

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF CERTIFICATE IN ANIMAL HEALTH AND PRODUCTION

BIOC 00113: BASIC BIOCHEMISTRY

STREAMS:

TIME: 2 HOURS

DAY/DATE: THURSDAY 12/04/2018

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Answer question one and any other two questions.

QUESTION ONE (30 MARKS)

- (a) State the functions of the following cell organelles. (3marks)
- Ribosomes
 - Smooth endoplasmic reticulum
 - Chloroplast
- (b) Convert the following Fischer structures of glucose and ribose into Haworth structures. (4 marks)

- (c) Differentiate between homoglycans and heteroglycans. (2 marks)
- (d) Differentiate between saponifiable and non-saponifiable lipids giving examples of each. (4marks)
- (e) Giving appropriate structures, differentiate between an aldose and ketose. (4marks)
- (f) Discuss 3 factors that cause denaturation of proteins. (6 marks)
- (g) An individual has protein intake of 95g and 24hr UUN is 15g. Determine the nitrogen balance. (3 marks)
- (h) The nitrogen content of feed is 6% and a cow eats 1200g. The amount of nitrogen in faeces was 3% and the cow excreted 150g faeces. The amount of nitrogen in urine was 10% and the cow excreted 80g of urine. If the endogenous urinary nitrogen is 0.4 and the metabolic fecal nitrogen is 0.5, calculate the biological value. (4 marks)

QUESTION 2 (20 MARKS)

- (a) Discuss 3 broad classifications of carbohydrates. (6 marks)
- (b) Explain 5 factors affecting enzyme activity. (10 marks)
- (c) Classify the following as monosaccharide, disaccharide or polysaccharide. (4 marks)
- (i) Cellulose
 - (ii) Maltose
 - (iii) Ribose
 - (iv) Starch

QUESTION 3(20 MARKS)

- (a) State and explain 5 biological functions of protein. (10 marks)
- (b) Discuss the characteristic features of carbohydrates. (6 marks)
- (c) Define the term dysphagia giving its causes. (4 marks)

QUESTION 4 (20 MARKS)

- (a) State and explain the four functions of carbohydrates in animal life. (8 marks)
- (b) Explain the occurrence of ketosis. (4 marks)
- (c) Differentiate between essential and non-essential fatty acids. (4 marks)
- (d) Give 4 importances of lipids to biological systems. (4 marks)
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