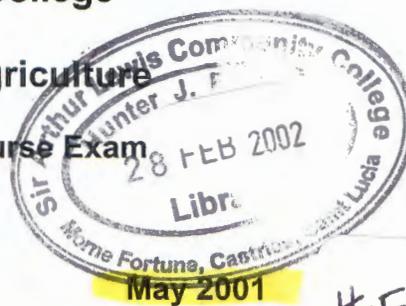


Sir Arthur Lewis Community College  
Division of Agriculture  
Associate Degree/Diploma in Agriculture

Academic Year 2000/2001 End-of-Course Exam

**Farm Machinery Buildings**

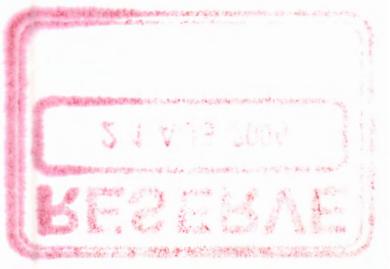


Duration: 2 ½ hours  
Answer all questions.

#F4

1. a) What is meant by the term 'Machine Capacity'. Explain using examples the various ways in which capacity can be measured.
  - b) What factors determine the capacity of:
    - i) land held equipment used for cutting?
    - ii) back pack type sprayers?
  - c) What factors contribute to:
    - i) higher machine capacity of mist blowers compared to lever operated knapsack sprayers?
    - ii) the low capacity of the cutlass as a hand held tool?
2. Machine efficiency is the actual output of machines over time compared to what is possible.
- a) How can one increase the capacity and efficiency of lever operated knapsack sprayer?
  - b) How can capacity be increased in seed planting operations in St. Lucia? What are the drawbacks of some of your suggestions?
- 3.
- a) You have decided to convert a square measuring 12' x 18' within a storeroom into a low temperature storage compartment for fruits and vegetables. What are some of the considerations you would make with respect to material.
  - b) What are the application of plastics in farm buildings?
  - c) What are the short comings of plastics in the applications you have mentioned?
  - d) Outline the implications of poor building orientation in St. Lucia.
  - e) The use of local undressed lumber in farm buildings has advantages and disadvantages. Outline the downside to this practice.
4. a) Explain how you would set up a pump near a river to ensure that it operates.
- b) If the pump fails to operate and yet the engine functions well what are the likely explanations?
  - c) What are the advantages of diesel engines to power small machines compared to petrol engines.





DAGRI past papers

SIR ARTHUR LEWIS COMMUNITY COLLEGE  
DIVISION OF AGRICULTURE  
END OF SEMESTER EXAMINATION S  
CERTIFICATE IN AGRICULTURE  
BASIC FARM MACHINERY AND BUILDINGS



Monday May 8, 2000.

Duration 2 ½ hours

Instructions: Answer two (2) questions from section A and two (2) questions from section B.

#F2

*Section A -- Farm machinery*

1. (A) List two main sources of rotary power and the uses to which this power is put on the farm.
  - (b) What is the job of oil in two stroke engines and how is it utilized.
  - © Explain clearly how you would carry out an oil- change on a farm transport vehicle or a tractor. How often should this be done .
  - (d) What daily checks should be done on these machines and why.
  
- 2 (a) Explain clearly the value of fixed and moving pulley systems on the farm.
  - (b) What are the disadvantages of small engines for powering mist - blowers and what can be done to deal with them or to eliminate them altogether.
  - (c) Describe the various types of air cleaners used on farm engines and how is each one maintained.
  - (d) Why should air filters be maintained?



- 3 A pumping unit, which is powered by a four-stroke engine, is made available to your farm.
- (a) What operational procedures and precautions would you take to ensure that the service life of the pump is as long as possible?
  - (b) Outline clearly what must be done to ensure that the power supply works as efficiently as possible
  - (c) What advantage does this power source have over electricity for pumping?
  - (d) What might urge one to select an electrical pump instead?

**Section B - Buildings**

- 4 A farmer has decided to produce seedlings of vegetables and annual flowers for sale to other farmers, home -owners and business houses.
- (a) What factors would influence the selection of a site on which to operate.
  - (b) What are possible choices of containers and why?
  - (c) What spaces should the area and building provide and why?
  - (d) Name two possible choices of covering materials for the shelter and state clearly where they are applicable.
5. (A) With respect to slatted shelters for sheep and goats, what precautions would you take in spacing the following and why.
- (i) Floor slats (ii) joists (iii) studs or posts (iv) siding material.
- (b) What are the advantages and disadvantages of the design and the form of construction of the sheep pen on the College farm?
- © What are the advantages and short -comings of using the bare ground instead of a built floor in poultry housing? How can the short -comings be minimized .
- (6). (a) How can pig pens be constructed to simplify waste management ?
- (b) What should one consider in building storages for livestock feed on farm.
- © What are the various materials used for the cladding of animal shelters and why?





Sir Arthur Lewis Community College  
Division of Agriculture  
Certificate Programme in Agriculture  
Supplemental Examinations  
Academic year 1999-2000  
Basic Farm Machinery and Buildings

Monday, July 31, 2000

Duration: 2 hours

*Instructions : Answer all questions.*

1.(a)Very often power is needed on the farm as rotary power, i.e the power of a turning shaft. List four farm implements or pieces of machinery which use rotary power and list their use on a farm.

(b)Lubrication is required in farm machinery. Explain how two-stroke engines lubricated.

(c)Describe two types of air cleaner found on farm machines, why they are necessary and how they are maintained.

(d)Explain how an oil change is carried out in a farm transportation vehicle.

2.(a)Give the function of the following engine parts of small engines:

(i) Carburetor(ii) Piston(iii) Shroud(iii) Magneto

(b)Explain the precautions one should take in setting up a pump by a river for pumping water.

(c)How you would prepare the pump for pumping?

(d)If the engine is working well what are some of the reasons why the pump may not work efficiently after installation?

3.A farmer wishes to build a shelter for the production of pigs. The animals (fatteners) will be sold live to butchers. Mention as fully as possible what the shelter should provide, how the surroundings should be organized and the layout and spaces to be provided etc. to ensure smooth operation. Mention some necessary equipment.

4.(a)Explain are the various methods by which livestock waste is handled in animal shelters.

(b)Small two wheeled tractors are not very common on local farms.

(i)What needs can two- wheeled tractors satisfy on local farms and where are they most applicable

(ii)What are the disadvantages or inadequacies of these tractors and what reasons can explain the low level of use on local farms.

