



All India Institute of Medical Sciences, Kalyani
B.Sc. (Hons) Nursing First Year Examination, August 2024
Time: 3 Hrs. NUTRITION & BIOCHEMISTRY Marks: 75

INSTRUCTIONS:

- Answer Nutrition & Biochemistry Section in separate answer booklets.
- Draw diagram wherever necessary

NUTRITION (45 MARKS)

Answer any ONE of the following:

[1×10=10]

1. a. Define Basal Metabolic Rate (BMR) and discuss factors affecting BMR. (5)
b. Discuss principles and methods of cooking. (5)
2. a. Plan and calculate a balanced diet for adolescent girl and discuss the role of nurse in prescribing diet for her. (5)
b. Differentiate Kwashiorkor and Marasmus in terms of causes, symptoms and diet therapy. (5)

Answer any FIVE of the following:

[5×5=25]

3. Therapeutic diet for patient with Renal Disorder.
 4. Methods of Nutritional Education.
 5. Discuss digestion and absorption of carbohydrates.
 6. Hypervitaminosis.
 7. Electrolyte balance and imbalance.
 8. Integrated child development scheme (ICDS).
 9. Food standards.
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- Draw diagram wherever necessary

BIOCHEMISTRY (30 MARKS)

SECTION-A

Answer any ONE of the following:

[1x7=7]

1. Define Vitamin. Mention fat soluble Vitamins. What are the clinical features of Vitamin A deficiency?
How it can be prevented? (1+2+2+2)
2. Mention various fates of glucose after consumption. What are the importance of HMP shunt?
(3+4)

SECTION-B

Write short notes on any Three:

[3x5=15]

3. Mention reference Fasting & Post Prandial Plasma Glucose levels. Write a brief note on clinical significance of Glycated haemoglobin. (2+3)
 4. What are the Ketone bodies? Enumerate the common causes of Ketoacidosis. What are the clinical features of Ketoacidosis? (1+2+2)
 5. Mention the common parameters with their reference ranges done under Lipid profile estimation. Why HDL Cholesterol is known as good Cholesterol? (3+2)
 6. What is Transamination reaction? What is the biological significance of Transamination reaction? (2+3)
 7. Enumerate the clinical applications of Electrophoresis. (5)
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SECTION C (NUTRITION)

INSTRUCTIONS:

- Section C (Nutrition & Biochemistry) should be answered in first 20 minutes of the Exam duration and handed over to the invigilators.
- Put one tick ✓ mark to only one answer that you consider correct for each question.
- Mark your tick ✓ in pen.

Multiple Choice Questions (MCQs):

[10X1=10]

1. All of the following used to measure nutritional status of the community population **EXCEPT**
 - a. Mid upper arm circumference in 0-1-year age group.
 - b. Anaemia detection in pregnancy.
 - c. Birth weight of a newborn
 - d. Height and weight calculated in < 5 years' age group.
2. Which of the following disease results due to the deficiency of fatty acids?
 - a. Neural tube defects.
 - b. Scurvy.
 - c. Atherosclerosis.
 - d. Phrynoderma
3. Which of the following enzyme is important for the conversion of fats into fatty acids, glycerol, mono-and di-glycerides?
 - a. Lipase.
 - b. Amylase.
 - c. Maltase.
 - d. Trypsin.
4. The highest percentage of polyunsaturated fatty acids is present in
 - a. Groundnut oil.
 - b. Soyabean oil.
 - c. Margarine.
 - d. Palm oil.
5. Which of the following is considered as a cardio-protective fatty acid?
 - a. Palmitic acid.
 - b. Stearic acid.
 - c. Omega-3 fatty acids.
 - d. Oleic acid.
6. In which year, Prevention of Food Adulteration Act was implemented in India?
 - a. 1952.
 - b. 1972.
 - c. 1954.
 - d. 1992.
7. How many doses of Vit. A must be given to a child under the National Immunization Schedule?
 - a. 6
 - b. 7
 - c. 8
 - d. 9
8. Which of the following test is **NOT** used to check the efficiency of pasteurization of milk?
 - a. Phosphate test.
 - b. Standard plate test.
 - c. Coliform count
 - d. Methylene blue reduction test
9. Which of the following protein is considered as "reference protein"?
 - a. Egg.
 - b. Soyabean.
 - c. Mutton.
 - d. Milk.
10. Which of the following mineral deficiency can cause "Keshan Cardiomegaly"?
 - a. Selenium.
 - b. Copper.
 - c. Zinc
 - d. Iron



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SECTION C (BIOCHEMISTRY)

INSTRUCTIONS:

- Section C (Biochemistry & Nutrition) should be answered in first 20 minutes of the Exam duration and handed over to the invigilators.
- Put one Tick (✓) mark to only one answer that you consider correct for each question.
- Mark your Tick (✓) in pen.

Multiple Choice Questions (MCQs):

[8x1=8]

1. Which of the following organelle is responsible for protein synthesis?
 - a. Lysosome
 - b. Peroxisome
 - c. Endoplasmic reticulum
 - d. Nucleus
 2. All of the following amino acids are glucogenic, **except**
 - a. Glycine
 - b. Serine
 - c. Lucine
 - d. Aspartic acid
 3. All of the following proteins have quaternary structure **except**
 - a. Albumin
 - b. Hemoglobin
 - c. LDH
 - d. IgG
 4. Debranching enzyme is absent in
 - a. Cori's disease
 - b. Andersen's disease
 - c. Von Gierke's disease
 - d. Her's disease
 5. Specific gravity of urine is decreased in
 - a. Diabetes mellitus
 - b. Acute glomerulonephritis
 - c. Diarrhoea
 - d. Chronic glomerulonephritis
 6. Normal range of serum creatinine is
 - a. 0.6–1.5 mg/dl
 - b. 9–11 mg/dl
 - c. 20–45 mg/dl
 - d. 60–100 mg/dl
 7. Free fatty acids are transported in the blood
 - a. Combined with albumin
 - b. Combined with fatty acid binding protein
 - c. Combined with β -lipoprotein
 - d. In unbound free salts
 8. HDL is synthesized in
 - a. Adipose tissue
 - b. Liver
 - c. Intestine
 - d. Liver and intestine
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