



**All India Institute of Medical Sciences, Kalyani**

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

**Time: 3 Hrs.**

**NUTRITION & BIOCHEMISTRY**

**Marks: 75**

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**INSTRUCTIONS:**

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

**NUTRITION (45 MARKS)**

**SECTION-A**

**Long Answer:**

**[10X1=10]**

1. Describe nutritional problems of public health importance in India  
or
2. Explain Anaemia Mukht Bharat Program

**SECTION-B**

**Short notes. (any five).**

**[5X5=25]**

3. Nutritional assessment.
  4. Food fortification
  5. Common dietary beliefs and practices in India
  6. DASH Diet
  7. Vitamin A deficiency and its management in children
  8. Milk hygiene
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**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. What is gluconeogenesis? Name the major hormones stimulating and inhibiting it. Explain why it gets augmented both in case of Diabetes mellitus as well as in starvation. (2+2+3)
2. What is the normal level of albumin in blood? Enlist three important functions of albumin. Name two clinical conditions in which albumin level becomes low. (2+3+2)
3. Name the ketone bodies and the tissue in which these ketone bodies are synthesized? Explain why ketone body synthesis gets increased both in starvation and diabetes mellitus? (4+3)

**SECTION-B**

**Write short notes on any TWO:**

**[2X5=10]**

4. A 24-year-old person was brought to the hospital with complaints of pain in upper right quadrant of abdomen, loss of appetite, vomiting and fever. On examination, tenderness and mild hepatomegaly was noticed. On investigation, both AST and ALT enzymes were found to be higher than normal. (2+3)
    - a. What could be the diagnosis?
    - b. Name any three other parameters tested as liver function markers.
  5. Deficiency of which vitamin can cause Beriberi? Name the active form of this vitamin and two enzymes for which this vitamin acts as co-enzyme. (2+3)
  6. Name two important blood buffers. Mention the normal pH of the blood. What is metabolic acidosis? (2+1+2)
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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. As per RCH program, total number of vitamin A doses to be given to eligible population (<5 years) is:
  - a) 5
  - b) 9
  - c) 7
  - d) 11
2. Fluorosis develops when water fluoride content is above 15mg/lit but it has been observed after different studies that this fluorosis can also develop in people whose staple diet is:
  - a) Maize
  - b) Rice
  - c) Jowar
  - d) Bajra
3. Egg is good source of following vitamins **except**:
  - a) Vitamin A
  - b) Vitamin D
  - c) Vitamin B
  - d) Vitamin E
4. Who coined the term 'vitamin'?
  - (a) McCollum
  - (b) Funk
  - (c) Hopkins
  - (d) James Lind
5. A teacher will be classified as a
  - a) Sedentary worker
  - b) Moderate worker
  - c) Heavy worker
  - d) Average worker
6. A 'safety margin' of + 2 SD is not incorporated for the RDA of
  - a) Energy
  - b) Fats
  - c) Water soluble vitamins
  - d) Fat soluble vitamins

7. Which of the following diseases is most notorious to prove fatal in combination with malnutrition?
- a) Tetanus
  - b) Anaemia
  - c) Measles
  - d) Diarrhoea
8. Which is true for cholesterol?
- a) It is a type of saturated fatty acid
  - b) It is present in egg yolk, ghee and coconut oil
  - c) The dietary requirement of cholesterol is zero
  - d) Everyone with high cholesterol gets IHD
9. Which of the following is **not** a source of dietary fibres?
- a) Vegetable fibres
  - b) Muscle fibres
  - c) Bran
  - d) Fruits
10. The limiting amino acid in wheat is \_\_\_\_\_ and in pulses is \_\_\_\_\_
- a) Lysine, methionine
  - b) Methionine, lysine
  - c) Cysteine, lysine
  - d) Lysine, cysteine
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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 ✓ 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 the transporter of iron in blood?
    - a. Transferrin.
    - b. Ceruloplasmin.
    - c. Ferritin.
    - d. Ferroprotein.
  2. Which of the following RNA has poly-A tail?
    - a. mRNA.
    - b. tRNA.
    - c. rRNA.
    - d. snRNA.
  3. Which of the following is a **not** a homopolysaccharide?
    - a. Starch
    - b. Glycogen
    - c. Inulin
    - d. Heparin
  4. Which of the following type of inhibition of succinate dehydrogenase is done by malonate?
    - a. Competitive inhibition
    - b. Uncompetitive inhibition
    - c. Non-competitive inhibition
    - d. Allosteric inhibition
  5. Which of the following hormone stimulates glycolysis?
    - a. Insulin
    - b. Glucagon
    - c. Thyroxine
    - d. Aldosterone
  6. A Nursing officer, in-charge of a ward was going through the lab report of a sick patient. She noticed increased amylase and lipase enzyme levels in the blood? What could be the most likely diagnosis?
    - a. Hepatitis
    - b. Pancreatitis
    - c. Colitis
    - d. Appendicitis
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