Basic Farm Machinery/Buildings (BFM 107)

Time 2Hrs
Date 4th May 2010

SIR ARTHUR LEWIS COMMUNITY COLLEGE
DIVISION OF AGRICULTURE

CERTIFICATE IN GENERAL AGRICULTURE
2009/2010 ACADEMIC YEAR
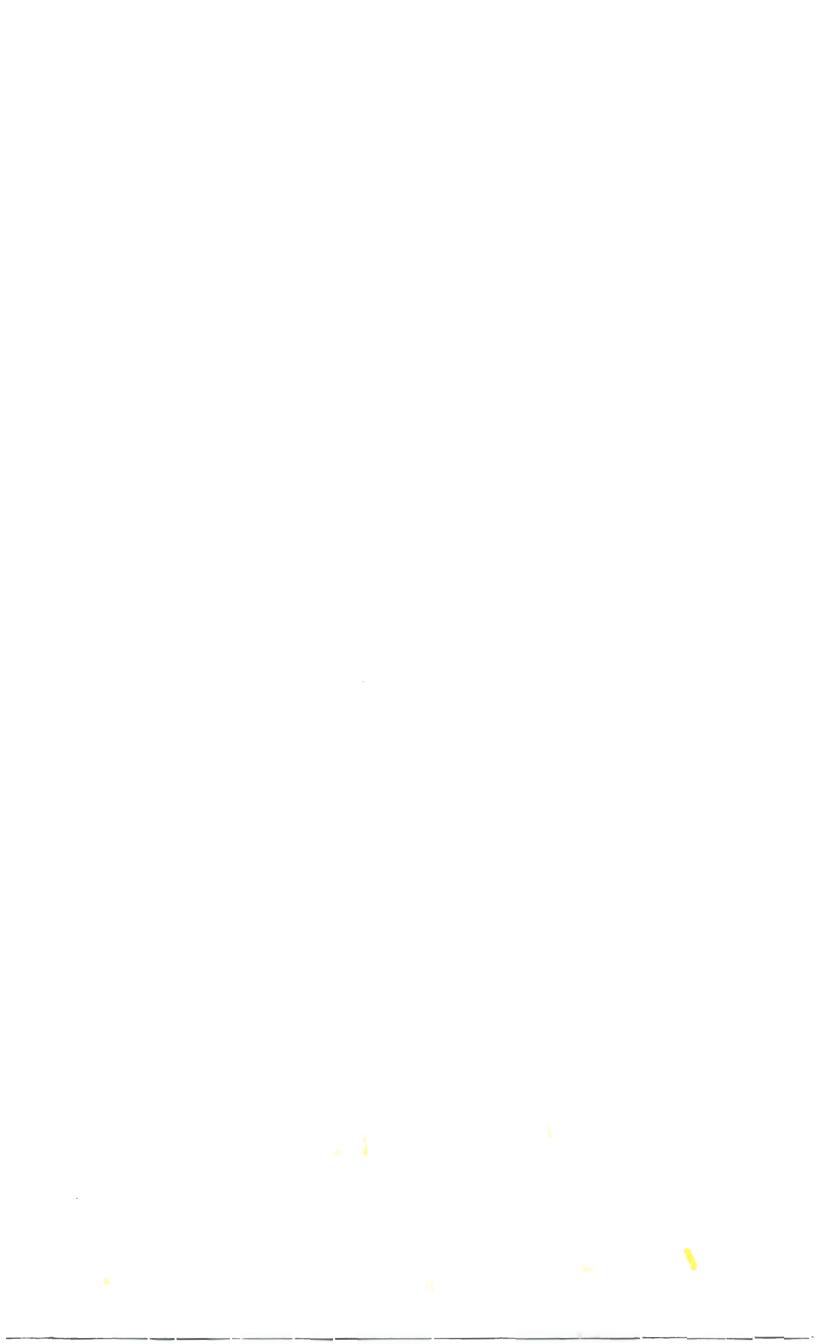**END OF SEMESTER SECOND EXAMS**

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Instructions: **1.**This paper consists of five questions **answer any four (4) questions**.

2. Read carefully and begin each new question on a new page.

1.   Wood can be derived from many different kinds of trees

a)   Define the term "wood."   [2]

b)   List THREE characteristics of wood.   [3]

c)   Explain TWO advantages and One disadvantage of using wood as a
      building material.   [6]

d)   Explain the applications of wood in sheep and goat production shelters.

                                                               [4]

e)   Location, ventilation and lighting are all important factors that one should
      consider when erecting a poultry production shelters. Discuss the
      importance each and state how each these are resolved locally.   [9]

Total 20 marks

2.   The use of plastic materials in commercial and residential construction has
      dramatically increased due to improved material performance, and efficient use of
      technologies.

(a)   Define the term 'plastic'.   [2]

(b)   Differentiate between the TWO classes of plastics and an example of each
       type.   [6]

(c)   Explain THREE reasons why plastics are an ideal roofing material for high
       tunnels and nurseries.   [6]

       (i) Explain ONE benefit of growing vegetables in high tunnels locally. [3]

(d)   Why should wind direction be considered in our conditions when selecting a
       location for a high tunnel?   [3]

Total 20 marks

1

3.   Good housing creates a healthy, comfortable environment which keeps animals
      happy and productive.
      a) Discuss ONE importance feature of pig production units.   [3]
      b) State TWO reasons why having concrete floors in these units are essential for
         successful production.   [6]
      c) A farmer desires to construct a pig sty and has to cast a slab which is 20 feet
         wide x 36 feet long and 6 inches thick, the water to cement ratio is 0.50 and
         the mix ratio is 1: 2 : 4, cement, fine aggregates and course aggregates
         respectively.
              i) Define the term 'concrete.'   [2]
              ii) Calculate the volume of concrete needed.   [2]
              iii) Calculate the quantity of each material he needs.   [4]
      d) List THREE properties of concrete   [3]

                                                    Total 20 marks

4.   a) Define the term 'Drip or trickle Irrigation.'   [2]
      b) List TWO components of a drip irrigation system and state their functions. [4]
      c) Discuss TWO advantages and TWO disadvantage of drip irrigation.   [8]
      (d) At the farm in Dennery the electric pump raise water from the river to the
          tanks at a rate of 10,000 kg per hour. If the vertical height the water is raised
          between the river and the tanks is 200 meters. Calculate the power
          requirement of the pump. [6]

                                                    Total 20 marks

5.   a) Define the term "Agricultural mechanization."   [2]
      b) Explain TWO reasons which justify the introduction of farm machinery in
         agriculture.   [6]
      c) What kind of energy does an internal combustion engine create and deliver?
                                                                            [2]
      d) How do the events in the engine cycle of a two stroke engine differ from a
         four stroke engine?   [3]
      e) What is the function of the: i) crankshaft   ii) piston.   [4]
      f) List THREE factors which affect machine efficiency.   [3]

                                                    Total 20 marks