads on one shoulder.

7. What is 'an abnormal curvature of spine at front' termed as? **(CBSE 2015)**

Ans. An abnormal curvature of spine at front is termed as lordosis.

8. Suggest any two free hand exercises for correcting round shoulder. **(CBSE 2015)**

Ans. The two free hand exercises for correcting round shoulder are:

- Place both tips of fingers on the shoulders and start encircling the elbows in a clockwise and anticlockwise direction.
- Hang on the horizontal bar for some time.

9. Suggest any two exercises for correcting flat foot. **(CBSE 2016)**

Ans. The two exercises for correcting flat foot are:

- Walking on the lateral border of the foot.
- Heel walking involves walking on the heels with whole body weight on the heels.

10. Name the deformity for which horse riding can be used as corrective measure. **(CBSE SP 2016)**

Ans. The deformity for which horse riding can be used as a corrective measure is knock knee deformity. It would help naturally in making a gap between the knees.

C. Short Answer Type-I Questions

1. What are the advantages of correct posture? **(CBSE 2011, 2012, SP 2015)**

Ans. Correct posture has numerous advantages, including reducing strain on muscles and joints, improving breathing and digestion, promoting better circulation and overall physical health. It also helps to prevent injuries and reduces the risk of developing chronic pain conditions. Proper alignment of the spine and other body parts can enhance balance, coordination, and overall athletic performance, and can even boost self-confidence and mental health by promoting positive body image and reducing stress levels.

2. How do good postures affect an individual's personality?

Ans. Good postures can positively affect an individual's personality by promoting confidence, self-esteem, and a positive body image. People who maintain good posture appear taller, more alert, and more attentive, which can create a more positive impression on others. Good posture can also enhance the way an individual carries themselves, giving off an air of poise and self-assurance. Overall, good posture can help to project a more confident, competent, and attractive personality to the world.

3. Briefly discuss any four causes of bad postures.

Ans. There are various causes of bad posture. They are as follows:

i. **Poor Diet:** A diet that lacks in sufficient amounts of nutrients is a common cause of bad posture. Our bones and muscles are weakened when we do not supply them with the nutrition they require on a daily basis. This leads to adopting incorrect postures.

ii. **Birth Defects:** In some cases, bad postures are a product of birth defects. Club and dislocation of hips are two examples.

iii. **Diseases:** Rickets, polio, infantile paralysis and chronic illnesses which have an impact on vertebral curvature are other common sources of bad postures.

iv. **Accidents:** Serious injuries from accidents can also lead to further physical deformity if the muscles and joints are permanently damaged.

4. What are some of the common postural deformities?

Ans. Some of the commonly known postural deformities are given below:

i. Spinal Curvature

ii. Flat Foot

iii. Knock Knees

iv. Bow Legs

v. Round Shoulder

5. What are the types of physical deformities related to spine?

Ans. There are several types of physical deformities related to the spine, including scoliosis (abnormal sideways curvature), kyphosis (rounded upper back) and lordosis (swayback or excessive inward curvature of the lower back). These conditions can affect posture, mobility, and overall physical health and wellbeing, and may require medical intervention or physical therapy to manage.

6. What is the main cause of bow legs?

Ans. Bow legs – a condition where the legs appear to curve outwards. Rickets is one of the main causes of bow legs. Children with rickets do not get enough calcium, phosphorus and vitamin D all of which are vital for healthy growth of bones.

7. Which yogic poses are recommended to cure round shoulders?

Ans. Several yogic poses can help correct rounded shoulders, including:

- Ustrasana
- Chakrasana
- Dhanurasana
- Bhujangasana

These poses help to stretch and strengthen the muscles of the upper back, chest, and shoulders, improving posture and reducing pain and discomfort associated with rounded shoulders. It is recommended to practice these poses under the guidance of a qualified yoga instructor.

8. What is premenstrual syndrome?

Ans. Experiencing symptoms like, pain in the back legs or abdomen, acne, irritability, mood swings, water retention, tender breasts, headaches, constipation, depression or emotional stress, etc. before the onset of menstrual periods is called premenstrual syndrome. A female may have one or more symptoms a few days before her periods.

9. List the revised terms to describe the female athlete triad.

Ans. The revised terms to describe the female athlete triad are

i. Low energy availability with or without eating disorder

ii. Dysfunction of menstruation

iii. Low bone density.

10. What kind of diet should a woman athlete suffering from osteoporosis take? Why?

Ans. A woman athlete suffering from osteoporosis should consume a diet rich in calcium, vitamin D, and other bone-healthy nutrients to support bone health and prevent further bone loss. This may include calcium-rich foods such as dairy products, leafy greens and fortified foods, as well as vitamin D-rich foods such as fatty fish, eggs and mushrooms. It is also important to consume adequate protein, which is essential for bone and muscle health. In some cases, a calcium or vitamin D supplement may be necessary to meet recommended daily intake levels.

11. What are the major eating disorders?

Ans. The major eating disorders include anorexia nervosa, bulimia nervosa and binge eating disorder. Anorexia nervosa is characterised by a distorted body image and an extreme fear of gaining weight, leading to severe calorie restriction and weight loss. Bulimia nervosa involves cycles of binge eating followed by purging behaviors such as vomiting or excessive exercise. Binge eating disorder involves consuming large amounts of food in a short period of time, often accompanied by feelings of shame and guilt.

D. Short Answer Type-II Questions

1. What is the correct posture of standing?

Ans. The correct posture for standing involves maintaining a neutral spine, with the ears, shoulders, hips, and ankles aligned vertically. The feet should be shoulder-width apart, with the weight evenly distributed between both feet. The knees should be slightly bent, and the abdominal muscles engaged to support the lower back. The shoulders should be relaxed, and the chin parallel to the ground. The gaze should be straight ahead, and the arms should hang naturally at the sides.

2. What is the correct posture of sitting?

Ans. The correct posture for sitting involves keeping the feet flat on the ground, with the knees at a 90-degree angle and the hips level with or higher than the knees. The back should be straight, with the shoulders relaxed and the chin parallel to the ground. The arms should rest comfortably on armrests or the desk, and the computer screen should be at eye level. It is important to take breaks and stand up and stretch periodically to avoid prolonged sitting.

3. Write any four advantages of correct posture.

Ans. Four advantages of correct posture are as follows:

i. Boosting Self-confidence: Proper posture can help you make a good impression and appear more attractive and confident. You look taller, slimmer and more successful when you sit and stand upright.

ii. Production of Graceful and Efficient Movements: Mobility and stability are important for efficiency of movements. The combination of muscle elasticity and range of motion of joint constitutes mobility while the ability to maintain posture and control movements freely comprises stability.

iii. Physical Fitness: Muscular strength, endurance, agility, balance flexibility, coordination and power are the components of physical fitness. Physical fitness can be

achieved through a combination of daily physical activity, exercise and a healthy diet. These can be accomplished by any individual who follows correct posture regimes.

iv. **Sociability:** Graceful movement and an upright position are means of representing your genteel outlook symbolising self-discipline, moral fortitude and dignity. It contributes to shaping a friendly and strong personality, which in turn helps you maintain a successful social life.

4. How can the postural deformities be corrected?

Ans. Postural deformities can be corrected through a combination of exercises, stretches and physical therapy. A physical therapist can work with an individual to develop a personalised plan to address their specific postural issues, including strengthening weak muscles, stretching tight muscles, and improving overall flexibility and mobility. Additionally, some adjustments to the workplace or home environment may be necessary, such as adjusting the height of a desk or chair to promote proper alignment. In some cases, medical devices may be necessary to support proper alignment and facilitate healing.

5. Write about the deformities of spinal curvature. **(CBSE 2016)**

Ans. The lumber spine is characterised by a moderate anterior hyperextension curve, i.e. everybody's spine has some form of curvature. Spinal curve helps our backs absorb shock. A healthy spine should run however straight down the centre. Sometimes, abnormal spinal curvatures are formed. They are associated with the abnormality in the formation, alignment or shape of the vertebral column or spine. These deformities are the result of carrying excessive weight beyond capacity of the body. We have three types of spinal curvatures:

- Kyphosis
- Lordosis
- Scoliosis

6. Enlist the spinal postural deformities. Explain the cause of kyphosis and precautions to avoid it. **(CBSE SP 2016)**

Ans. The list of spinal posture deformities are:

- Kyphosis
- Lordosis
- Scoliosis

Causes of kyphosis: Kyphosis is caused by malnutrition, illness, deficiency of pure air, insufficient exercises, rickets, carrying heavy loads, poorly shaped furniture, weak muscles, ageing, spinal injury, arthritis and other degenerative bone diseases and the habit of doing work by leaning forward.

Precautions: It can be prevented by following correct posture while sitting, standing and walking from an early age. Proper exercise and diet are also important measures.

7. Briefly explain lordosis, its causes and remedial and preventive measures.

Ans. Lordosis is the excessive inward curvature of spine resulting in a forward curve in the lumber region. The body becomes stiff and painful.

Causes: It can be caused because of imbalanced diet, improper environment, improper development of muscles, obesity and diseases affecting vertebrae and spinal muscles like spondylitis and osteoporosis. Physical inactivity and excessive intake of food are also the major causes.

Precautions: The following are the precautionary and remedial measures:

- Good nutrition
- By weight control especially at an early age.
- While carrying a heavy load, the person has to lean forward which results in a bad posture. Even if carrying weight one should align her/ his body in straight position.
- Stand straight with the feet and shoulder width apart.
- Bend your knee and hold your ankle. When you pull your back, tilt your pelvis forward. Hold this position for 25-30 seconds.
- Lie down on the floor facing the ceiling and put your feet on the floor; tilt your pelvic back by pushing the lower back into the floor. Lift your torso off the floor to 30° angle by supporting your neck with your hands. Come back slowly to starting position and repeat exercises 10 times.
- Lie down your back on the floor facing upward with the flexion of knees while keeping your feet flat on the floor apart from each other. Squeeze your gluteus and lift up your hip upward as much as you can. Hold for 20 to 30 seconds and return to starting position. Repeat this exercise 20 times a day.
- Toe touching exercises, sit up and halasana should be performed regularly.

- For performing head to knee exercises, remain seated on the mat with your legs stretched forward. Slowly, lower your head and try to touch your forehead to your knees. Hold to count of 10 and repeat it for 10 to 15 times.

8. Briefly explain scoliosis, its causes and preventive and remedial measures.

Ans. Scoliosis is the abnormal lateral curvature of the spine. It can be bending, twisting or rotating of the spine. People with scoliosis develop additional sideways curves on either side of the body and may be called scoliotic curves. These curves are defined in terms of their convexities and identified as right convexities and left convexities.

Primary causes: The primary causes are diseases in the joints of bones, polio, rickets, infantile paralysis, cerebral palsy and juvenile osteoporosis or other diseases.

Precautionary measures:

- An unhealthy diet and low levels of specific minerals can contribute to scoliosis progression.
- Carrying heavy things especially on one side should be avoided as it adds to natural pull of gravity and compresses the spine further.
- Long distance running on uneven terrain and prolonged running can result spinal compression, may bend or rotate your curve and cause greater risk of scoliosis progression. Thus, running should be limited.

Remedies:

- Lie down facing the ground, bend your elbow, and support your body with your toes. Squeeze your abs in and hold this position for 5 seconds. Repeat technique step 10 times.
- Scoliosis can be cured by breast stroke or butterfly technique of swimming.
- Yoga has been one of the best practices to cure any ailment and also helps in enhancing overall physical strength. It maintains a balance for the body in case of scoliosis.
- Use a firm quality mattress. Avoid the soft mattresses and use extra pillows for comfort instead.
- Sitting or standing in one place for prolonged period stresses the spine. Stretch or take a walk as often as possible. Choose a chair with good support if you sit for extended period.
- For mild scoliosis football is another great exercise that can strengthen the core muscle. All positions except goalkeeper are fine.

9. Briefly explain flat foot, its causes and preventive and remedial measures.

Ans. The appearance of flat foot is natural and common in infants. Flat foot in children usually disappears when they attain adolescence and adulthood. Persisting during the later periods of childhood becomes a postural deformity. A child with a flat foot cannot become an efficient sportsperson. They feel pain mainly in the heel area and experience difficulty in standing and walking.

Causes: It usually develops due to excessive stress on the feet. Weak muscles in feet, ankles and lower leg cannot bear body weight. Conditions related to ageing such as weakness of muscles and bones, uncomfortable shoes, foot injuries and carrying heavy loads for longer period also cause flat foot.

Precautions:

- Wearing comfortable shoes that fully support the arch and help stabilise the heel.
- Walking bare feet should be avoided.
- Losing excess weight can reduce the stress on feet.
- Infants or toddlers should not be compelled to walk at very early stage.
- Carrying heavy loads should be avoided at the early stage of development.
- High-heeled shoes should be avoided.

Remedial measures:

The exercises like walking on the toes, walking on the lateral border of the foot, making the fist with the foot relaxing them and then repeating it again, skipping on a rope, the vajrasana yogic asana and heel walking involves walking on the heels with the whole body weight on the heels.

10. Briefly explain knock knee, its causes and preventive and remedial measures.

Ans. The scientific name of knock knee is *genu valgum*. The term originates from the Latin word '*genu*' which means '*knee*' and '*valgus*' which means 'bent outside'. It is a condition of postural deformity where the knees knock or rub together while walking or standing and the feet and ankles are fat apart than normal. One having this problem faces problems in walking and running.

Causes:

- Lack of vitamin D and minerals like calcium and phosphorus.
- Problems associated with the development of bones and joints like rickets, osteoporosis and arthritis also contribute to knock knee.
- Other possible factors include obesity, flat foot, an injury or infection affecting the knees or leg bones and carrying a heavy load at an early age.

Precautions and remedies:

- Daily cycling for 20 to 30 minutes and horse riding would help naturally in making a gap between the knees.
- Keep a pillow between the legs while sleeping, walking or sitting daily for 15 to 20 minutes.
- Knock knees' special shoes, night braces and walking calipers may prevent knocking.
- Perform the padmasana and gomukhasana yogic poses daily.
- Supplement of vitamins D like cod liver oil and minerals like calcium and phosphorus should be taken for strengthening the bones.

11. Briefly explain bow legs, its causes and preventive and remedial measures.

Ans. Bow leg is simply a normal variation in leg appearance. It is a condition of physical deformity marked by an outward bowing of the leg, i.e. knees are wide apart and ankles are touching. There is a distinct space between lower legs and knees which is opposite to knock knees. When standing with feet together, the individual legs appear like an archer's bow. It may be on either side or both legs curving outward. Bowed legs are most apparent while walking, running and standing.

Causes: Rickets is the main cause of bow legs. Children with rickets do not get enough calcium, phosphorus and vitamin D all of which are vital for healthy growing of bones.

Precautions and remedies:

- Never force babies to walk at a very tender age.
- Appropriate body weight with respect to ages should be maintained.
- A balanced diet is essential for the timely growth and maintenance.
- Vitamin D should be taken in a recommended amount.
- Intake of well balanced diet is crucial for overall development and functioning of body.
- Some special shoes, casts and leg braces can be used for correcting bow legs in young children.
- Bow-legged person should try to walk for some distance on the inner edge of the feet.
- In-toeing position of walking where feet turn inward instead of pointing straight should be adopted.

12. What do you mean by round shoulders? Suggest any four physical activities for correcting round shoulders. **(CBSE 2015)**

Ans. This postural abnormality is characterised by a drooping shoulder which appears round and a slight forward bending of the back.

Causes: There are many factors which promote development of rounded shoulders:

- Heredity factors led to rounded shoulders.
- Tight clothing and shoes affect posture.
- High-heeled shoes, tight fitting clothes, wide belt, etc. change the centre of gravity which ultimately leads to poor posture.
- Poor posture of sitting, standing and walking, improper furniture, excessive weight training like bench press, bicep curls and shoulders press exercises result in rounded shoulders.
- Complete lack of exercises which are concerned with shoulders also affects the shoulders, leaving them vulnerable to rounded shoulder.

Precautions and remedies:

- Never slouch while sitting and walking and always stand flat back position.
- Those who have rounded shoulders should not wear tight fitting clothes and avoid high heeled shoes.
- Avoid sitting on faulty furniture which is not comfortable.
- Place the tips of fingers of both hands on shoulders and encircle the elbows in a clockwise and anticlockwise direction.
- Hang on the horizontal bar for some time.
- Perform yogic techniques especially chakrasana and dhanurasana on a regular basis.

13. Suggest at least two exercise methods for treating (a) lordosis, (b) round shoulder, (c) flat

feet, (d) scoliosis, (e) kyphosis, (f) knock knee, and (g) bow legs.

Ans. (a) **Lordosis:**

- First lie down in a prone position with hands under abdomen. Then keep hips and shoulder down and gently press hands upon abdomen and raise the lower back.
- Bend knees forward while allowing hips to bend back behind. Keeping the back straight and knees pointed in the same direction as feet, lower your body until thighs are parallel to floor. Extend the same from the starting position.

(b) **Round shoulder:**

- Place the tips of fingers of both hands on shoulders and encircle the elbows in a clockwise and anticlockwise direction.
- Hang on the horizontal bar for some time.

(c) **Flat feet:**

- Practise jumping on toes for some time.
- Rope skipping exercise.

(d) **Scoliosis:**

- Lie down in prone position. Raise right arm upward and left arm at the side. After this position, bring right arm towards the left over the head, by pressing down with left hand and then slide the left hip up.
- Stand erect with feet few inches apart. Lift up the left and hip. Extend the right arm and bend the arm towards the left over head while pressing the left side of rib by the left hand.

(e) **Kyphosis:**

- Lie down in a prone position with hands on hips. After that raise your head and chest several inches from the ground and tuck your chin during this exercise. Hold this position for some time and return to previous position. Repeat this exercise at least 10 times.
- Sit in a normal position with a stick held in horizontal position over the head and trunk, hands well stretched. After that lower the stick and then raise it behind head and shoulders. Repeat this exercise 10 to 12 times.

(f) **Knock knee:**

- Daily cycling for 20 to 30 minutes and horse riding would help naturally in making a gap between the knees.
- Perform the padmasana and gomukhasana daily that may counteract the effects of knock knee.

(g) **Bow legs:**

- Bow-legged persons should try to walk for some distance on the inner edge of the feet.
- Do yogic exercises like garudasana and ardha matsyendrasana regularly.

14. How does intensive exercise impact menarche?

Ans. It has been found that intensive exercise and sports activities can cause abnormalities, like delayed menarche and amenorrhoea. Such activities create physiological stress which affects the reproductive process and disrupts the normal patterns. It is true that menstrual abnormalities or other health issues are frequent among women who are involved in intensive exercises and sports activities.

15. Write briefly about menstrual dysfunctions and their effect on sports participation of female athletes. **(CBSE 2018)**

Ans. **Menstrual Dysfunction**

The average menstrual cycle consists of 21–35 days and menstrual bleeding or periods occur during the first 2–7 days of the cycle. Each cycle ends on the first day of the next menstrual bleeding. Any abnormality or irregularity in this process is termed as menstrual dysfunction. It is reported that about 9 – 30% of women suffer from menstrual dysfunction of one form or the other. Some common types of menstrual dysfunction are listed below:

Amenorrhoea

A case of delayed menarche or a case of absence of menstrual period for 6 months or more after the last period is called amenorrhoea. Sometimes, it may be absent for years.

Dysmenorrhoea

A menstrual period accompanied by sharp pain or cramps in the lower abdomen and pelvic area is called dysmenorrhoea or painful menstruation. During menstruation, the muscles of the uterus contract due to release of molecular compounds called prostaglandins and other inflammatory mediators.

Premenstrual Syndrome

Experiencing symptoms like, pain in the back legs or abdomen, acne, irritability, mood swings, water retention, tender breasts, headaches, constipation, depression or emotional stress, etc. before the onset of menstrual periods is called premenstrual syndrome. A female may have one or more symptoms a few days before her periods.

Menorrhagia or Heavy Periods

Normally the menstrual flow is heavy at first and then gradually decreases. But increased and heavy flow at regular intervals or a loss of more than 80 mL of blood during each menstrual bleeding indicates menorrhagia or heavy periods.

Irregular Periods

Mostly, menstrual cycles form a regular pattern of every 21–35 days after 1–3 years from the first bleeding or menarche. For some females, periods might skip altogether for months or come earlier than expected.

Prolonged Periods

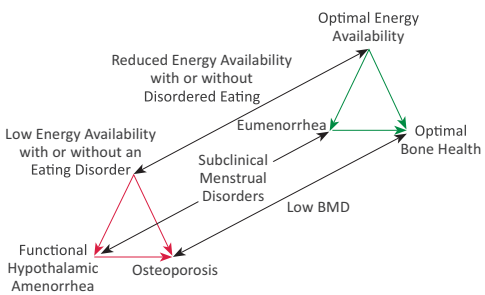
On an average, the menstrual bleeding or periods lasts about 2–7 days. Prolonged periods are longer than this duration and occur at unpredictable intervals.

Delay in Menarche

The average age of menarche in a female ranges from 12–14 years. If it is later than 14 years and above, it is a case of delayed menarche, which is also termed as primary amenorrhoea. At times, it may be as late as in 18 years of age or more.

16. Create a mind map describing female athletes triad and its causes.

Ans.



17. What is the meaning of female athletes triad? Explain any two in brief. **(CBSE SP 2022)**

Ans. It is a serious disorder of three interrelated medical conditions; energy deficiency with or without eating disorders; menstrual disturbances; and reduced bone mineral density which is likely to cause osteoporosis. The triad usually affects teenage girls who consume less calories and exercise excessively. They may develop eating disorders and become obsessed with exercise to achieve low body weight and enhance and performance in sports. Therefore, they are at greater risk of suffering from this syndrome. Energy deficiency leads to menstrual disturbances like amenorrhoea which is associated with low oestrogen levels. Low oestrogen levels contribute to a decrease in bone density and lack of calcium and vitamin D in the body. This is one of the main causes of osteoporosis. A women is likely to have the other two conditions if she is suffering from one condition of the triad

Amenorrhoea: A case of delayed menarche or a case of absence of menstrual period for 6 months or more after the last period is called amenorrhoea. Sometimes, it may be absent for years.

Osteoporosis: The National Institutes of Health (USA) defines osteoporosis as "a skeletal disorder characterised by compromised bone strength predisposing a person to an increased risk of fracture". It is a condition in which the density and strength of the bone is reduced, making it vulnerable to frequent fractures, like, stress fracture and other bone injuries. This is why osteoporosis is fatal to female athletes and their athletic careers.

18. What are the causes of osteoporosis? **(CBSE 2019)**

Ans. Osteoporosis can be caused due to:

- **Calcium Deficiency:** Calcium is a key component is building the density and strength of bones. The recommended daily requirement of calcium is 1000-1500 mg. Insufficient calcium in the body can have lifelong consequences for bones. Insufficient amount of calcium in the body causes other prgans such as heart, muscles, nerves, etc to use up the calcium stored in the bones. This results in depletion of calcium in the bones, decreasing their density and hardness, therefore causing osteoporosis.
- **Amenorrhoea:** Our bones are constantly braking down and rebuilding again to maintain their structure and strength. Oestrogen is essential to keep a balance between the two and helps absorption of calcium. Since women suffering from amenorrhoea have decreased oestrogen level in the body, it also disrupts the remodelling process in bones. Formation of abnormal bone structure and loss of calcium deposit takes place. Bones become weak, porous and prone to fractures. Therefore amenorrhoea can also cause osteoporosis.

19. Briefly explain eating disorders and classify them.

Ans. Eating disorders are a range of psychological disorders in which a person's eating behaviour

is abnormal. It may include inadequate or excessive food intake which can ultimately harm an individual's well-being. It is commonly exhibited along with conditions such as anxiety, depression and other addictive or self-destructive behaviours. It can be either Anorexia Nervosa or Bulimia Nervosa.

(a) Anorexia Nervosa is an eating disorder in which the patients have an obsessive fear of gaining weight.

(b) Bulimia Nervosa is an eating disorder in which the patient consumes a large quantity of food within a short period and subsequently ejects it from the body through vomiting, or with the help of laxatives or diuretics.

20. Explain the meaning of anorexia nervosa and cite its types.

Ans. It is an eating disorder in which the patients have an obsessive fear of gaining weight. They have an unrealistic fear of gaining weight. They have an unrealistic perception of body image and view themselves as overweight even when they are clearly underweight. It usually begins during the teens and is more common in women than men. It may become a lifelong disease without intervention at the initial stage. This disorder can have damaging health consequences such as heart problems, brain damage, multiple organ failure, osteoporosis and infertility. It should, however, be noted that anorexia nervosa does not necessarily mean loss of appetite. The patient can retain their appetite and suppress it systematically. It is of two types:

- Restricting type: In this form, consumption of food is severely restricted in various ways like maintaining a calorie count that is too low for the body's requirement. The patient reduces her/his weight effectively through obsessive rules like drastic exercising.
- Purging/Binge eating type: In this type, the restriction of food intake is accompanied by binge-eating and purging phases.

21. Explain briefly about eating disorder bulimia.

(CBSE 2019)

Ans. Bulimia nervosa or simply bulimia, is an eating disorder in which the patient consumes a large quantity of food within a short period and subsequently ejects it from the body through vomiting, or with the help of laxatives or diuretics. The term 'bulimia' means 'the ravenous hunger of an fox', a reference to the voracious appetite of the patient. When a person suffers from bulimia, she/he is under the grip of a hunger that that is induced by psychological reasons, physiological ones.

22. Explain the meaning of bulimia nervosa.

Ans. Bulimia nervosa or simply bulimia, is an eating disorder in which the patient consumes a large quantity of food within a short period and subsequently ejects it from the body through vomiting, or with the help of laxatives or diuretics. It has two types like:

- Purging Bulimia: In this type of bulimia, the patient undergoes self-induced vomiting or abuses diuretics, laxatives or enemas. The aim is to remove food from the body before it gets digested and deposited.
- Non-purging Bulimia: In this type of bulimia the individual uses methods like fasting, strict dieting or excessive exercising to get rid of the calories and to prevent weight gain.

E. Long Answer Type Questions

1. What do you mean by correct posture? Explain the standing and sitting postures.

Ans. Correct posture refers to the alignment of the body in a way that minimizes stress on muscles and joints. It involves maintaining a balance between the different body parts while standing, sitting, or lying down.

When standing, correct posture involves keeping the feet shoulder-width apart with weight distributed evenly on both feet. The shoulders should be relaxed, the chest lifted, and the chin parallel to the ground. The knees should be slightly bent and the abdominal muscles engaged to support the spine.

When sitting, correct posture involves sitting with the hips all the way back in the chair with both feet flat on the ground. The back should be straight with the shoulders relaxed, and the head aligned with the spine. The arms should rest comfortably on the armrests, and the knees should be at a 90-degree angle.

Maintaining correct posture is important to prevent pain and injury and promote overall health and well-being.

2. What are the causes of bad posture?

(CBSE 2015, 2017)

Ans. The causes of bad postures are as follows:

i. Fatigue: Sitting at the office for long hours at the end can cause damage to the spine.

ii. **Ill-fitting Clothes and Shoes:** When you wear tight clothes, the nervous system configures posture based on information received from the skin and other involved parts of the body; this may lead to the body as a whole adopting positions that are not good for the skeletal structure. Pointed heels should only be worn occasionally and not as a rule as they can cause sore calf muscles and varicose veins.

iii. **Lack of Proper Exercise:** Regular exercise promotes utilisation of muscles and bones so that they remain strong. Meanwhile, inactivity leads to the adoption of a poor posture. Improper exercises can also be damaging to the vertebral structure.

iv. **Poorly Designed Furniture:** The furniture we use shape our posture to a large degree. Too soft mattresses and chairs that do not let the back assume its normal curve are culprits behind formation of bad postures The bench and desks in the school should be of ideal height that the students can use them without putting pressure on their backs and shoulders.

v. **Carrying Heavy Load:** Carrying a heavy load, such as a weighty school backpack, puts additional stress on the spine. It can alter the posture of the person and increase postural sway. The load should be within 10% of the individual's body weight.

vi. **Obesity:** Excess weight never has positive impacts on the body. Lordosis is caused by excess abdominal weight. Obesity can further result in flat foot, bow legs and knock knee. A healthy weight helps in maintenance of a neutral posture and balanced spine.

3. Explain any five postural deformities. **(CBSE 2012)**

Ans. Any five postural deformities are as follows:

i. **Kyphosis:** This is a postural deformity characterised by an excessive forward curvature of the upper back, resulting in a rounded or hunched-over appearance. It can be caused by poor posture, osteoporosis or spinal fractures.

ii. **Lordosis:** This is an inward curvature of the lower back that results in a swayback appearance. It is commonly caused by poor posture or excessive weight on the abdomen, such as during pregnancy or obesity.

iii. **Scoliosis:** This is a lateral curvature of the spine, which can be either C-shaped or S-shaped. It often develops during childhood or adolescence, and can be caused by genetic factors or poor posture.

iv. **Round shoulders:** This postural deformity is characterised by a forward rounding of the shoulders, which can lead to a hunchback appearance. It can be caused by poor posture, weak back muscles, or spending too much time hunched over a computer or phone.

v. **Knock knees:** This is a condition where the knees angle inwards, causing the feet to be farther apart than the knees when standing with the feet together. It can be caused by genetics, poor posture, or a lack of muscle tone in the legs.

3. Explain any five postural deformities. **(CBSE 2012)**

Ans. Some of the commonly known postural deformities are:

(i) Spinal curvature

(ii) Flat foot

(iii) Knock knees

(iv) Bow legs

(v) Round shoulder

(For detailed description refer to pages 32 to 38 of the book)

4. Explain in detail the postural deformities related to spine.

Ans. There are several postural deformities related to the spine, including:

i. **Scoliosis:** a condition where the spine curves to the side, resulting in uneven shoulders, waist and hips. Scoliosis can be congenital or develop later in life and may range from mild to severe.

ii. **Kyphosis:** an excessive curvature of the thoracic spine, resulting in a rounded upper back, hunchback posture and limited mobility. Kyphosis can be caused by poor posture, osteoporosis, or congenital conditions.

iii. **Lordosis:** an excessive inward curvature of the lumbar spine, resulting in a swayback posture and an anterior pelvic tilt. Lordosis can be caused by muscle weakness or imbalances, pregnancy, or obesity.

5. Explain the causes and corrective measures for knock knee and scoliosis. **(CBSE 2019)**

Ans. Causes of Knock Knee:

- Lack of vitamin D and minerals like calcium and phosphorus.
- Problems associated with the development of bones and joints like rickets, osteoporosis and arthritis also contribute to knock knee.
- Other possible factors include obesity, flat foot, an injury or infection affecting the knees or leg bones and carrying a heavy load at an early age.

Corrective measures

- Daily cycling for 20 to 30 minutes and horse riding would help naturally in making a gap between the knees.
- Keep a pillow between the legs while sleeping, walking or sitting daily for 15 to 20 minutes.
- Knock knees' special shoes, night braces and walking calipers may prevent knocking.
- Perform the padmasana and gomukhasana yogic poses daily.
- Supplement of vitamins D like cod liver oil and minerals like calcium and phosphorus should be taken for strengthening the bones.

Causes of Scoliosis

- The primary causes are diseases in the joints of bones, polio, rickets, infantile paralysis, cerebral palsy and juvenile osteoporosis or other diseases.
- An unhealthy diet and low levels of specific minerals can contribute to scoliosis progression.
- Carrying heavy things especially on one side should be avoided as it adds to natural pull of gravity and compresses the spine further.
- Long distance running on uneven terrain and prolonged running can result spinal compression, may bend or rotate your curve and cause greater risk of scoliosis progression. Thus, running should be limited.

Corrective measures

- Lie down facing the ground, bend your elbow, and support your body with your toes. Squeeze your abs in and hold this position for 5 seconds. Repeat technique step 10 times.
- Scoliosis can be cured by breast stroke or butterfly technique of swimming.
- Yoga has been one of the best practices to cure any ailment and also helps in enhancing overall physical strength. It maintains a balance for the body in case of scoliosis.
- Use a firm quality mattress. Avoid the soft mattresses and use extra pillows for comfort instead.
- Sitting or standing in one place for prolonged period stresses the spine. Stretch or take a walk as often as possible. Choose a chair with good support if you sit for extended period.
- For mild scoliosis football is another great exercise that can strengthen the core muscle. All positions except goalkeeper are fine.

6. What are some ways in which postural deformities can be rectified?

Ans. The ways in which postural deformities can be rectified are as follows:

- We have two types of postural deformities like functional and structural. In functional deformities only the soft tissues are affected and can be corrected by various types of physical activities. On the other hand, structural deformities affect the bony structure of body. In this case physical activities are not quite helpful but with the help of surgery desired improvement and correction can be done.
- In functional deformities, physical activities are very effective especially for those elementary school years. Most of the deformities can be corrected at this tender age.
- Corrective exercises and physical activity should be encouraged and conducted during the physical and health education period. There are numerous physical activities or exercises which would be helpful in correcting postural deformities.

7. Discuss menstrual dysfunction and its types.

Ans. Menstural dysfunction: The average menstrual cycle consists of 21–35 days and menstrual bleeding or periods occur during the first 2–7 days of the circle. Each cycle ends on the first day of the next menstrual bleeding. Any abnormality or irregularity in this process is termed as menstrual dysfunction. Its types can be:

- Amenorrhoea: A case of delayed menarche or a case of absence of menstrual period for 6 months or more after the last period is called amenorrhoea. Sometimes, it may be absent for years.
- Dysmenorrhoea: A menstrual period accompanied by sharp pain or cramps in the lower abdomen and pelvic area is called dysmenorrhoea or painful menstruation.

- Premenstrual syndrome: Experiencing symptoms like, pain in the back legs or abdomen, acne, irritability, mood swings, water retention, tender breasts, headaches, constipation, depression or emotional stress, etc. before the onset of menstrual periods is called premenstrual syndrome.
- Menorrhagia or heavy periods: Normally the menstrual flow is heavy at first and then gradually decreases. But increased and heavy flow at regular intervals or a loss of more than 80 mL of blood during each menstrual bleeding indicates menorrhagia or heavy periods.
- Irregular periods: Mostly, menstrual cycles form a regular pattern of every 21–35 days after 1–3 years from the first bleeding or menarche. For some females, periods might skip altogether for months or come earlier than expected.
- Prolonged periods: On an average, the menstrual bleeding or periods lasts about 2–7 days. Prolonged periods are longer than this duration and occur at unpredictable intervals.
- Delay in menarche: The average age of menarche in a female ranges from 12–14 years. If it is later than 14 years and above, it is a case of delayed menarche, which is also termed as primary amenorrhoea.

8. Describe the relationship between menstruation, women's health and sports participation.

Ans. Relationship between menstruation, women's health and sports participation can be discussed as under:

- It is commonly believed that taking part in exercises and sports activities during menstruation causes serious damage to health and effects women's sports performance. There have been a umber of discussions on the subject and, therefore, we cannot overlook this reproductive process during training, planning, schedules and preparing for competitions, etc. But we cannot take it as final. It is simply a normal cycle every healthy woman experiences during her reproductive years. A woman has two menstrual cycles each of different schedules and it is during the second phase, i.e. luteal phase the oestrogen rises and causes changes in body temperature, metabolism and recovery time. During the bleeding period, there is a slight drop in a woman's weight but it has been found that women perform even better during their periods.
- The fact is effects of menstruation have different mechanism in different women and women does not always respond to it in similar cases in most cases. Performance can be poor but better at any time.
- Lastly, exercises and sports activities are essential for every individual to lead a healthy life and the overall well-being.

9. Discuss female athletes triad in detail.

(CBSE 2016)

Ans. It is a serious disorder of three interrelated medical conditions: energy deficiency with or without eating disorders; menstrual disturbances; and reduced bone mineral density which is likely to cause osteoporosis. The triad usually affects teenage girls who consume less calories and exercise excessively. They may develop eating disorders and become obsessed with exercise in their efforts to maintain their physique. Female athletes often restrict calorie intake and perform intensive training and exercise to achieve low body weight to enhance sports performance. Therefore, they are at greater risk of suffering from this syndrome.

Energy deficiency leads to menstrual disturbances like amenorrhoea which is associated with low oestrogen levels. Low oestrogen levels contribute to a decrease in bone density and lack of calcium and vitamin D in the body. This is one of the main causes of osteoporosis. A female is likely to have the other two conditions if she is suffering from one condition of the triad. In this endeavour, the help of coaches, trainers, physicians and fitness experts is crucial.

10. Make a table discussing eating disorders, their causes, symptoms and management.

Ans. Eating disorders are a range of psychological disorders in which a person's eating behaviour is abnormal. Eating disorders may include inadequate or excessive food intake which can ultimately harm an individual's well-being. It is commonly exhibited along with conditions such as anxiety, depression and other addictive or self-destructive behaviours. Patients of eating disorders are often obsessed with food, body image and weight. Eating disorders are serious emotional and physical problems that can have life-threatening consequences, it is dangerous to view them as a lifestyle choice. Any one can fall prey to it at any stage. It severely undermines

growth and development inflicting side effects like malnutrition and electrolyte imbalance. Major eating disorders include anorexia nervosa and bulimia nervosa.

Anorexia nervosa:	Bulimia nervosa:
Anorexia nervosa is an eating disorder in which the patients have an obsessive fear of gaining weight. **Causes of anorexia nervosa** • Psychological factors • Social factors • Biological factors **Symptoms:** • Physical symptoms • Emotional symptoms **Management of anorexia:** • It is paramount to accept the reality of the situation. The patients must realise their own condition and accept that they have to recover. The physical aspects of the treatment can only start after this acceptance. • **The** main goal is to regain the appropriate weight as per the individual's height and age. This can be achieved with the help of a psychologist and a fitness expert.	**Bulimia nervosa,** or simply bulimia, is an eating disorder in which the patient consumes a large quantity of food within a short period and subsequently ejects it from the body through vomiting, or with the help of laxatives or diuretics. **Causes of bulimia:** The factors that cause or contribute to bulimia are: • Genetics • Psychological factors • Performance pressure in sports • Social factors **Symptoms:** • The affected individuals visit the bathroom after every meal to immediately vomit and purge themselves. • They become dehydrated due to repeated vomiting. Another side effect is inflammation of the food pipe. • The individuals eat until they begin to experience abdominal pain and discomfort. • They undergo extreme exercise routines to control their weight. **Treatment of bulimia** **Psychological** treatment **Healthy** weight and proper nutrition **Exercise** correctly

F. Value-Based Question

Irfan suggested to his sister Shumaila not to slouch (lazy and drooping way) in the chair rather always sit with your back straight. He also explained the advantages and disadvantages of sitting in correct posture. Shumaila immediately followed his instructions and thanked him for telling her the benefits of sitting in a correct posture.

Answer the following questions based on the above passage:

1. What is correct sitting posture?

2. Which deformity can be developed by slouching?

3. What are the values shown by Irfan and his sister?

Ans. 1. The correct posture for sitting involves keeping the feet flat on the ground, with the knees at a 90-degree angle and the hips level with or higher than the knees. The back should be straight, with the shoulders relaxed and the chin parallel to the ground. The arms should rest comfortably on armrests or the desk, and the computer screen should be at eye level. It is important to take breaks and stand up and stretch periodically to avoid prolonged sitting.

2. Slouching can lead to the development of kyphosis, a postural deformity characterized by an excessive forward curvature of the upper back, resulting in a rounded or hunched-over appearance.

3. Sharing knowledge, care for others, etc.

CHAPTER 3

YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASES

P. 70–76

A. Objective Type/Multiple-Choice Questions

I. Multiple-Choice Questions

1. Which of the following factors does not cause obesity?

(a) Genetics

(b) Frequency of eating

(c) Psychological factors

(d) None of these

Ans. (d) None of these

2. What is/are the cause/s of obesity?

(a) Genetics (b) Overeating

(c) Physical inactivity (d) All of these

Ans. (d) All of these

3. Body Mass Index (BMI) can be calculated using the formula:

(a) BMI = weight in kg/(height in m)^2

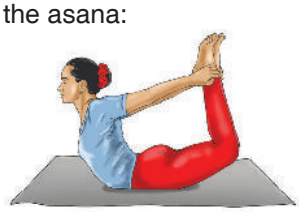
(b) BMI = (weight in kg)/(height in m)^2

(c) BMI = (weight inkg)/(height in m)^2

(d) BMI = weight in kg/height in m

Ans. (a) BMI = weight in kg/(height in m)^2

4. Identify the asana: **(CBSE SP 2022)**



(a) Paschimottanasana

(b) Halasana

(c) Vajrasana

(d) Dhanurasana

Ans. (d) Dhanurasana

5. Which of the following asanas are beneficial for diabetes?

(a) Hastasana, Vajrasana, Vrikshasana

(b) Bhujangasana, Paschimottanasana, Ardha Matsyendrasana

(c) Vajrasana, Trikonasana, Matsyasana

(d) Parvatasana, Shavasana, Chakrasana

Ans. (b) Bhujangasana, Paschimottanasana, Ardha Matsyendrasana

6. What is type 3 diabetes also known as?

(a) Insulin dependent diabetes

(b) Gestational diabetes

(c) Insulin independent diabetes

(d) Both (b) and (c)

Ans. (b) Gestational diabetes

7. What should be the normal blood pressure range at rest?

(a) 80–120 mm/Hg systolic and 60-90 mm/Hg diastolic

(b) 100–120 mm/Hg systolic and 60-100 mm/Hg diastolic

(c) 100–140 mm/Hg systolic and 60-90 mm/Hg diastolic

(d) 80–140 mm/Hg systolic and 50-90 mm/Hg diastolic

Ans. (c) 100–140 mm/Hg systolic and 60-90 mm/Hg diastolic

8. Vajrasana should not be performed if an individual is suffering from **(CBSE 2020)**

(a) hernia. (b) peptic ulcer.

(c) asthma. (d) chronic knee pain.

Ans. (a) hernia.

9. The benefits of Shavasana is/are: **(CBSE 2020)**

(a) It increases concentration power.

(b) It provides relaxation in high blood pressure.

(c) It is helpful in reducing stress.

(d) All of these.

Ans. (d) All of these.

10. ..... makes the spine flexible and increases its elasticity.

(a) Ardha chandrasana

(b) Paschimottanasana

(c) Ardha matsyendrasana

(d) Shavasana

Ans. (c) Ardha matsyendrasana

11. Which one of the following is not a cause of hypertension?

(a) Genetic causes

(b) Obesity

(c) Lack of exercise

(d) Incorrect body posture

Ans. (d) Incorrect body posture

12. Which one of the following asanas is not helpful in obesity?

(a) Tadasana

(b) Pavanmuktasana

(c) Ardha Matsyendrasana

(d) Mandukasana

Ans. (d) Mandukasana

13. Which of the following asanas is the best for asthma?

(a) Makarasana (b) Chakrasana

(c) Bhujangasana (d) Pavanmuktasana

Ans. (c) Bhujangasana

14. Gomukhasana, Vakrasana and Matsyasana are helpful in the treatment of which disease?

(a) Diabetes (b) Obesity

(c) Asthma (d) Hypertension

Ans. (c) Asthma

15. Which asana means crocodile pose in English?

(a) Vakrasana (b) Makarasana

(c) Bhujangasana (d) Ushtrasana

Ans. (b) Makarasana

16. Gomukhasana, Dhanurasana and Matsyasana are helpful in curing which disease?

(a) Diabetes (b) Hypertension

(c) Asthma (d) Obesity

Ans. (c) Asthma

II. Match the following:

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

List I – Problem		List II – Causes	
(a)	Diabetes	(1)	Allergic
(b)	hypertension	(2)	Sugar build-up
(c)	Asthma	(3)	Overeating
(d)	Obesity	(4)	Incorrect posture

Select the correct set of options:

(a) (i)–(3), (ii)–(4), (iii)–(2), (iv)–(1)

(b) (i)–(2), (ii)–(4), (iii)–(1), (iv)–(3)

(c) (i)–(1), (ii)–(2), (iii)–(3), (iv)–(4)

(d) (i)–(4), (ii)–(3), (iii)–(2), (iv)–(1)

Ans. (b) (i)–(2), (ii)–(4), (iii)–(1), (iv)–(3)

III. Assertion-Reason Type Questions: CBQ

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

A: Obesity is a physical condition in which a person accumulates fat in excess so much so that it has a negative effect on his/her health.

R: Obesity has become a universal problem.

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).

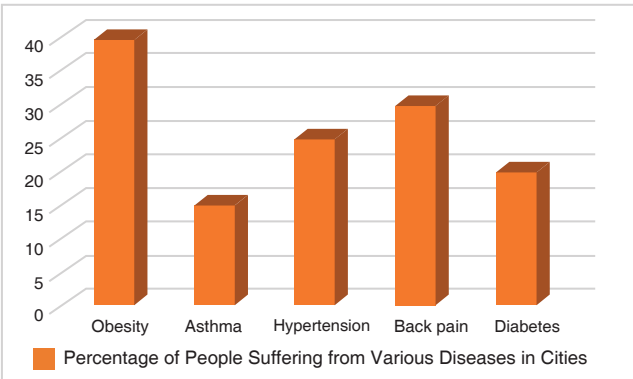
(c) (A) is true, but (R) is false.

(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 the graph which depicts the percentage of people suffering from various diseases in cities:



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

1. Which of the following reasons can cause asthma?

(a) Genetics (b) Allergens

(c) Respiratory infections (d) All of these

2. Slouching due to electric gadgets causes which type of back/neck pain?

(a) Cervical (b) Lumbar

(c) Both (a) and (b) (d) None of these

3. Which of the given diseases can be classified as insulin dependent and insulin independent?

(a) Diabetes (b) Asthma

(c) Hypertension (d) Obesity

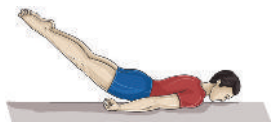
Ans. **1.** (d) All of these; **2.** (c) Both (a) and (b); **3.** (a) Diabetes

V. Picture-Based Questions: CBQ

Identify the following asanas and write their names:

1. 
.....

2. 
.....

3. 
.....

4. 
.....

Ans. 1. Gomukhasana; 2. Matsyasana;
3. Shalabhasana; 4. Paschimottanasana

2. Identify the following stick figures of asanas and write their names.

(a) 

(b) 

(c) 

(d) 

Ans. (a) Bhujangasana

(b) Trikonasana

(c) Paschimottanasana

(d) Ardha Matsyendrasana

VI. Case-Based Questions: CBQ

1. A 30-year-old hotel manager, weighing 105 kg is suffering from hypertension and is extremely prone to strokes and chronic kidney diseases.

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

(a) What could possibly be a cause of his hypertension?

(b) Which asanas should he preferably practice?

(c) Hypertension is increase in ..... level beyond normal.

(d) Four main causes of hypertension are ....., ..., ... and .....

Ans. (a) Obesity

(b) Ardha Halasana

(c) Blood pressure

(d) Genetic, unhealthy lifestyle, Obesity, lack of exercise

2. 
Figure A


Figure B

Look at the given figures and answer the following questions.

(a) Which disease(s) does the asana shown in Figure A treat?

(b) Which disease(s) does the asana shown in Figure B treat?

(c) The asana shown in Figure A is _____

(d) The asana shown in Figure B is _____

Ans. (a) Figure A is beneficial of diabetes

(b) Figure B is beneficial for obesity.

(c) Bhujangasana

(d) Ushtrasana

B. Very Short Answer Type Questions

1. What is obesity?

Ans. Obesity is a physical condition in which a person has accumulated so much body fat that it might have a negative effect on her/his health.

2. What is meant by Tadasana?

Ans. The prefix 'tada' means 'palm', so this asana is also referred to as palm tree pose. Alternatively, it is also called the mountain pose.

3. Define Katichakrasana. Why is it called the lumbar twist pose?

Ans. 'Kati' in Sanskrit means 'waist' and 'Chakra' means 'wheel'. Katichakrasana is a yoga posture that involves a seated spinal twist. It is called the lumbar twist pose because it primarily targets and stretches the muscles of the lumbar spine.

4. What do you mean by Pavanmuktasana?

Ans. Pavanmuktasana means wind removing pose.

5. Define Matsyasana.

Ans. Matsyasana is a yoga posture that involves lying on the back and arching the chest upward. It is also known as the Fish Pose and helps to stretch the chest, neck, and spine.

6. What is Paschimottanasana?

Ans. Paschimottanasana is a yoga posture that involves seated forward bending. It helps to stretch the hamstrings, spine, and shoulders. It is also known as the Seated Forward Bend Pose.

7. What do you mean by Ardha Matsyendrasana?

Ans. Ardha meaning half, matsya meaning fish, indra meaning king. It also known as Half Lord of the Fishes pose and Half Spinal Twist Pose is a seated yoga pose. It is named after Yogi Matsyendranath.

8. What is Dhanurasana?

Ans. 'Dhanur' in Sanskrit means 'bow' and 'asana' means 'pose'. In this pose, the posture of the body resembles a bow with string attached to it.

9. Define Surya Bhedhana Pranayama.

Ans. 'Surya' in Sanskrit and Hindi means the 'sun' and 'Bhedhana' means 'piercing, enter or breaking through something'. According to Yoga, the Surya nadi or pingala is the right nostril and Chandra nadi or ida is the left nostril. In this pranayama, right nostril is used for inhalation and the left nostril for exhalation. The same process is repeated in each round.

10. Which asana is also known as the cobra pose?

Ans. Bhujangasana

11. What do you mean by Supt Vajrasana?

Ans. Supta Vajrasana is the further extension of Vajrasana. It is Vajrasana in lying position.

12. Define Gomukhasana.

Ans. Gomukhasana, go means cow and mukha means mouth or face, is also known as cow face pose. It is so named because the overall position of the thighs, calves and feet of the person has the appearance of the face of a cow when viewed from above.

13. What is Kapalabhati?

Ans. In Sanskrit, 'Kapal' means 'skull' and 'Bhati' means 'to shine'. So, this can be translated as skull-shining or skull-cleaning breathing exercise. It purifies the head and the lungs.

14. What is hypertension?

Ans. An increase in blood pressure beyond normal level is called hypertension.

15. Define Ardha Halasana.

Ans. In Sanskrit 'Ardha' means 'half' and 'Hala' means 'plough'. It is a preparatory practise of Halasana. So, this is half plough pose.

16. Define Makarasana.

Ans. In Sanskrit, 'Makara' means 'crocodile'. The other name of this asana is crocodile pose or relaxation pose. In this pose, the body resembles the shape of a crocodile.

C. Short Answer Type-I Questions

1. Write any two benefits of Katichakrasana.

Ans. **i.** It stretches the waist region and thus, tones up the lower back region.

ii. It strengthens shoulders, neck, arms, abdomen, back and thighs.

2. Explain any two benefits of Ardha Matsyendrasana. **(CBSE SP 2021 Term 2)**

Ans. **i.** It brings relief from stiffness, stress and tension in the back.

ii. By opening up the chest, it greatly increases the supply of oxygen to the lungs.

3. Karthik's body weight is 20% more than his ideal body weight. He is a student of class 10. According to you, what can be the reasons for the extra weight of his body?

Ans. In my view reasons for extra weight can include a lack of physical activity, unhealthy diet, genetics, hormonal imbalances, medication side effects, stress and certain medical conditions. It is essential for Karthik to consult with a healthcare professional to determine the underlying cause of his excess weight and receive appropriate advice for a healthy lifestyle.

4. How Shavasana is beneficial for reducing hypertension?

Ans. Shavasana, also known as the Corpse Pose, can be beneficial for reducing hypertension by inducing a state of deep relaxation, which can lower blood pressure. It also helps to reduce stress, which is a significant contributor to high blood pressure.

5. What is the procedure of Dhanurasana?

Ans. **Procedure:**

1. Lie in prone position with your arms placed beside your body and feet hip-width apart and chin resting on the ground.

2. Now, gently fold your knees and try to place your ankles on your hips.

3. Hold your ankles firmly with your hands.

4. Inhaling, try to raise your thighs and chest off the ground as high as possible.
5. Now try to maintain this position for about 5–10 seconds.
6. To come back, leave your ankles and lie down straight again.

6. Write any two contraindications of Surya Bhedhana Pranayama.

Ans. **Contraindications:**

1. Do not perform this pranayama if undergone brain surgery or heart surgery.
2. People with high blood pressure should avoid this.

7. Write any two benefits of yogamudra.

Ans. **Benefits:**

i. It calms the mind and nerves, and increases blood supply to the head.

ii. It increases the ability to concentrate and improves digestive function.

D. Short Answer Type-II Questions

1. "Asanas can be used as a preventive measure". Comment **(CBSE 2020)**

Ans. Recent studies have shown that asanas improve flexibility, strength, and balance; reduce stress and the conditions associated with it. It enables us to become fully aware of our body. At the same time, it helps in reducing stress and anxiety, weight, hypertension, sleep disturbances, symptoms of lower back pain and fatigue. The flexibility of the spine increases, joints become more mobile, the lymphatic system and metabolism are stimulated, circulation of blood is boosted, blood pressure is normalized and stabilised, the nervous system is soothed and sharpened, and the skin becomes clear and fresh.

2. Make a mind map showing the role of yoga in preventing lifestyle diseases.

OR

What is the role of asanas in preventing common lifestyle diseases? **(CBSE 2019, 2020)**

Ans. Asanas play an important role in preventing the onset of many adverse health conditions. It is a simple and economical preventive measure that can help in treating most of the widespread non-communicable lifestyle diseases and improving the health of people. As a preventive measure, asanas are useful in many ways:

- Mental health can be improved by performing ';lsuitable asanas.
- Bone diseases can be prevented by performing suitable asanas.
- The various types of asanas involve twisting the body, backward and forward bends and other activities that promote digestion and help in weight loss.

3. What are some causes of obesity?

Ans. Obesity is caused by the following factors:

- Genetics: A person whose parents are obese can develop obesity.
- Overeating: Overeating is when the intake of calories is much more than what the body actually needs. This results in regular deposition of unused calories causing obesity.
- Frequency of eating: Eating frequently leads to deposition of unused calories.
- Physical inactivity: Sedentary people burn fewer calories than those who are physically active, resulting in weight gain.
- Psychological factors: For some people, emotions influence eating habits which is termed as binge eating. It occurs out of sadness, boredom, stress or anger.

4. Which asanas are helpful in reducing obesity? Explain the procedure and contraindications of any one asana. **(CBSE 2019)**

Ans. Several yoga asanas can be helpful in reducing obesity, including: Tadasana, Katichakrasana, Pavanmuktasana, Matsyasana, Halasana, Paschimottansana, Ardha Matsyendrasana, Dhanurasana, Ushtrasana, Surya Bhedhana Pranayama.

One asana that can be particularly effective in reducing obesity is the Ardha Matsyendrasana (Half Lord of the Fishes Pose). Here's how to perform this asana:

Procedure:

- Sit on the floor with your legs straight in front of you.
- Bend your right knee and place your right foot on the floor outside your left knee.
- Twist your torso to the right, placing your left elbow on the outside of your right knee.
- Hold the pose for 30-60 seconds, breathing deeply.
- Repeat on the other side.
- Contraindications for this asana include:
- People with severe back or spinal injuries should avoid this pose.

- Pregnant women should not perform this pose.
- People with digestive issues such as ulcers, hernias, or colitis should avoid this pose.

5. How do the following affect obese or overweight people?

(a) Tadasana

(b) Halasana

(c) Dhanurasana

(d) Ardha Matsyendrasana

Ans. (a) Tadasana, or the Mountain Pose, can be beneficial for obese or overweight people by improving posture, stretching the spine and legs, and increasing overall body awareness and mindfulness. It can also help to improve balance and coordination, which can be beneficial for overweight individuals who may be at higher risk of falls or injuries.

(b) Halasana, or the Plow Pose, can be helpful for obese or overweight people by stretching the spine and shoulders, toning the abdominal muscles, and stimulating the thyroid gland, which can help to regulate metabolism. However, this asana should be avoided by people with neck or back injuries, high blood pressure, or heart problems.

(c) Dhanurasana, or the Bow Pose, can be beneficial for obese or overweight people by strengthening the back and abdominal muscles, improving digestion, and stretching the entire body. However, this asana should be avoided by people with lower back injuries, hernias, or high blood pressure.

(d) Ardha Matsyendrasana, or the Half Lord of the Fishes Pose, can be helpful for obese or overweight people by stretching the spine and shoulders, improving digestion, and stimulating the abdominal organs. However, this asana should be avoided by people with severe back or spinal injuries, pregnant women, or people with digestive issues such as ulcers, hernias, or colitis.

6. How do the following affect people with diabetes?

(a) Bhujangasana

(b) Paschimottanasana

(c) Pavanmuktasana

(d) Gomukhasana

Ans. (a) Bhujangasana, or the Cobra Pose, can be beneficial for people with diabetes by stretching the spine and abdomen, stimulating the digestive organs, and improving blood circulation. It can also help to reduce stress and improve overall body awareness. However, people with lower back injuries or hernias should avoid this asana.

(b) Paschimottanasana, or the Seated Forward Bend, can be helpful for people with diabetes by stimulating the pancreas and kidneys, improving digestion, and reducing stress. However, people with lower back injuries, hernias, or high blood pressure should avoid this asana.

(c) Pavanmuktasana, or the Wind-Relieving Pose, can be beneficial for people with diabetes by massaging the digestive organs, reducing gas and bloating, and improving blood circulation. However, people with knee or hip injuries should avoid this asana.

(d) Gomukhasana, or the Cow Face Pose, can be helpful for people with diabetes by stretching the hips, shoulders, and chest, improving posture, and reducing stress. However, people with shoulder or knee injuries should avoid this asana.

7. Explain about the procedure and advantages of Bhujangasana. **(CBSE 2019)**

Ans. Procedure:

- First, you must lie flat on your stomach. Place your hands on the side and make sure the toes of each foot touches each other.
- Move your hands to the front, keeping them at the shoulder level, and place your palms on the floor.
- Balancing your body's weight on the palms, breathe in and slowly raise your head and trunk. Your arms should be bent at your elbows at this stage.
- Work towards arching your neck backward. This is done to assume the pose of a cobra with a raised hood. It is important that your shoulder blades remain firm and that your shoulders are away from your ears.
- Press your hips, thighs and feet to the floor.
- Hold the position for 15–30 seconds while breathing normally.
- To undo the pose, slowly bring your hands back to the sides. Rest your head on the ground by bringing your forehead in contact with the floor. Place your hands under your head. Then slowly rest your head on one side and breathe.

Advantages:

It puts the abdominal muscles and shoulders to work, increasing the circulation of the blood and oxygen in those regions in which they turn. It raises the body temperature and boosts the body's metabolism to the levels that are beneficial at controlling diabetes. It fights acidity, indigestion and constipation, and helps the practitioner lose weight. It enhances the function of the liver, kidney, pancreas and gall bladder. It strengthens the arms and shoulders.

8. How do the following affect people with asthma?

(a) Urdhwahastottanasana

(b) Uttanmandukasana

(c) Gomukhasana

(d) Vakrasana

(e) Bhujangasana

(f) Tadasana

(g) Matsyasana

Ans. (a) Urdhwahastottanasana, or the Raised Arms Pose, can be beneficial for people with asthma by improving breathing capacity, stretching the chest and shoulders, and reducing stress. However, people with shoulder or neck injuries should avoid this asana.

(b) Uttanmandukasana, or the Extended Frog Pose, can be helpful for people with asthma by opening up the chest and lungs, reducing stress and anxiety, and improving digestion. However, people with knee or hip injuries should avoid this asana.

(c) Gomukhasana, or the Cow Face Pose, can be beneficial for people with asthma by opening up the chest and lungs, improving posture, and reducing stress. However, people with shoulder or knee injuries should avoid this asana.

(d) Vakrasana, or the Spinal Twist Pose, can be helpful for people with asthma by improving lung function, reducing stress and anxiety, and improving digestion. However, people with back injuries should avoid this asana.

(e) Bhujangasana, or the Cobra Pose, can be beneficial for people with asthma by opening up the chest and lungs, improving breathing capacity, and reducing stress. However, people with lower back injuries should avoid this asana.

(f) Tadasana, or the Mountain Pose, can be helpful for people with asthma by improving posture, reducing stress, and improving overall body awareness. However, people with balance issues or injuries should practice this asana with caution.

(g) Matsyasana, or the Fish Pose, can be beneficial for people with asthma by improving lung capacity, reducing stress and anxiety, and stretching the chest and neck. However, people with neck or back injuries should avoid this asana.

9. How do the following affect people with hypertension?

(a) Tadasana (b) Katichakrasana

(c) Uttanpadasana (d) Ardha Halasana

(e) Bhujangasana (f) Shavasana

Ans. (a) Tadasana, or the Mountain Pose, can be beneficial for people with hypertension by improving posture, reducing stress, and improving overall body awareness. However, people with balance issues or injuries should practice this asana with caution.

(b) Katichakrasana, or the Waist Rotation Pose, can be helpful for people with hypertension by stretching the spine, reducing stress and anxiety, and improving digestion. However, people with back or neck injuries should avoid this asana.

(c) Uttanpadasana, or the Raised Leg Pose, can be beneficial for people with hypertension by improving circulation, reducing stress, and strengthening the abdominal muscles. However, people with low back pain or hernias should avoid this asana.

(d) Ardha Halasana, or the Half Plow Pose, can be helpful for people with hypertension by improving digestion, reducing stress, and stretching the lower back and legs. However, people with back or neck injuries, hernias, or high blood pressure should avoid this asana.

(e) Bhujangasana, or the Cobra Pose, can be beneficial for people with hypertension by stretching the chest and abdomen, improving circulation, and reducing stress. However, people with lower back injuries or hernias should avoid this asana.

(f) Shavasana, or the Corpse Pose, can be helpful for people with hypertension by reducing stress, improving sleep, and

promoting relaxation. However, people with mobility issues or back pain may need to modify this pose to be more comfortable.

10. Write any three benefits of Ardha Halasana.

Ans. Benefits of Ardha Halasana:

i. This asana strengthens the thigh muscles and calf muscles.

ii. It stretches leg muscles and ligaments of leg.

iii. It improves digestion and removes constipation.

11. What is Yogamudra? Write any two benefits of it.

Ans. Yogamudra is a seated yoga pose that involves bending forward and reaching the arms around the back to clasp the hands. The name of the pose comes from the Sanskrit words "yoga," meaning union or connection, and "mudra," meaning gesture or seal.

Two benefits of Yogamudra are:

i. It helps to stretch and strengthen the spine, hips, and shoulders, as well as improve flexibility and range of motion.

ii. It can help to calm the mind, reduce stress and anxiety, and improve focus and concentration.

12. Make a table showing the benefits and contraindications of any three asanas to prevent diabetes.

Ans. The following table shows the benefits and contraindications of three asanas that can help prevent or manage diabetes:

Asana	Benefits	Contraindication
Bhujangasana (Cobra Pose)	Stimulates the pancreas, improves circulation and digestion, strengthens the abdominal muscles, and reduces stress and fatigue	Avoid this pose if you have a back injury, hernia, or carpal tunnel syndrome.
Paschimottanasana (Seated Forward Bend)	Regulates the insulin levels, improves circulation, and reduces stress and anxiety.	Avoid this pose if you have a back injury, herniated disc, or hip or knee pain.
Katichakrasana (Lumbar Twist Pose)	Stimulates the pancreas and abdominal organs, improves digestion, and stretches the spine and hips.	Avoid this pose if you have a back injury, herniated disc, or sciatica.

13. Write the procedure of Anuloma-Viloma.

Ans. Procedure of Anulom-vilom:

1. Sit in Padmasana or any comfortable meditative posture.

2. Keep the head and spine erect, and close your eyes.

3. Peacefully pay attention to the breath.

4. Keep the hands on the respective knees.

5. Adopt nasagran mudra of the right hand and jnana mudra of the left hand.

6. Close the right nostril with the thumb.

7. Keeping the respiration rate slow, deep and silent, inhale through the left nostril and exhale through the right nostril.

8. Inhale through the right nostril again.

9. Keeping the respiration rate slow, deep and silent, exhale through the left nostril.

14. Explain the procedure of any two asanas for the prevention and management of hypertension.

Ans. Here are the procedures for practicing Makarasana and Shavasana for the prevention and management of hypertension:

Procedure of Makarasana:

1. Lie down on your stomach.

2. Keep the legs at a comfortable distance, with heels inside and toes pointing outward.

3. Now, fold your arms and elbows, and keep them under the head.

4. Place your head on the cushion of the arms. Close your eyes and relax.

5. To release the pose, bring the arms alongside the body and both the legs together.

Procedure of Shavasana:

1. Lie flat on the floor and make sure you are comfortable. Close your eyes.

2. Place your legs in such a way that your toes are facing sideways. The legs should be placed comfortably apart.

3. Place your arms along your body with open palms facing upwards. While doing so, leave space between your body and arms.

4. After reaching a position, direct your attention to every area of your body, starting from your toes.

5. Take slow but deep breaths, allowing your body to go into a state of intense relaxation. Avoid falling asleep.

6. Once your body feels relaxed and refreshed, roll to one side, keeping your eyes closed. Hold the position for a minute and rise to sit in Sukhasana.

7. Breathe deeply, become aware of your surroundings before you open your eyes again.

15. Write any three benefits of Sheetali Pranayama.

Ans. Benefits of Sheetli Pranayama:

i. This pranayama purifies the blood.

ii. It has a cooling effect on the body.

iii. It is beneficial for people suffering from high blood pressure.

16. List down any three asanas used for preventing asthma and write any two benefits of it.

(CBSE SP 2021 Term 2)

Ans. Three asanas are given below: These can be helpful in preventing asthma, along with their benefits:

Dhanurasana (Bow Pose): Dhanurasana helps to expand the chest and improve lung capacity, which can be beneficial for individuals with asthma. It also strengthens the back and improves posture.

Ushtrasana (Camel Pose): Ushtrasana opens up the chest and increases lung capacity, which can be helpful for individuals with asthma. It also strengthens the back, neck, and legs, and improves digestion.

Vakrasana (Twisted Pose): Vakrasana helps to stretch and strengthen the muscles around the lungs, which can improve breathing and prevent asthma attacks. It also helps to improve digestion and reduce stress and anxiety.

E. Long Answer Type Questions

1. Discuss the impact of asanas on health.

Ans. We see the health of human beings is deteriorating day by day and lifestyle diseases are spiking due to factors such as sedentary lifestyle, bad diet and increasing presence of bacteria, parasites and viruses in the environment. Globally, the challenge is to develop new and stronger antibiotics and drugs to control and kill these new viruses and bacteria. In such circumstances, asanas play an important role in preventing the onset of many adverse health conditions.

Asana is a simple and economical preventive measure that can help in treating most of the widespread non-communicable lifestyle diseases and improve the health of people. The aim of an asana is to clean the body from within, fix the internal imbalance and then strengthen the exteriors. It enables us to become fully aware of our body. It helps in reducing stress and anxiety, weight, hypertension, sleep disturbances, symptoms of lower back pain and fatigue. The flexibility of the spine increases, joints become more mobile, the lymphatic system and metabolism are stimulated, circulation of blood is boosted, blood pressure is normalised and stabilised, the nervous system is soothed and sharpened, and the skin becomes clear and fresh.

2. Briefly explain the symptoms and causes of asthma. Make a table explaining the procedure, benefits and contraindications of any two asanas to prevent asthma. **(CBSE 2018)**

Ans. Asthma is a disease associated with respiratory tracks (air ways in the lungs)

Symptoms: Excessive amount of mucus, coughing, heavy breathing, wheezing or whistling, shortness of breath, swelling of air ways, chest tightness, fatigue,

Causes of Asthma:

- Allergy
- Heredity
- Occupational Asthma (caused by inhaling fumes, gases, dust or other potentially harmful substances in work place)
- Cigarette smoking/passive smoking and polluted air
- Exposure to animals that cause allergy (pets)

Here is a table explaining the procedure, benefits, and contraindications of two asanas that can be helpful in preventing asthma:

Asana		Procedure		Benefits		Contraindications
Urdhwahastottanasana	**1.**	Stand with feet hip-width apart and arms at sides.	**1.**	Stretches the chest and lungs, improving breathing.	**1.**	High blood pressure.
	2.	Inhale and reach arms overhead, palms facing each other.	**2.**	Improves posture and digestion.	**2.**	Neck or back injury.
	3.	Lengthen through the spine and hold for several breaths.	**3.**	Reduces stress and anxiety.	**3.**	
	4.	Exhale and release arms back to sides				

Asana		Procedure		Benefits		Contraindications
Uttanmandukasana	**1.**	Kneel on the floor with toes touching and sit back on heels.	**1.**	Improves lung capacity and reduces stress and anxiety.	**1.**	Knee or ankle injury.
	2.	Place hands on lower back and inhale deeply.	**2.**	Stretches the chest and lungs, improving breathing.	**2.**	High blood pressure.
	3.	Exhale and reach arms overhead, palms facing each other.	**3.**	Strengthens the back and shoulders.	**3.**	Herniated disk.
	4.	Hold for several breaths and release.				

3. List down any four asanas used for prevention of asthma. Explain the procedure for administration of any one of them with help of a stick diagram.

(CBSE SP 2022)

Ans. **Asthma:** Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottanasana, Matsyasana, Anulom-Vilom

4. Briefly explain the administration of Pavanmuktasana along with its contraindication and draw stick diagram.

(CBSE SP 2021 Term 2)

Ans. PAVANMUKTASANA:

Procedure

1. Ideally, this asana should be performed in the morning in order to get rid of gas inside your body. It is particularly effective to do it as the first step of your morning routine since it will make other poses easier. If not, then allow at least four to six hours to pass after your meal.
2. Lie on your back on a smooth and flat surface and keep the legs straight and relax.
3. Inhaling slowly, raise your legs and bend the knees. Bring them gradually towards the chest till your thighs touch the stomach.
4. Clasp your hands around your legs to hug your knees. Lock your fingers to secure the position.
5. Next, try to touch the knee with the nose tip.
6. Hold this position for 20 to 30 seconds.
7. Exhale slowly and undo the pose after you roll from side to side about three to five times. Relax.
8. Practise 3 to 5 cycles daily.

Contraindications

1. Those who have had abdominal surgery recently or are suffering from hernia or piles must avoid this asana.

2. Pregnant women must avoid this asana in order to avoid causing stress to the body or causing complications.

3. It should also be avoided by patients of heart problems, hyper-acidity, high blood pressure, slipped disc, asthma, hernia, back and neck problems, or a testicle disorder.

4. An individual with a neck injury should practise this asana with her/his head resting on the floor, and only with the approval of a doctor.

5. Discuss the procedure, benefits and contraindications of:
   (a) Tadasana
   (b) Halasana
   (c) Dhanurasana
   (d) Ardha Matsyendrasana
   (e) Bhujangasana
   (f) Paschimottanasana
   (g) Pavanmuktasana
   (h) Sarala Matyasana
   (i) Ushtrasana
   (j) Gomukhasana
   (k) Anuloma-Viloma
   (l) Kapalbhati
   (m) Shavasana
   (n) Vakrasana
   (o) Shalabhasana.

Ans. (a) Tadasana: Stand straight with your feet together, inhale and raise your arms above your head, interlock your fingers and turn your palms upward. Benefits include improved posture, reduced back pain and increased lung capacity. Contraindications include low blood pressure and headache.

(b) Halasana: Lie down on your back, raise your legs up and over your head, placing your hands on your lower back for support. Benefits include improved digestion, reduced stress and improved thyroid function. Contraindications include neck injury, hernia and high blood pressure.

(c) Dhanurasana: Lie down on your stomach, bend your knees and grasp your ankles, inhale and lift your chest and legs up. Benefits include improved digestion, reduced stress and improved flexibility. Contraindications include hernia and high blood pressure.

(d) Ardha Matsyendrasana: Sit with your legs outstretched, bend your right leg and place your right foot on the outside of your left knee, twist your torso to the right and hold your left knee with your right hand. Benefits include improved digestion, reduced stress and improved spinal flexibility. Contraindications include spinal injury and hernia.

(e) Bhujangasana: Lie on your stomach, place your hands on the floor near your shoulders, inhale and lift your chest and head up. Benefits include improved posture, reduced back pain and increased lung capacity. Contraindications include hernia and high blood pressure.

(f) Paschimottanasana: Sit with your legs outstretched, inhale and raise your arms above your head, exhale and bend forward, reaching for your toes. Benefits include improved digestion, reduced stress and improved spinal flexibility. Contraindications include hernia and low blood pressure.

(g) Pavanmuktasana: Lie down on your back, bend your knees towards your chest and interlock your fingers around your shins. Benefits include improved digestion, reduced stress and improved spinal flexibility. Contraindications include hernia and high blood pressure.

(h) Sarala Matyasana: Sit with your legs outstretched, bend your right knee and place your right foot on the outside of your left knee, twist your torso to the right and place your left hand on your right knee. Benefits include improved digestion, reduced stress and improved spinal flexibility. Contraindications include spinal injury and hernia.

(i) Ushtrasana: Kneel on the floor, bend backwards and hold your heels with your hands. Benefits include improved posture, reduced back pain and improved lung capacity. Contraindications include neck injury and high blood pressure.

(j) Gomukhasana: Sit cross-legged, bring your left arm up and over your left shoulder, bring your right arm behind your back and clasp your hands. Benefits include improved

posture, reduced back pain and improved shoulder flexibility. Contraindications include shoulder injury and neck injury.

(k) Anuloma-Viloma: Sit cross-legged, close your right nostril with your thumb and inhale through your left nostril. Close your left nostril with your ring finger and exhale through your right nostril. Benefits include improved breathing and reduced stress. Contraindications include nasal congestion and sinusitis.

(l) Kapalbhati: Sit cross-legged, inhale and exhale rapidly through your nostrils, contracting your abdominal muscles with each exhale. Benefits include improved digestion, reduced stress and increased lung capacity. Contraindications include hernia and high blood pressure.

(m) Shavasana: Lie down on your back with your arms and legs relaxed, close your eyes and breathe deeply. Benefits include reduced stress and improved relaxation. Contraindications include low blood pressure and asthma.

(n) Vakrasana, also known as the Half Spinal Twist Pose, involves twisting the spine, stretching the back muscles, and improving digestion. To perform, sit with legs stretched and twist the upper body to one side while keeping the spine erect. Contraindications include spinal injuries, hernia, and ulcerative colitis.

(o) Shalabhasana, or the Locust Pose, strengthens the back muscles and helps improve posture. Lie on the stomach with hands under the thighs, then lift the legs and chest off the ground. Benefits include relief from lower back pain and improved flexibility. Contraindications include herniated discs, peptic ulcers, and recent abdominal surgeries.

6. Explain the procedure, benefits and contraindications of Supta Vajrasana.

Ans. Procedure of Supta Vajrasana:

i. Sit comfortably in Vajrasana. Slowly bend your back with the support of one elbow first and then with the other elbow.

ii. Allow your elbows to support the body.

iii. Now, stretch your arms behind and hold one elbow/arm with the hand of another arm.

iv. To come back to the original position, first take out your hands and place them by the sides of your body.

5. Now, with the help of elbows come to the initial position.

Benefits

- This asana improves the digestive system and removes constipation.
- It strengthens the abdominal muscles.
- It is useful in the management of high blood pressure and sciatica.
- It improves blood circulation and induces calmness.
- It is beneficial for asthma and respiratory disorders.
- It tones the spinal nerves, makes the back flexible and realigns rounded shoulders.
- It helps to fill the lungs to their maximum capacity and bring more oxygen.
- It increases the circulation in brain.
- It regulates the functioning of the adrenal gland.

Contraindications

i. Do not practise this asana if suffering from high blood pressure.

ii. Avoid this asana in the case of slipped disc or other knee or back problems and if suffering from vertigo.

7. Explain the procedure, benefits and contra-indications of Mandukasana.

Ans. Procedure of mandukasana:

1. Sit comfortably in Vajrasana.
2. Make the fists with thumbs inside.
3. Place the two fists near the navel and press the navel area.
4. Exhale and slowly bend forward from the waist and lower the chest.
5. Keep the head and neck raised and look forward in the bent position.
6. Keep the breath outside in this position and maintain it for 5–10 seconds.
7. To release this posture, inhale and slowly raise the trunk up to kneeling position.
8. Remove your fists from the navel area and sit in Vajrasana.
9. Repeat this asana 3–5 times.

Benefits

- This asana is beneficial for all organs of the body.

- Mandukasana is beneficial for the people suffering from diabetes, constipation and digestive disorders.
- It can reduce extra fat in the belly, waist and thighs and helps in weight management.
- It helps in eliminating gas from the stomach.
- It helps tone muscles of the shoulder and abdomen.

Contraindications

i. Avoid this asana in case of back pain, slipped disc or any other spine problems.

ii. Pregnant women should avoid this asana.

iii. Avoid this in case of any recent surgery of the abdomen, chest, knees or legs.

iv. In case of ankle injury, high BP, insomnia or mirgrane, this asana should be avoided.

8. Explain the procedure, benefits and contra-indications of Uttanpadasana.

Ans. Refer to page 66 of textbook.

9. Explain the procedure, benefits and contraindications of Surya Bhedhana Pranayama.

Ans. Refer to page 57 of textbook.

10. Explain the procedure, benefits and contraindications of Ardha Halasana.

Ans. Refer to pages 66-67 of textbook.

11. Write the benefits and contraindications of Makarasana.

Ans. Refer to page 67-68 of textbook.

12. Write the benefits and contraindication of Matsyasana. **(CBSE 2022)**

Ans. Refer to page 54 of textbook.

13. What is Obesity? Draw stick diagrams of any two asanas recommended to control obesity and explain their procedure. **(CBSE 2022)**

Ans. Obesity is a medical condition characterized by excessive accumulation of body fat leading to negative health consequences. It is usually determined by calculating the body mass index (BMI) of an individual, which is the ratio of body weight to the square of height. A BMI of 30 or higher is considered obese.

Two asanas recommended for controlling obesity are:

Halasana (Plow Pose)

Halasana is an excellent asana for weight loss as it stretches and tones the muscles of the entire body, especially the abdomen and thighs. Here's how to perform Halasana:

i. Lie flat on your back with your arms at your sides and your palms facing down.

ii. Inhale deeply and lift your legs off the ground, keeping them straight.

iii. Exhale and bring your legs up and over your head until your toes touch the ground behind your head.

iv. Place your hands on your back for support and hold the pose for 30 seconds to 1 minute.

v. To come out of the pose, slowly lower your legs back down to the ground, one vertebra at a time.

Paschimottanasana (Seated Forward Bend)

Paschimottanasana is a seated forward bend that helps to stretch the hamstrings, back, and spine. It also stimulates the digestive system and helps to reduce belly fat. Here's how to perform Paschimottanasana:

i. Sit on the ground with your legs stretched out in front of you and your toes pointing up.

ii. Inhale deeply and raise your arms above your head.

iii. Exhale and bend forward from the hips, reaching for your toes with your hands.

iv. Hold the pose for 30 seconds to 1 minute, breathing deeply and relaxing your body.

v. To come out of the pose, slowly roll your body up, one vertebra at a time, and return to a seated position.

Stick Diagrams:

Halasana

Paschimottanasana

F. Value-Based Question

Neeti along with her father was regular at district park in early morning. She realised that most of the children are obese. She along with her few classmates wanted to help those children. She discussed with her physical education teacher and the principal of the school. School decided to organise awareness rally for the neighbourhood.

Answer the following questions based on the above passage:

1. How can be obesity prevented? Give two ways.
2. Give any two disadvantages of obesity.
3. What values are shown by Neeti and her classmates? **(CBSE 2015)**

Ans.

1. Obesity can be prevented by avoiding overeating, and doing asanas like vajrasana and trikonasana.
2. Hypertension, liver problem.
3. Sharing knowledge, concern for others, etc.