

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**FOURTH YEAR EXAMINATION FOR THE AWARD OF
DEGREE OF BACHELOR OF SCIENCE**

CHIN 429: LEATHER BIOTECHNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE : WEDNESDAY 22 /09/ 2021

8.30 AM – 10.30 AM

INSTRUCTIONS TO CANDIDATES:

- Answer Question One and any other Two Questions.
- DO NOT WRITE ANYTHING on the question paper.

QUESTION ONE (30 MARKS)

- a) i) Define the skin as a raw material in leather making. [1 Mark]
ii) Give two roles of amino acids in skin or skin components. [2 Marks]
- b) Write common amino acids in skin or skin components. [2 Marks]
- c) Discuss the Grain-Corium Thickness Ratio. [3 Marks]
- d) i) Define fleshing and give a reason why it is important. [2 Marks]
ii) Briefly discuss the two options of a tanner uses in fleshing. [4 Marks]
- e) i) Define Preservation / curing of raw stock pelts and skins. [1 Mark]
ii) Explain the term staling and how it should be carried out in an abattoir. [3 Marks]
- f) List four conditions that favor putrefaction of skins. [4 Marks]
- g) Give three effects of inadequate preservation of leather. [3 Marks]
- h) Give two advantages and two disadvantages of air drying as a preservation method. [4 Marks]

QUESTION TWO (20 MARKS)

- a) Using a suitable well labeled diagram discuss the parts of hides and skins. [6 Marks]
- b) Discuss the following terms as used in leather curing
- i) Wet salting [2 Marks]
 - ii) Stacking [2 Marks]
 - iii) Drum curing [2 Marks]
- c) Give four parameters to be considered in soaking process. [4 Marks]
- d) Discuss the functions of the following soaking enzymes [4 Marks]

QUESTION THREE (20 MARKS)

- a) Write short notes on the following parts of the skin structure. [8 Marks]
- i) Epidermis
 - ii) Grain
 - iii) Grain-Corium Junction
 - IV) Corium
- b) Write short notes on the mechanism of putrefaction of leather. [3 Marks]
- c) i) Write short notes on pH control in treatment of raw stock [3 Marks]
- ii) Give one advantage and one disadvantage of storage pickling [2 Marks]
- d) i) Explain the term Beam house processes [2 Marks]
- ii) Give the two components of purifying the pelt or opening up the pelt structure. [2 Marks]

QUESTION FOUR (20 MARKS)

- a) Discuss the term Biocide as used in leather curing. [3 Marks]
- b) Explain Unhairing of Pelts. [2 Marks]
- c) Differentiate between hair burning and hair saving. [2 Marks]
- d) i) Define the term liming [1 Mark]
- ii) Explain the term Lime Blast [3 Marks]

- e) List three functions of delimiting [3 Marks]
- f) i) Define Baiting [2 Marks]
- ii) Explain briefly the qualitative ways of monitoring the progress of baiting process.
[4 Marks]
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