



UNIVERSITY OF JAFFNA, SRI LANKA

FIRST YEAR SECOND SEMESTER EXAMINATION IN BScHons (Nursing) 2025

NURBN 1263 –BIOCHEMISTRY FOR NURSES-II

PAPER II

Date: 18.06.2024

Time: 2 Hours

ANSWER ALL SIX QUESTIONS ON SEPARATE ANSWER BOOK.

1. 1.1 Name **the test** to confirm that a pregnant woman is diabetic. (10 Marks)
- 1.2 List the steps to be taken to prepare gestational diabetic mother prior and on the day to perform the test mentioned in Section 1.1. (15 Marks)
- 1.3 List the steps of carrying out the test mentioned in Section 1.1. (15 Marks)
- 1.4 List the hormones which would lead to gestational diabetes. (15 Marks)
- 1.5 Explain how the hormones mentioned in Section 1.4 would lead to gestational diabetes? (30 Marks)
- 1.6 Give the principle of a test to confirm the excretion of glucose in urine.(15 Marks)
  
2. 2.1 List the ketone bodies. (10 Marks)
- 2.2 List the conditions in which the blood ketone body level is elevated. (10 Marks)
- 2.3 Diagrammatically show the **two pathways** in which ketone bodies are
  - 2.3.1 synthesised. (30 Marks)
  - 2.3.2 utilised. (20 Marks)
- 2.4 List the tissue/tissues which cannot utilise ketone bodies. (10 Marks)
- 2.5 2.5.1 Name two tests to identify ketone bodies in the urine. (10 Marks)
- 2.5.2 Give the procedure of one of the methods mentioned in Section 2.5.1. (10 Marks)
  
3. 3.1 3.1.1 List the main nutrients that are provided by legumes. (15 Marks)
- 3.1.2 Germination of legumes improves the nutritive values. Explain.(15 Marks)
- 3.2 3.2.1 Explain the steps involved in the process of parboiling of paddy. (15 Marks)
- 3.2.2 Parboiled rice is more nutritious than raw rice. Explain. (20 Marks)
- 3.3 Give a day's menu to obtain all the required nutrients for a patient with hypertension. (35 Marks)

4. 4.1 A ten-year-old boy had elevated methionine and homocysteine levels in both blood and urine and undetectable plasma cysteine. Treatment with pyridoxine improved this condition.
- 4.1.1 What is the probable enzyme defect? (10 Marks)
- 4.1.2 Explain the
- 4.1.2.1 increased levels of homocysteine and methionine. (30 Marks)
- 4.1.2.2 decreased level of cysteine. (15 Marks)
- 4.1.3 How did the pyridoxine administration improve the condition?(10 Marks)
- 4.2 Explain how ammonia is detoxified in
- 4.2.1 liver (20 Marks)
- 4.2.2 brain (15 Marks)
5. 5.1 Allopurinol is used to treat hyperuricaemia patients. Explain. (35 Marks)
- 5.2 5.2.1 What is splicing? (10 Marks)
- 5.2.2 Explain the steps involved in the splicing of a DNA transcript to become an active mRNA molecule. (25 Marks)
- 5.3 What are differences between a tRNA and an active mRNA? (20 Marks)
6. 6.1 A two-weeks old, breast-fed infant developed watery, frothy, and acidic stool and contained reducing sugar. The child was diagnosed to have lactose intolerance. The diarrhoea subsided when breast milk was substituted with soybean milk. Explain the reasons for the baby to have watery, frothy, and acidic stool and reducing sugar. (35 Marks)
- 6.2 If soy milk is to be continued for the baby up to 4 months, list the nutrients that are
- 6.2.1 supplied by soybean milk. (20 Marks)
- 6.2.2 deficient in soybean milk. (20 Marks)
- 6.3 What supplements should the mother include in the feed of the baby to obtain the required nutrients? Explain. (25 Marks)