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Sports and Nutrition — CBSE Class 12 Physical Education Chapter Test

FREE CHAPTER TEST · CLASS XII · PHYSICAL EDUCATION (048) · PATTERN OF THE CBSE SAMPLE QUESTION PAPER 2026-27

TIME ALLOWED	MAXIMUM MARKS	QUESTIONS	NAME / ROLL NO.
1½ hours	35	17 (A 9 · B 3 · C 2 · D 1 · E 2)	

GENERAL INSTRUCTIONS

Read the following instructions very carefully and strictly follow them:

1. This question paper contains 17 questions. All questions are compulsory.
2. This question paper is divided into five sections: A, B, C, D and E.
3. Section A (Q1–9) contains multiple choice questions of 1 mark each, including assertion-reason and match-the-following questions.
4. Section B (Q10–12) contains very short answer questions of 2 marks each; answer in about 60–90 words.
5. Section C (Q13–14) contains short answer questions of 3 marks each; answer in about 100–150 words.
6. Section D (Q15) contains a case study based question of 4 marks, with four sub-parts of 1 mark each; an internal choice is given in the last sub-part.
7. Section E (Q16–17) contains long answer questions of 5 marks each; answer in about 200–300 words. Each has an internal choice: attempt only one of the alternatives.
8. Draw neat diagrams wherever required.
9. This chapter test follows the section structure, question types and marks per question of the CBSE Class XII Physical Education (048) Sample Question Paper 2026-27, at half the length of the 70-mark board paper: 35 marks in 1½ hours. (In the board paper you attempt any 5 of 6 questions in Section B, any 5 of 6 in Section C and any 3 of 4 in Section E; here every question is compulsory.)
10. The answer key and the marking scheme are at the end of this booklet. Attempt the paper in 1½ hours before you look at them.

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Chapter: Sports and Nutrition · **Topics:** Balanced diet and nutrition · Macro and micro nutrients · Nutritive and non-nutritive components · Healthy weight, dieting, food intolerance and myths · Diet before, during and after competition

SECTION A

This section comprises 9 multiple choice questions (MCQs) of 1 mark each, including assertion-reason and match-the-following questions.

1. One gram of fat provides about 1

(A) 4 kcal (B) 7 kcal

(C) 9 kcal (D) 12 kcal

2. The fat-soluble vitamins are 1

(A) B and C (B) A, D, E and K

(C) A, B, C and D (D) C, D and K

3. Which mineral is a part of haemoglobin? 1

(A) Iron (B) Calcium

(C) Iodine (D) Sodium

4. Which of the following is a non-nutritive component of the diet? 1

(A) Proteins (B) Fibre (roughage)

(C) Vitamins (D) Minerals

5. Lactose intolerance is caused by a deficiency of the enzyme 1

(A) lipase (B) amylase

(C) lactase (D) pepsin

6. Oxalates in some foods mainly interfere with the absorption of 1

(A) vitamin C (B) calcium

(C) protein (D) glucose

7. Match the vitamins in List I with their functions in List II. 1

List I	**List II**
A. Vitamin A	(i) Clotting of blood
B. Vitamin D	(ii) Formation of collagen
C. Vitamin K	(iii) Absorption of calcium and phosphorus
D. Vitamin C	(iv) Vision in dim light

Choose the correct option:

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

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

8. A snack contains 50 g of carbohydrate, 10 g of protein and 10 g of fat. Its energy value is about 1

(A) 330 kcal (B) 280 kcal

(C) 360 kcal (D) 230 kcal

9. **Assertion (A):** Water is a nutrient that provides energy to the body. 1
Reason (R): Water helps to regulate body temperature and carries nutrients to the cells.

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

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

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

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

SECTION B

This section comprises 3 very short answer questions of 2 marks each (answer in about 60–90 words).

10. What is a balanced diet? Name its three functional food groups. 2

11. State any two pitfalls of dieting. 2

12. State any two food myths and the facts about them. 2

SECTION C

This section comprises 2 short answer questions of 3 marks each (answer in about 100–150 words).

13. Write the functions and two sources each of carbohydrates, proteins and fats. 3

14. What is food intolerance? Write two of its symptoms and one way of finding out which food causes it. 3

SECTION D

This section comprises 1 case study based question of 4 marks, with four sub-parts of 1 mark each.

15. Kavya, a 17-year-old distance runner, will run a 21 km race at 7 a.m. Her coach is planning what she should eat and drink before, during and after the race.

(i) About how long before the race should Kavya eat her main pre-race meal? [1]

(ii) How much fluid should she drink during long exercise, and how often? [1]

(iii) What kind of drink is advised when exercise lasts more than an hour? [1]

(iv) What should she do soon after the race to recover? [1]

OR

(iv) Which nutrient should give the largest share (about 60–70%) of the calories of an endurance athlete? [1]

SECTION E

This section comprises 2 long answer questions of 5 marks each (answer in about 200–300 words).

16. (a) Explain the importance of diet in sports before, during and after a competition. 5

OR

(b) What are micronutrients? Explain the functions and sources of any two vitamins and any two minerals.

17. (a) What is a healthy weight? Explain how one should eat for weight control. 5

OR

(b) Explain the nutritive and non-nutritive components of diet, with examples.

END OF THE QUESTION PAPER

ANSWER KEY — SECTION A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
(C)	(B)	(A)	(B)	(C)	(B)	(D)	(A)	(B)

MARKING SCHEME AND WORKED SOLUTIONS

Marks for each step are shown in brackets, as in the CBSE marking scheme. Any correct alternative method earns full marks.

Q1. Answer (C). Fat gives 9 kcal per gram; carbohydrate and protein give 4 kcal per gram.

Q2. Answer (B). A, D, E and K are fat-soluble; the B-complex vitamins and C are water-soluble.

Q3. Answer (A). Iron is part of haemoglobin and myoglobin.

Q4. Answer (B). Fibre gives no nutrients or energy but helps digestion and prevents constipation; proteins, vitamins and minerals are nutrients.

Q5. Answer (C). Without enough lactase, the milk sugar lactose cannot be digested.

Q6. Answer (B). Oxalates bind calcium and reduce its absorption (phytates bind iron and zinc).

Q7. Answer (D). A — vision in dim light (iv); D — absorption of calcium and phosphorus (iii); K — clotting (i); C — collagen (ii).

Q8. Answer (A). $50 \times 4 + 10 \times 4 + 10 \times 9 = 200 + 40 + 90 = 330$ kcal.

Q9. Answer (B). Water provides no energy (it is a non-nutritive component of the diet), so A is false; R is true: option (b).

Q10. (2 marks) Answer: all nutrients in right amounts; energy-giving, body-building, protective.
A balanced diet contains all the nutrients — carbohydrates, proteins, fats, vitamins, minerals, water and fibre — in the right amounts to meet the body's needs, with a small reserve for lean periods. [1]
Food groups [1]: energy-giving foods (cereals, roots, sugar, fats and oils); body-building foods (milk, meat, fish, eggs, pulses, nuts); protective and regulatory foods (fruits and vegetables).

Q11. (2 marks) Answer: for example quick regain of weight and slowed metabolism.
Any two [1 + 1]: very low-calorie diets are hard to keep up, so people return to old habits and regain the weight quickly; severe restriction slows the metabolism ('starvation mode') and weight loss stops; fad diets and pills fail and can cause deficiency of nutrients; it can lead to eating disorders such as anorexia nervosa; skipping meals slows metabolism.

Q12. (2 marks) Answer: any two myths, each with its fact.
Any two [1 + 1]: 'Fewer carbohydrates are always healthier' — whole grains are good; only refined carbohydrates should be limited. 'Oils have fewer calories than ghee or butter' — they have about the same calories. 'Apples and brinjals are rich in iron because they turn brown' — browning is an enzyme reaction; they are a good source of fibre, not iron. 'Milk must not be taken after fish' — this is not true. 'Water with meals hinders digestion' — it does not; it can help one eat less.

Q13. (3 marks) Answer: energy, body-building, concentrated energy; with sources.
Carbohydrates [1]: the main source of energy (4 kcal/g), especially for the brain and muscles; spare protein. Sources: cereals, rice, bread, potatoes, fruit, sugar, jaggery.
Proteins [1]: build and repair tissues; form enzymes, hormones and antibodies. Sources: milk, eggs, fish, meat, pulses, soybean.
Fats [1]: concentrated energy (9 kcal/g); carry vitamins A, D, E and K; form cell membranes. Sources: oils, ghee, butter, nuts, seeds, cheese.

Q14. (3 marks) Answer: non-allergic difficulty in digesting a food; bloating, stomach-ache; exclusion diet.
Food intolerance is a non-allergic hypersensitivity to a food, a difficulty in digesting it, which does not involve the immune system (for example lactose or gluten intolerance). [1]
Symptoms, any two [1]: stomach-ache, bloating, nausea, irritable bowel, hives, migraine, cough.
Finding the food [1]: an exclusion (elimination) diet — the suspected food is removed for 2 weeks to 2 months and then reintroduced.

Q15. (4 marks) Answer: (i) 2–4 hours; (ii) 150–250 ml every 15 min; (iii) 5–8% carbohydrate drink; (iv) fluids and carbohydrate + protein, or carbohydrates.
(i) 2–4 hours before the race. [1]
(ii) 150–250 ml every 15 minutes. [1]
(iii) A carbohydrate-electrolyte (sports) drink with 5–8% carbohydrate. [1]
(iv) Replace fluids (until her pre-race weight returns or urine is pale) and refuel with carbohydrates, then a balanced meal with carbohydrate and good-quality protein within 2 hours. [1]
OR (iv) Carbohydrates. [1]

Q16. (5 marks) Answer: pre, during and post competition guidance.
Before [2]: a meal 2–4 hours before — high in carbohydrate, moderate in protein, low in fat and fibre (about 500–1000 kcal); a light snack 30–60 minutes before (about 50 g carbohydrate); enough fluids; nothing new on competition day.
During [1½]: 150–250 ml of fluid every 15 minutes; for events longer than 60 minutes a carbohydrate-electrolyte drink (5–8% carbohydrate); for events longer than 2 hours, carbohydrate solids or liquid meals.
After [1½]: replace the fluid lost; refuel glycogen with carbohydrates (juice, fruit, curd, cereal); a balanced meal with carbohydrate and quality protein within 2 hours for repair.
OR Micronutrients are nutrients needed in small amounts — vitamins and minerals. [1] Any two vitamins [2]: **A** - vision in dim light, healthy skin (liver, egg yolk, carrots); **D** - absorption of calcium and phosphorus (sunlight, egg yolk, fish); **C** - collagen, iron absorption (citrus fruits, amla, guava); **K** - clotting of blood (green leafy vegetables). Any two minerals [2]: **calcium** - bones, teeth, muscle contraction (milk, pulses); **iron** - haemoglobin (green leafy vegetables, meat); **iodine** - thyroid hormone (iodised salt, sea food); **sodium** - fluid balance, nerve impulses (salt).

Q17. (5 marks) Answer: BMI ranges; slow loss through small meals, whole foods, less sugar and fat, exercise.
Healthy weight [2]: a weight at which BMI (weight in kg ÷ height in m²) is in the normal range; BMI 25.0–29.9 is overweight and 30.0 or more is obese. A waist above 102 cm (men) or 88 cm (women) shows central obesity.
Eating for weight control [3], any six points: aim at a slow loss of 0.5–1 kg a week through a deficit of 500–1000 kcal a day; eat small, frequent meals (3 meals and 2–3 snacks) and do not skip meals; choose whole grains, fruits and vegetables; limit sugary, fried and salty foods (pickles, papad) and soft drinks; drink water, lemon water or coconut water instead; combine diet with regular exercise.
OR Nutritive components [2] supply energy and nutrients: carbohydrates, proteins and fats (with vitamins and minerals).
Non-nutritive components [3] give no energy: *anti-nutritional factors* such as phytates (bind iron and zinc), oxalates (reduce calcium absorption), tannins, trypsin inhibitors and goitrogens; and *beneficial factors* such as phytochemicals, flavonoids and anthocyanins, besides fibre (roughage), water, spices, colours, artificial sweeteners and preservatives.

All questions are original and © Master Testing Agency. Free to download and use for personal practice; not for resale. Every answer in this paper was checked against the CBSE Physical Education XII textbook; energy values were computed from 4, 4 and 9 kcal per gram.