

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2025
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALISATION PAPER FOR NUTRITION AND DIETETICS

Date	:	October 11, 2025
Total Marks	:	100
Writing Time	:	150 minutes (2.5 hours)
Reading Time	:	15 Minutes (prior to writing time)

GENERAL INSTRUCTIONS:

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
 - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions
Part II - 6 Short Answer Questions
All questions under SECTION A are COMPULSORY.
 - **SECTION B** consists of two QUESTIONS. All the questions under SECTION B are COMPULSORY.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the correct Section, Part and Question Number will NOT be evaluated and no marks would be awarded.
6. Begin each Section and Part in a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **8 printed pages**, including this instruction page.

GOOD LUCK

SECTION A

PART I: Multiple Choice Questions (30 marks)

Choose the correct answer and write down the letter of your chosen answer in the Answer booklet against the question number e.g. 31 (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. Which of the following is the best source of heme iron?
 - a) Spinach
 - b) Chicken liver
 - c) Beans
 - d) Lentils
2. What is the primary dietary recommendation for managing hypertension?
 - a) Increase saturated fat intake
 - b) Increase sodium intake
 - c) Follow the DASH diet
 - d) Consume high-cholesterol foods
3. Which macronutrient is most calorie-dense?
 - a) Protein
 - b) Carbohydrates
 - c) Fat
 - d) Alcohol
4. Which vitamin deficiency is most associated with night blindness?
 - a) Vitamin A
 - b) Vitamin B12
 - c) Vitamin D
 - d) Vitamin E
5. A gluten-free diet is primarily indicated for which condition?
 - a) Crohn's disease
 - b) Irritable bowel syndrome
 - c) Celiac disease
 - d) Ulcerative colitis
6. Which of the following foods is contraindicated in a patient with galactosemia?
 - a) Soy milk
 - b) Cow's milk
 - c) Rice
 - d) Bananas
7. Which mineral is critical in preventing neural tube defects in newborns?
 - a) Calcium
 - b) Zinc
 - c) Iron
 - d) Folate

8. Which is the most effective intervention to prevent iodine deficiency?
 - a) Promote eating seafood
 - b) Iodine injection
 - c) Universal salt iodization
 - d) Multivitamin distribution
9. Stunting in children is best described as:
 - a) Low weight for height
 - b) Low weight for age
 - c) Low height for age
 - d) High BMI for age
10. Which foodborne illness is most likely in improperly prepared fermented foods?
 - a) Typhoid
 - b) Botulism
 - c) Salmonella
 - d) Norovirus
11. Which of the following macronutrients provides the most energy per gram?
 - a) Protein
 - b) Carbohydrate
 - c) Fat
 - d) Fiber
12. Which vitamin is most sensitive to light exposure?
 - a) Vitamin A
 - b) Vitamin B12
 - c) Vitamin C
 - d) Riboflavin
13. Which of the following is an essential fatty acid?
 - a) Palmitic acid
 - b) Oleic acid
 - c) Linoleic acid
 - d) Stearic acid
14. The main function of dietary fiber includes:
 - a) Providing energy
 - b) Promoting calcium absorption
 - c) Supporting bowel movement
 - d) Enhancing iron uptake
15. Vitamin K is primarily required for:
 - a) Vision
 - b) Wound healing
 - c) Bone formation
 - d) Blood clotting

16. Basal Metabolic Rate (BMR) is influenced by all of the following EXCEPT:
- a) Age
 - b) Gender
 - c) Sleep duration
 - d) Body composition
17. Which type of diet is recommended for a patient with chronic kidney disease?
- a) High-protein diet
 - b) Low-protein, low-potassium diet
 - c) High-sodium diet
 - d) Gluten-free diet
18. Glycemic Index is a measure of:
- a) Protein content in food
 - b) Blood sugar rise after carbohydrate intake
 - c) Fat content in food
 - d) Sodium content in food
19. Enteral nutrition is preferred over parenteral nutrition because:
- a) It is more expensive
 - b) It bypasses the gut
 - c) It maintains gut integrity
 - d) It reduces food allergies
20. Diabetic patients should aim to include which type of carbohydrates?
- a) Simple carbohydrates
 - b) High GI carbohydrates
 - c) Complex carbohydrates with fiber
 - d) Refined carbohydrates
21. Which food helps improve iron absorption?
- a) Tea
 - b) Milk
 - c) Lemon
 - d) Rice
22. A patient recovering from surgery should have a diet rich in:
- a) Carbohydrates
 - b) Proteins
 - c) Fats
 - d) Vitamins only
23. The recommended daily salt intake for adults as per WHO guidelines is:
- a) 10 grams
 - b) 8 grams
 - c) 5 grams
 - d) 3 grams

24. Which of the following is a waterborne disease?
- a) Tuberculosis
 - b) Dengue
 - c) Cholera
 - d) Influenza
25. Which of the following best defines food fortification?
- a) Adding flavor to food
 - b) Adding nutrients to food during processing
 - c) Removing calories from food
 - d) Replacing fat with protein
26. What is the recommended daily intake of protein for a patient undergoing hemodialysis?
- a) 0.8 g/kg body weight
 - b) 1.0 g/kg body weight
 - c) 1.2-1.5 g/kg body weight
 - d) 2.0 g/kg body weight
27. What is the purpose of conducting a Hazard Analysis Critical Control Point (HACCP) plan in a foodservice operation?
- a) Reduce food cost
 - b) Ensure nutritional adequacy
 - c) Prevent foodborne illness
 - d) Improve employee satisfaction
28. Which lab value is most commonly monitored in iron deficiency anemia?
- a) Serum calcium
 - b) Serum ferritin
 - c) Serum albumin
 - d) Serum bilirubin
29. Refeeding syndrome is most likely to occur in:
- a) A patient with high cholesterol
 - b) A well-nourished patient receiving supplements
 - c) A severely malnourished patient started on aggressive feeding
 - d) A patient with type 1 diabetes
30. Which hormone is primarily responsible for lowering blood glucose levels after a meal?
- a) Glucagon
 - b) Insulin
 - c) Cortisol
 - d) Epinephrine

PART II – Short Answer Questions (20 marks)

Answer ALL the questions. Mark for each sub-question is indicated in the brackets.

1. Discuss the role of diet in prevention and management of Type 2 Diabetes Mellitus. **(2.5 marks)**
2. Discuss the nutritional management of a patient with chronic kidney disease (CKD). **(2.5 marks)**
3. Explain the rationale behind the DASH diet for managing hypertension. **(2.5 marks)**
4. What are the dietary modifications required for peptic ulcer disease. **(2.5 marks)**
5. Differentiate between High-Density Lipoprotein (HDL) and Low-Density Lipoprotein (LDL) in terms of structure, function, health implications, and dietary influences. **(5 marks)**
6. Describe the steps involved in assessing a client's nutritional needs and identifying any dietary restrictions. **(5 marks)**

SECTION B: Case Study (50 marks)

This section consists of two questions carrying 25 marks each. ALL the questions are compulsory. Mark for each sub-question is indicated in the brackets.

QUESTON 1

(25 marks)

Patient Information:

- **Name** : Mr. Sonam Wangchuk
- **Age** : 68 years
- **Gender** : Male
- **Height** : 165 cm
- **Weight** : 75 kg
- **BMI** : 27.5 kg/m² (Overweight)
- **Medical History:**
 - Type 2 Diabetes Mellitus (T2DM)
 - Ischemic Stroke (ICU admission)
 - Hypertension
 - Dyslipidemia
- **Current Condition:**
 - Unconscious and receiving nasogastric (NG) tube feeding
 - Blood glucose level: 240 mg/dL
 - HbA1c: 8.5%
 - Creatinine: Normal
- **Lifestyle (before stroke):**
 - Sedentary, diet high in refined carbohydrates and saturated fats
 - Poor glycemic control, irregular meal timings

1. Identify two dietary concerns based on Mr. Sonam Wangchuk's lifestyle and medical history. **(2 marks)**
2. Explain why it is important to monitor carbohydrate intake in Mr. Sonam Wangchuk's nutrition therapy. **(3 marks)**
3. Write one PES (Problem, Etiology, Signs/Symptoms) statement for his diabetes. **(3 marks)**
4. Write one PES statement related to his ICU admission and feeding status. **(3 marks)**
5. Suggest two considerations when initiating nutrition support via NG tube for Mr. Sonam Wangchuk. **(4 marks)**
6. Recommend two dietary modifications to support stroke recovery and prevent recurrence. **(4 marks)**
7. Propose one strategy to improve his glycemic control after discharge. **(3 marks)**
8. Identify one short-term and one long-term nutrition goal for Mr. Sonam Wangchuk. **(3 marks)**

QUESTION 2

(25 marks)

Patient Information:

- **Name** : Mr. Sangay Dorji
- **Age** : 60 years
- **Height** : 168 cm
- **Weight** : 64 kg
- **BMI** : 22.7 kg/m²
- **Surgery** : Right hemicolectomy for colorectal cancer
- **Complications**: Wound dehiscence, signs of infection (fever, elevated CRP, high WBC)
- **Oral Intake** : <30% of estimated needs, complaints of nausea, early satiety
- **Labs** : Albumin 2.8 g/dL, Hb 10.5 g/dL

1. Identify two dietary concerns based on Mr. Sangay Dorji's post-operative condition. **(3 marks)**
2. Explain the significance of his low albumin level in the context of post-operative recovery. **(3 marks)**
3. Discuss two potential dietary strategies to improve Mr. Sangay Dorji's nutritional status. **(4 marks)**
4. Propose a full diet plan for Mr. Sangay Dorji, including energy and macronutrient calculations to support wound healing and recovery. **(10 marks)**
5. Identify one short-term and one long-term nutritional goal for Mr. Sangay Dorji. **(3 marks)**
6. Mention one way to monitor Mr. Sangay Dorji's progress in nutritional recovery. **(2 marks)**

TASHI DELEK