

CHUKA



UNIVERSITY

---

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF CERTIFICATE IN ANIMAL HEALTH**

**DATM 00241: DAIRY AND TECHNOLOGY MANAGEMENT**

**STREAMS: CERT ANHE Y2S1**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 11/12/2019**

**2.30 P.M – 4.30 P.M**

---

**INSTRUCTIONS**

**Answer all questions in section A and any other two in section B**

**SECTION A (30 MARKS)**

**QUESTION ONE**

- (a) Explain how the following factors affect milk composition and yield.
- (i) Breed [1 marks]
  - (ii) Stage of lactation [1 marks]
  - (iii) Milking intervals [1 marks]
  - (iv) Stage of lactation [1 marks]
  - (v) Feeding regime [1 marks]
  - (vi) Physiological state of the animal [1 marks]
- (b) According to KEBS standards, define milk. [5 marks]

**QUESTION TWO**

- (a) Explain the categories of milk below giving range and example in each.
- (i) True solution [1 marks]
  - (ii) Colloidal solution [1 marks]
  - (iii) Colloidal suspension [1 marks]

(b) Explain how the following colours of milk are used as an indication of its fat content and quality.

- (i) White [1 marks]
- (ii) Yellow [1 marks]
- (iii) Bluish [1 marks]

**QUESTION THREE**

(a) Explain these proteins in milk giving examples ;

- (i) Casein micelles [4 marks]
- (ii) Simple proteins [4 marks]

(b) Explain what happens to lactose (milk sugar) when the temperature exceed 93.5C.

[5 marks]

**SECTION 2 (40 MARKS)**

**QUESTION FOUR**

- (i) draw and label the structure of lactose sugar in milk. [5 marks]
- (ii) Differentiate between mutarotation and sweetening power of lactose. [6 marks]
- (iii) Explain the super saturation phenomena in milk. [9 marks]

**QUESTION FIVE**

- (i) Using a flow diagram show the manufacture of cheese. [10 marks]
- (ii) What problems are likely to occur in cheese manufacture and how can these be avoided. [5 marks]
- (iii) Give the functions of the Kenya Dairy Board (KDB) [5 marks]

**QUESTION SIX**

- (i) Classify milk constituents in term of their dispersion and explain how the colour of milk is used as an indication of its fat content. [10 marks]
- (ii) State the categories of cleaning solutions giving examples. [10 marks]

