

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF MEDICINE

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY DEGREE
PART 1 EXAMINATIONS (SUPP)

MBM 1201 : DIGESTION AND NUTRIENT METABOLISM

DATE : JULY 2006

TIME : 3 HOURS

Instructions to Candidates

Answer all questions

SECTION A

1. Describe the various anaplerotic reactions that replenish the TCA cycle. Why are these reactions necessary? (20)
 2. Write an essay on bile secretion, its control and intestinal absorption. Highlight why high levels of cholesterol in bile result in cholesterol gallstone formation. (20)
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SECTION B

3. With reference to oxidative phosphorylation, explain the following terms:
 - (i) P:O ratio (2)
 - (ii) uncoupling (2)
 - (iii) chemiosmosis (2)
 - (iv) the redox potential (2)
 - (v) the proton motive force. (2)
4. Differentiate between substrate level phosphorylation and oxidative phosphorylation. (3)

5. What is the metabolic fate of the catabolic products of the fatty acid: C15:0. (7)
6. Elucidate the biochemical bases of:
- (i) Refsum's disease (5)
 - (ii) Wernicke's encephalopathy. (5)
7. Write short notes on the following:
- (a) siderosis (2)
 - (b) tetany. (2)
8. Give reasons why the immune response is impaired in severely malnourished children. (3)
9. State the biochemical functions of the following vitamins:
- (a) Vitamin B₁₂ (2)
 - (b) Vitamin C (2)
 - (c) Vitamin D. (2)
10. With the aid of a diagram explain the control of calcium within the body. (4)
11. Explain how sodium is involved in absorption. (2)
12. Briefly describe defects in amino acid absorption. (3)
13. Name the enzymes for which the following elements are cofactors:
- (a) selenium (1/2)
 - (b) molybdenum (1/2)
14. Write short notes of the absorption of :
- (a) iron (3)
 - (b) water soluble vitamins. (3)
15. What is pepsin? Name the cells responsible for secreting it. (1)

END OF EXAMINATION