



All India Institute of Medical Sciences, Kalyani

B.Sc. (Hons) Nursing First Year Examination (Batch-2021-22)

Time: 3 Hrs.

NUTRITION & BIOCHEMISTRY

Marks: 75

INSTRUCTIONS:

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

BIOCHEMISTRY (30 MARKS)

SECTION-A

Answer any TWO of the following:

[2X7=14]

1. Describe the three key enzymes of glycolysis. Describe briefly the regulation of blood glucose level. (3+4)
2. Describe the synthesis of Vitamin D in our body. Describe the role of vitamin D in bone, intestine and kidney. (4+3)
3. What is the normal range of blood pH? What are the different buffers that help in maintaining blood pH? What is anion gap? (2+3+2)

SECTION-B

Write short notes on any TWO:

[2X5=10]

4. A 56-year-old person was brought to the hospital with complaints of palpitation and chest pain. On investigation his CK-MB isoenzyme was found to be higher than normal. (2+3)
 - a. What could be the diagnosis?
 - b. What is isoenzyme and how it helps in diagnosis.
5. What is Lipoprotein? Explain why HDL cholesterol is considered to be involved in reverse cholesterol transport and why this lipoprotein is considered as good. (1+3+1)
6. A 60-year-old person have severe joint pain has been diagnosed as gout. His blood report showed high level of uric acid. (1+1+1+2)
 - a. Which metabolic pathway is associated with Uric acid production?
 - b. Name a drug that inhibits uric acid production.
 - c. What are the dietary advice that may help in this condition?
 - d. Is there any relation to alcohol intake and why?



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Time: 3 Hrs. NUTRITION & BIOCHEMISTRY Marks: 75

INSTRUCTIONS:

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

NUTRITION (45 MARKS)

Long Answer:

[10X1=10]

1. Discuss the below:

(2+2+1+5)

- a. What are the classifications of proteins?
- b. What are the sources of proteins?
- c. What is the caloric value of protein?
- d. Explain the deficiency diseases of protein.

Short notes. Answer any five.

[5X5=25]

2. What is the daily requirement of carbohydrate? Explain the metabolism of carbohydrates.
 3. Explain with examples, the food standardization system in India.
 4. Write various methods of food storage and food preservation.
 5. Diet in pregnancy.
 6. Role of Nurse in nutrition education.
 7. Fluid and electrolyte imbalance.
 8. List the foods to be included and excluded in diabetes with reasons.
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Invigilator sign: _____

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 ✓ mark to only one answer that you consider correct for each question.
- Mark your ✓ in pen.

Multiple Choice Questions (MCQs):

[6X1=6]

1. Which of the following is true about albumin?
 - a. It is synthesized only by skeletal muscle.
 - b. Its blood level is low in chronic liver disease.
 - c. It helps as an important buffer in the urine.
 - d. It transports ketone bodies in the blood.
 2. Which of the following statement concerning the t RNA is correct?
 - a. It is involved in transport of other RNAs.
 - b. It is involved in DNA repair mechanism.
 - c. It is involved in translation process.
 - d. It is involved in Transcription process.
 3. Which of the following can be the reason of Fatty Liver?
 - a. High intake of non-vegetarian food
 - b. Regular consumption of Alcohol
 - c. Excess intake of Vitamin C
 - d. Regular smoking of cigarette
 4. Which of the following is the mechanism of enzyme inhibition leads to increase in K_m ?
 - a. Competitive inhibition
 - b. Uncompetitive inhibition
 - c. Non-competitive inhibition
 - d. None of the above
 5. A 20-year-old male presents with weight loss, heat intolerance, bilateral exophthalmos, a lid lag, sweating and tachycardia. Which of the following hormone function is affected?
 - a. Insulin
 - b. Glucagon
 - c. Thyroxine
 - d. Catecholamine
 6. A Nursing officer, in-charge of a ward was going through the Liver function test report of a sick patient. After seeing the report, she concluded that the diagnosis of the patient is obstructive jaundice. Which of the following is most likely to be found in the report?
 - a. Unconjugated bilirubin is more than conjugated bilirubin
 - b. Conjugated bilirubin is more than unconjugated bilirubin
 - c. Both fractions of bilirubin are increased in equal amount
 - d. Both fractions of bilirubin are within normal limit
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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 ✓ mark to only one answer that you consider correct for each question.
- Mark your ✓ in pen.

Multiple Choice Questions (MCQs):

[10X1=10]

1. Which vitamin deficiency causes Casal's necklace?
 - a. Riboflavin
 - b. Vitamin B12
 - c. Niacin
 - d. Vitamin C
2. Which of the following nutrients provides energy to the body?
 - a. Zinc
 - b. Vitamin A
 - c. Fat
 - d. Vitamin D
3. Fruity odour in urine is found in:
 - a. Tyrosinemia
 - b. Urinary tract infection
 - c. Diabetic ketoacidosis
 - d. Trimethylaminuria
4. What type of compounds are vitamins?
 - a. Organic compound
 - b. Inorganic compound
 - c. Living organisms
 - d. None of the above
5. Which is not an essential element for plant growth?
 - a. Potassium
 - b. Calcium
 - c. Magnesium
 - d. Sodium
6. An apple is a rich source of which of the following nutrients?
 - a. Sodium
 - b. Potassium
 - c. Phosphorous
 - d. Magnesium

7. Which is the good source of iron in the given options?
 - a. Green vegetables
 - b. Egg
 - c. Milk
 - d. Carrot

 8. Which of the following is responsible for the conversion of milk into curd?
 - a. Enzyme
 - b. Fungus
 - c. Vitamin
 - d. Bacteria

 9. Which of the given option is responsible for the formation of tissues?
 - a. Vitamins
 - b. Carbohydrates
 - c. Fats
 - d. Proteins

 10. Which one of the following given options is not a micronutrient?
 - a. Zinc
 - b. Iron
 - c. Sulphur
 - d. Magnesium
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