

Name \_\_\_\_\_

Chapter \_\_\_\_\_

**2006 STATE FINAL**

**FLORIDA FFA FARM BUSINESS MANAGEMENT  
CAREER DEVELOPMENT EVENT**

**PART II--PROBLEM SOLVING**

200 Points

2 Hours

Answer each question directly on this test paper. **Carry all calculations to 2 significant decimal places.**

You should receive a package with 10 exhibits that are part of the contest. Your contest booklet should have 7 numbered pages of questions (including this page). There are 33 questions and each correct answer is worth 6 points. Partial credit may be given, so be certain to show your work. You may use a calculator.

The budgets provided for this test include all costs except the costs of overhead, risk and management (including the manager's labor contribution). The difference between specified costs and total receipts is called "returns to overhead, risk and management" and is frequently abbreviated as "returns to ORM".

For each question make only those assumptions specified for that question. Unless explicitly specified, assumptions do not "carry forward" from one question to the next.

All Federal Income Tax related questions in this contest are based on tax rules as specified in the IRS Farmer's Tax Guide for 2005 returns which you should receive with this contest.

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\*\*\*\*\*KEY\*\*\*\*\*

*Questions 1-17 refer to the cost of equipment and enterprise budgets in Exhibits 1-6. These budgets were prepared by Mr. Timothy Hewitt, an economist in the Food & Resource Economics Department, University of Florida. Unless otherwise directed, ignore the change in "interest on cash expenses" associated with additional or reduced cash expenses.*

1. What is the break-even price on total costs for irrigated corn with a yield of 127 bu/acre?

$$\$464.74/127 = \$3.66$$

2. The cotton budget is based on what yield?

700 lbs.

3. If Sam has a cotton yield of 800 lbs/acre, by how much would the total costs increase over the total costs shown in the cotton budget?

$$100 * 0.10 = \$10.00$$

4. The okra budget is based on what yield?

700 ½ bu cartons

5. What is the break-even price on total costs of an okra producer with a yield of 630 ½bu/acre?

$$(\$824.08 + (8.40 * 630)) / 630 = \$9.71$$

6. Joe intends to plant 7 acres of bell peppers. How many tons of mixed fertilizer should he buy?

$$(7 * 10 * 100) / 2000 = 3.5 \text{ tons}$$

7. Joe has forward contracted his bell peppers at \$9.00 per carton. If his yield is 420 cartons/acre, what are his total costs per acre?

$$1689.35 + (4.25 * 420) = \$3,474.35$$

8. Using the assumptions in #7, what is Joe's return on ORM from the 7 acres?

$$7((420 * 9.00) - 3474.35) = \$2,139.55$$

9. Jane has 200 acres of field crops that she moldboard plows with her 80 hp tractor. How much time (in minutes) would she save if she traded up to a 135 hp tractor?

$$60 * ((200 * 0.25) - (200 * 0.24)) = 120$$

Questions 10-17 are based on the information about Dusty's farm in the table immediately below:

Crop	Acres	Yield	Price
Cotton	200	700 lb/acre	\$0.95/lb
Irrigated Corn	80	175 bu/acre	\$2.50/bu

10. What is Dusty's total interest expense?

$$(200 * 24.29) + (80 * 14.86) = \$6,046.80$$

11. What are Dusty's total costs?

$$(200 * 565.02) + (80 * 464.74) = \$150,183.20$$

12. What is Dusty's total return to ORM?

$$(200 * 700 * 0.95) + (80 * 175 * 2.50) - 150183.20 = \$17,816.80$$

13. How many tons of lime will Dusty use?

$$(200 * 0.5) + (80 * 0.33) = 126.40 \text{ tons}$$

14. How much rent will Dusty pay?

$$(200 * 40) + (80 * 40) = \$11,200.00$$

\*\*\*\*\*KEY\*\*\*\*\*

15. According to the cotton budget, Dusty pays \$22.18 per acre for “defoliant”. What is the purpose of this expenditure?

Used to remove the leaves of the cotton plant prior to harvesting

16. What is Dusty’s break-even yield on corn?

$$(2.50 * x) - 464.74 = 0 \quad x = 185.90 \text{ bu/acre}$$

17. What is Dusty’s break-even yield on cotton?

$$(0.95 * x) - ((565.02 - 70.00) + (x * 0.10)) = 0 \quad x = 582.38 \text{ lbs/acre}$$

*Questions 18-23 deal with financial analysis. Each problem can be solved using the financial tables presented in Exhibits 7 and 8.*

18. Fran put \$300.00 in a savings account 7 years ago. If the account earns 6% per annum, how much is in that account today assuming no additions or withdrawals over the seven year period?

$$300 * 1.503630 = \$451.09$$

19. Ed’s grandfather promises to give Ed a \$6,000 gift when he graduates from UF. Using a 6% discount rate, what is the present value of this promise if Ed plans to graduate 5 years from now?

$$6000 * 0.747258 = \$4,483.55$$

20. If Juan puts \$100 into a bank account in each of the next 15 years at 6% per annum, how much will he have at the end of the 15 years?

$$100 * 23.275970 = \$2,327.60$$

\*\*\*\*\*KEY\*\*\*\*\*

21. Using the assumptions of question #20, how much more would Juan have had if he had put the money in an account earning 8% per annum?

$$100 (27.152114 - 23.275970) = \$387.61$$

22. Rosa bought 200 acres of land at \$500 per acre. She paid 20% down and financed the rest with an 8%, 30-year mortgage. What are Rosa's annual mortgage payments?

$$200 * 500 * 0.8 * 0.088827 = \$7,106.16$$

23. Jack won the lottery. He will receive \$1.2 million in each of the next 20 years. Using an 8% discount rate, what is the present value of Jack's winnings?

$$1.2 * 9.818147 = \$11.78 \text{ million}$$

*Questions 24-28 are based on the net worth statement for the Green farm shown in Exhibit 9.*

24. What is the Green's net worth on 12/31/2005?

$$854990 - 399550 = \$455,440$$

25. At the end of 2004, what was the Green's current ratio?

$$209040 / 57500 = 3.64$$

26. What was the Green's debt-equity ratio at the end of 2005?

$$399550 / 455400 = 0.88$$

27. How much working capital did the Green's have at the end of 2005?

$$182730 - 58800 = \$123,930.00$$

28. What significant change occurred in 2005?

The Greens bought a new tractor

*Questions 29-33 concern federal taxes. For all questions the IRS publication Farmers Tax Guide is the definitive source of information. A copy of the relevant portions of the Tax Guide are in Exhibit 10.*

29. In December 2004, a grove owner sold 6,000 boxes of early season oranges to his cooperative. In January 2005 he received a check in the amount of \$18,000. He calculates his expenses for the purposes of his income tax as \$15,000. He uses calendar year accounting for his taxes. Below show what he would claim on this taxes for 2004 and 2005 if he uses the accrual accounting method.

	2004	2005
Income	\$18,000	
Expenses	\$15,000	

Below show what he would claim on this taxes for 2004 and 2005 if he uses the cash accounting method.

	2004	2005
Income		\$18,000
Expenses	\$15,000	

30. George bought a tractor in June, 2005. He paid the dealer \$10,000 in cash, borrowed \$60,000, and traded in his old tractor for a \$15,000 credit. For the purposes of Federal income tax, what is the basis for the new tractor?

$$10,000 + 60,000 + 15,000 = \$85,000$$

31. In 2003 Susan established an orange grove at a cost of \$80,000. As shown on page 46 of the Farmer's Tax Guide she elected to depreciate the grove using GDS/SL. How much depreciation can she claim on her 2005 tax return?

10-year, straight line       $80,000 / 10 = \$8,000$

32. In June, 2002 Jorge bought a new combine for \$170,000. He is depreciating it using MACRS/GDS. How much depreciation on the combine can he claim on his 2005 tax return?

7-year, 2005 is year 4       $170,000 * 0.1225 = \$20,825$

33. In June, 2004 Sarah bought a new pick-up truck to use at her horse farm. The truck cost \$35,000. Sarah claims that 90% of the truck's mileage is for the horse farm and 10% is for personal use. How much depreciation can Sarah claim on her 2005 tax return?

$5,300 * 0.9 = \$4,770$

## **END OF PART II**

Results will be posted on [www.fred.ifas.ufl.edu/FLFFA/fbm](http://www.fred.ifas.ufl.edu/FLFFA/fbm)

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