

**ROYAL CIVIL SERVICE COMMISSION
CIVIL SERVICE COMMON EXAMINATION (CSCE) 2009
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECILIZATION PAPER FOR FOOD AND NUTRITION

DATE : 8TH NOVEMBER 2009
TOTAL MARKS : 100
EXAMINATION TIME : 2.5 HOURS
READING TIME : MINIMUM 15 MINUTES (PRIOR TO EXAM TIME)

PLEASE READ THE INSTRUCTIONS VERY CAREFULLY

This paper has two sections. Section A (50 marks) and section B (50 marks).

Section A has:

- I. Multiple choice question for 30 marks
- II. 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.I: Multiple Choices: Please circle the correct answer.

1. If a product is said to be "Sugar Free" it contains how much sugar?
 - a. none.
 - b. less than 0.5 grams of sugar per serving.
 - c. no more than 40 kcal per serving.
 - d. less than 10.0 grams.

2. Year 2009 National Nutrition Survey revealed that the stunting rate in children under five using the WHO new child growth standard is.
 - a. 19%
 - b. 37%
 - c. 40%
 - d. 56%

3. An Adequate Intake:
 - a. is set for nutrients for which there not enough research to establish an RDA.
 - b. gives a range for the RDA.
 - c. is used to set the Daily Values.
 - d. reflects weekly needs

4. Body Mass Index (BMI) cut off points (kg/m²) for defining obesity grade I is:-
 - a. 18 – 24.9
 - b. 25 – 29.9
 - c. 30 – 34.9

5. World Health Organization recommends exclusive breastfeeding for a duration of:
 - a. Four to six months
 - b. Six months
 - c. Four months

6. Another name for Vitamin B₂ is
 - a. Niacin
 - b. Riboflavin
 - c. Biotin

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

8. One gram of protein is equal to ----- of energy.
 - a. 3 kcals
 - b. 4 kcals
 - c. 6 kcals

9. The action of pepsin is to:
- Curdle milk
 - Breakdown polypeptides into amino acids
 - Breakdown proteins to peptones
10. Calcium interferes with the absorption of:-
- Iron
 - Zinc
 - Calcium
 - Vitamin A
11. School children in Bhutan are supplemented every Thursday with:
- 120 mg elemental iron + 400 microgram folic acid
 - 60 mg elemental iron + 400 microgram folic acid
 - 60 mg elemental iron + 200 microgram folic acid
12. Bhutan was the first country in the south east Asia region to have achieved
- Iron deficiency Anemia
 - Folate deficiency
 - Sustainable elimination of iodine deficiency disorders
13. During the regular growth monitoring programme in a health centre, which of the following indicator is used to monitor the child's nutritional well being
- Height for age
 - Weight for age
 - Height for weight
14. Hemoglobin levels below which anemia is present in pregnant women:
- 10 g/l
 - 11 g/l
 - 12 g/l
15. World health Organization defines low birth weight as a child with less than:
- Less than 1000 grams at birth
 - Less than 1500grams at birth
 - Less than 2500grams at birth
16. Food sources of Omega 6 fatty acids are
- Seeds, Nuts, Grain
 - Vegetable Oils
 - All of Above
17. Divides fat into small pieces to assist fat enzymes
- Digestive enzymes
 - Water and electrolytes
 - Bile

18. Amino acids participate in protein building through a process known as
- Anabolism
 - Metabolism
 - Catabolism
19. Nutrition Program in the Ministry of Health is under:-
- Department of Medical services
 - Department of Public Health
 - Communicable Disease Division
20. Known as essential fatty acids since they cannot be synthesized by the body
- Monounsaturated fats
 - Saturated fats
 - Polyunsaturated fats
 - Unsaturated fats
- 45) Stored in liver and muscles for quick energy to be used at a later time.
- Glycogen
 - Glucose
 - Galactose
 - Fat
21. _____ is the body's primary source of energy
- Fructose
 - Sucrose
 - Glycogen
 - Glucose
22. Lycopene is a phytochemical which is provided by eating this type of vegetables.
- Orange
 - Red
 - Green
 - Yellow – Green
23. If you have a deficiency of Vitamin D, the disease will be.
- Pellagra
 - Beriberi
 - Scurvy
 - Rickets
24. Total fat intake should be:-
- 45 – 65% of total calories
 - 20-35% of total calories
 - 30-45% of total calories
 - 10 – 25% of total calories

25. Functional foods:-
- are rich sources of vitamins, therefore very functional.
 - provide health benefits beyond those supplied by the traditional nutrients.
 - are foods that contain one main functional ingredient.
 - are only available from animal food sources.
26. The concept of low energy dense foods is based upon
- consuming very few calories each day to speed up weight loss.
 - avoiding any foods with fiber since fiber is not digested and absorbed
 - eating foods that weigh a lot but contribute few calories.
 - limiting fluid intake to prevent water retention in the body
27. The RDAs for energy are based on:
- average needs.
 - average needs plus a 30 percent margin of safety.
 - ninety percent of average needs.
 - double the minimum requirement.
28. The Food Guide Pyramid provides the full allowance of:
- all essential nutrients.
 - all essential nutrients except energy.
 - most of the essential nutrients, along with energy.
 - most of the essential nutrients, except energy, for many men.
29. At the household level, what is the minimum required of iodine in salt.
- 10 PPM
 - 15 PPM
 - 25 PPM
30. Reading food labels helps consumers:
- identify amounts of salt or sodium in the product.
 - determine the sugar content of the product.
 - determine the amount and kind of fat in the product.
 - all of the above.

Section A. II: Answer all four questions (Total 20 Marks).

1. Discuss the use of anthropometry to assess growth failure in children under five. (5 marks)

2. Discuss the use of socio-economic data and vital statistics in surveys of nutritional status (5 marks).

3. Explain each of the following? (5 marks)

BMR:

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Lysine:

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Collagen:

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Retinol:

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Calorie:

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4. Discuss the strength and weakness of three dietary assessment methods (5 marks)

SECTION B: ANSWER ONLY ONE QUESTION

Question 1 (50 Marks)

Ministry of Health has entrusted you with the development of study design for 2010 National Anthropometric Survey. Please develop the study design using the guide given below and focus your answer according to the marks allocated. The emphasis is on the study design.

- a. Introduction (5 marks)
- b. Rationale (5 marks)
- c. Study design: (30 marks)
 - i. Target groups that you proposed and why?
 - ii. What tools you will use and why?
 - iii. Calculate the sample size and explain the parameters involved and how you derived at the figure. (Use 11% underweight prevalence).
 - iv. Explain how you will sample the required number of children from 20 districts.
- d. Data collection process (5 marks)
- e. How you will analyse. (5 marks)

Or

Question II (50 Marks)

- a) Explain the significance of iodised salt coverage at household, retail and production level. Please discuss the advantage and disadvantage of using Total Goitre Rate as an indicator in the control of Iodine Deficiency Disorders. (25 marks)
- b) Table 1 (given below) shows the national nutritional status since 1988 to most recent study conducted in 2009. Please give your comments to the Ministry of Health in the light of both the NCHS and WHO new standard reference. (25 marks).

Table 1: Prevalence of malnutrition at national level and comparison with past nutrition studies

	1988 (n=3273)	1999 (n =2981)	2009 (n=2376)	
	NCHS	NCHS	NCHS	WHO Standard
Wasting	4.1%	2.6%	4.6%	4.6%
Stunting	56.1%	40%	30.2%	37.0%
Underweight	37.9%	18.7%	15.2%	11.1%

ANSWER SHEET FOR SECTION B