

UNIVERSITY OF JAFFNA, SRI LANKA
UNIT OF ALLIED HEALTH SCIENCES
FIRST YEAR FIRST SEMESTER BASIC SCIENCES EXAMINATION- SEPTEMBER, 2017

AHSBB 1104 – BASIC BIOCHEMISTRY
PAPER II

Date: 25.09. 2017

Time: 2 Hours

ANSWER ALL SIX QUESTIONS

MARKS ALLOTTED TO EACH QUESTION IS GIVEN IN BRACKETS

1. 1.1 Explain the conditions diabetes, pre-diabetes and gestational diabetes.
(21 Marks)
- 1.2 Give the fasting and postprandial blood glucose levels to confirm that a person is diabetic or pre-diabetic.
(20 Marks)
- 1.3 Explain how you would prepare a subject to test to confirm that she is having gestational diabetes. Give the name of the test.
(19 Marks)
- 1.3 Explain how the cells metabolise glucose under anaerobic condition.
(40 Marks)

2. 2.1 Explain the reciprocal control of fatty acid synthesis and oxidation.
(70 Marks)
- 2.2 2.2.1 Define "Activation energy" of an enzyme catalyzed reaction.
(10 Marks)
- 2.2.2 Explain "Irreversible inactivation" of an enzyme with an example.
(20 Marks)

Practical

3. 3.1 3.1.1 Explain how iron is absorbed and transported in blood. (30 Marks)
3.1.2 Give the biochemical functions of copper. (20 Marks)
- 3.2 Explain the biochemical parameters those have to be measured in serum and urine to confirm that the condition is post-hepatic jaundice. (30 Marks)
- 3.3 Show how 'butter fat' is digested and absorbed? (20 Marks)
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4. 4.1 Diagrammatically show the following pathways and explain the importance of the products
4.1.1 Transamination of alanine (20 marks)
4.1.2 Decarboxylation of serine (20 Marks)
4.1.3 Biosynthesis of creatine phosphate (25 Marks)
- 4.2 Show how insulin activates mRNA? (35 Marks)
5. 5.1 What is "flow of genetic information"? (20 Marks)
5.2 Show the steps involved in DNA mismatch repair. (30 Marks)
5.3 Show how *de novo* purine biosynthesis is controlled? (50 Marks)
6. 6.1 Vitamin B₁₂ deficiency leads to pernicious anaemia. Explain with reasons. (45 Marks)
- 6.2 A 40 year old healthy man was having fever for two weeks and was on liquid diet. He was found very weak. Explain his nitrogen balance
6.2.1 Before fever (08 Marks)
6.2.2 During fever (08 Marks)
6.2.3 If he has consumed a diet after consulting a dietician after fever. (09 Marks)
- 6.3 What dietary advice would the dietician have given to this patient during his recovery period? (30 Marks)