

CIVIL SERVICE COMMON EXAMINATION
Paper III: Subject Specialization
Food Nutrition and Dietetics

Total marks: 100
Time: 2 ½ hours

Please read the instructions carefully!

This paper has two sections, section A (50 marks) and section B (50 marks). Section A has multiple choice questions for 30 marks and four short questions for 20 marks. Section B has two questions out of which you are required to do only one question (50 marks).

SECTION A: Multiple choice (30 marks): Please circle the correct answer.

1. PEM stands for:-

- a. Protein Energy Measurement
- b. Protein Energy Malnutrition
- c. Protein Energy Malfunction
- d. All of above

2. Total Energy Expenditure is defines as:-

- a. Basal metabolic rate x Physical activity level
- b. Basal metabolic rate x Physical activity ratio
- c. Basal metabolic rate x Total energy expenditure
- d. None of above

3. Body Mass Index (BMI) cut off points for defining obesity grade I is:-

- a. 18 – 24.9
- b. 25 – 29.9
- c. 30 – 34.9
- d. 35 - 39.9

4. To prevent anaemia, World Health Organization recommends daily iron folic supplementation of during pregnancy.
 - a. 60 mg elemental iron & 400 microgram folic acid
 - b. 120 mg elemental iron & 400 microgram folic acid
 - c. 60 mg elemental iron & 200 microgram folic acid
 - d. 200 mg elemental iron & 200 microgram folic acid

5. According to current United Nations recommendations (WHO, 2001), infants should be exclusively breastfeed for first of life to achieve optimal growth, development and health.
 - a. Four to six months
 - b. Four months
 - c. Six months
 - d. Three to six months

6. Bhutan's breastfeeding policy also rectified the SAARC code for the protection of breastfeeding and young child nutrition. The breast feeding policy of Bhutan currently recommends of exclusive breastfeeding:
 - a. Four to six months
 - b. Four months
 - c. Five months
 - d. Six months

7. Another name for Vitamin B₂ is:-
 - a. Niacin
 - b. Riboflavin
 - c. Biotin
 - d. Folacin

8. Which of the following is not considered a fat soluble vitamin?
 - a. Vitamin A
 - b. Vitamin B₁
 - c. Vitamin K
 - d. Vitamin E

9. Which of the following is not considered a water soluble vitamin?
- Vitamin B3
 - Vitamin C
 - Vitamin D
 - Vitamin B₁₂
10. Diabetes is caused by:-
- Consumption of Chilli
 - Vitamin supplement
 - Excessive intake of sugar
 - Excessive intake of fats
11. Which of the following vitamin will be the most common in oils from cereals seeds, salad oils, margarine and shortenings?
- Vitamin A
 - Vitamin D
 - Vitamin E
 - Vitamin C
12. The action of pepsin is to:-
- Curdle milk
 - Breakdown polypeptides into amino acids
 - Breakdown proteins to peptones
 - To initiate the Krebs cycle
13. Excessive intake of simple sugar could result in:-
- Anorexia
 - Constipation
 - Obesity
 - Bulimia
14. The symptoms of hypoglycaemia include:-
- Disturbed behaviours, over activity
 - Increased thirst, frequent urination
 - Impulsiveness, aggressiveness
 - Dizziness, hunger

15. Hydrochloric acids activates the enzyme:-
- a) Trypsin
 - b) Renin
 - c) Lactase
 - d) Pepsin
16. Tea interferes with the absorption of:-
- a) Iron
 - b) Zinc
 - c) Calcium
 - d) Vitamin D
17. Calcium interferes with the absorption of:-
- a) Iron
 - b) Zinc
 - c) Calcium
 - d) Vitamin D
18. Stunting in children under five is a major problem in Bhutan. The 1999 national anthropometric study indicates that of the children are stunted.
- a) 19%
 - b) 37%
 - c) 40%
 - d) 56%
19. Another name for vitamin C is:
- a) Riboflavin
 - b) Citric acid
 - c) Ascorbic acid
 - d) Panthothenic acid

20. Bhutan was the first country in the south east Asia region to have achieved sustainable elimination of iodine deficiency disorders in the year:-
- a) 1990
 - b) 1999
 - c) 2003
 - d) 2005
21. During the regular growth monitoring programme in a Basic Health Unit, the health worker uses _____ to monitor the child's nutritional well being.
- a) Height for age
 - b) Weight for age
 - c) Height for weight
22. Energy value for one gram of protein is:-
- a) 4 kJ
 - b) 9 kJ
 - c) 16 kJ
 - d) 37 kJ
23. Most animal fat are highly:-
- a) Saturated
 - b) Monounsaturated
 - c) Poly unsaturated
 - d) None of above
24. World Health Organization defines low birth weight as a child with:-
- a) \leq 500 grams at birth
 - b) \leq 1500grams at birth
 - c) \leq 2500grams at birth
 - d) \leq 3500grams at birth

25. In nutritional epidemiology the term "Reliability" is synonym to:-
- a) Validity
 - b) Bias or systematic variation
 - c) Inconsistency
 - d) Reproducibility
26. Daily iodine requirement for normal adult is:-
- a) 50 microgram
 - b) 150 microgram
 - c) 700 microgram
 - d) 1000 microgram
27. Which of the following vitamin is not found in plant food?
- a) Vitamin K
 - b) Vitamin E
 - c) Vitamin D
 - d) Vitamin A
28. The configuration and molecules found in the _____ is what differentiates one amino acid from another.
- a) carboxyl group
 - b) side chain
 - c) an amine group
29. Which one of the following is non essential amino acid:-
- a) Histidine
 - b) Tryptophan
 - c) Leucine
 - d) Non of above
30. Mr. Karma weighs 65 kilogram and his height is 175 cms. His Body Mass Index (BMI) is:-
- a) 21.2
 - b) 24.5
 - c) 26.5
 - d) 30.2

SECTION A

Answer all four questions (5 marks each)

1. Discuss the role of the following in the diet:
 - a. Protein
 - b. fat

2. Define the following terms.
 - a. Basal metabolic Rate
 - b. Recommended daily allowances
 - c. Food base dietary guideline
 - d. Biological Value of Protein
 - e. Iron bioavailability

3. Select one macronutrient and one micronutrient and discuss their role in light of the current Bhutanese dietary habit or pattern?

4. Discuss the maternal nutritional needs during pregnancy.

SECTION B

This section contains two questions and candidates are required to answer only one question. (50 Marks)

QUESTION I

At present, there is no dietician in the country and therefore there is lack of standard dietary guideline for general population and for the hospital inpatients. Ministry of Health approaches you to develop a dietary guideline for the hospital inpatients.

- a) How would you go about with the development of the dietary guideline for the hospital inpatients? (This refers to the methodology for developing the dietary guideline.)
- b) Outline your dietary guideline for patient requiring disease specific diet like diabetes patients and for the general hospital inpatients.
- c) Health care services are provided free in Bhutan, the inpatient diets are also free. Therefore, discuss the sustainability of your dietary guideline both for diabetes patient and for the general inpatients.
- d) At the moment Bhutan does not have a Food Based Dietary Guideline (FBDG). Discuss why Bhutan need to develop the FBDG? If you are entrusted with its development, how would you go about? Explain.
- e) Discuss life style related diseases as an emerging nutritional problem in Bhutan.

OR

Question II

UNICEF approaches you to plan their five year master plan of operation for Nutrition Project. You are asked to formulate a master plan of operation for five years which will be implemented by UNICEF and then evaluated at the end of five year. They provide you with the following information (table 1).

Table 1: Age wise tabulation of malnutrition in children underfive.

| Age groups | Weight for age | Height for age | Height for weight |
|-------------------------|----------------|----------------|-------------------|
| 0-6 months | 40% | 10 % | 1% |
| 7-36 months | 25% | 60 % | 2% |
| 37-60 months | 10% | 55 % | 0.5% |
| Total prevalence | 25% | 41 % | 1.1% |

After reviewing the above case, answer the following five questions.

- a) Discuss the general causes of malnutrition and obesity in a population?
- b) Explain the significances of each of the anthropometric indicators, indicating their relative strength and weakness.
- c) With the help of above information, interpret the nutritional status of the children for each age group and explain.
- d) Recommend to UNICEF three strategies for combating the above nutritional status and justify your strategies. Also advice minimum 3 indicators considered important to assess the impact of your recommended strategies.
- e) UNICEF strongly advocates and promotes exclusive breastfeeding. At the moment, the practise of exclusive breastfeeding is very low in Bhutan. In your opinion, do you think that we can promote and implement exclusive breastfeeding? If so, how?