

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE IN ANIMAL HEALTH

AGEN 00134: FARM STRUCTURES AND MACHINERY

STREAMS: CERT ANHE Y1S2

TIME: 2 HOURS

DAY/DATE: TUESDAY 18/4/2023

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- Answer ALL questions in Section A and any TWO questions in Section B
- Do not write anything on the question paper.

SECTION A: 40 MARKS (ANSWER ALL QUESTIONS)

1. Wood is a commonly used building material in many parts of the world. Discuss three main methods of wood preservation. (6 marks)
2. Discuss three classes of natural stones used in building construction according to their manner of their geological formation. (9 marks)
3. (a) Define stress as applied in mechanics of materials. (3 marks)
(b) A brick support is 0.7 metre square and 3 metre square high and weighs 19N/m^3 . It is supporting an axial load from a column of 490kN . The load is spread uniformly over the top of the support, so that the arrow shown merely represents the resultant of the load. Calculate (a) the stress in the brick support immediately under the column, (b) the stress at the bottom of the brick support. (10 marks)

4. (a) Describe the following types of loads
 - i. Dead loads (3 marks)
 - ii. Live loads (3 marks)
- (b) Explain the importance of a foundation in buildings. (6 marks)

SECTION B: (30 MARKS) ANSWER TWO QUESTIONS

5. (a) Describe four factors which will determine the type of wall to be used in a building. (4 marks)
- (b) Describe the following types of roofs.
 - i. Double-pitched (Gable) roof (2 marks)
 - ii. Hip roof (2 marks)
- (c) With the aid of a diagram, show a slatted floor house for 50 layers. (7 marks)
6. (a) Give two principal groups of drying systems for grain drying. (2 marks)
- (b) 2000kg of peas at 32% moisture content determine the weight of the dried peas. (3 marks)
- (c) Discuss two main functions of ventilation in a building. (2 marks)
- (d) Ventilation requirements depend on the local climatic and specific enterprise being served. Give four practical examples to illustrate this. (8 marks)
7. (a) Name two types of mowers used in hay making. (4 marks)
- (b) Describe the following types of machines used for hay conditioning.
 - (i). Crimper conditioner (3.5 marks)
 - (ii). Roller crushers (3.5 marks)
- (c) (i) define the term 'fence' as used in livestock farming. (2 marks)
- (d) (ii) discuss two objectives of fencing on a farm. (2 marks)

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