

FFA Farm Business Management Career Development Event

State Final

April, 2007

PART II

200 Points
2 Hours

Important typo: Footnote #3 on exhibits 5 and 6 should read “future value” rather than “present value”.

Answer each question directly on this exam..

You should receive a package with 7 exhibits that are part of the test. Your test booklet should have 7 numbered pages of questions (including this page). There are 33 questions and each correct answer is worth 6 points. You may use a calculator.

Most budgets provided for this test include all costs other than 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 abbreviated as ORM. Copies of the budgets are available at <http://nfrec.ifas.ufl.edu/Hewitt/budgets.htm>

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

All Federal Income Tax related questions in this contest are based on tax rules as specified in the IRS Farmer's Tax Guide for 2006 returns (Exhibit 7).

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Questions 1-15 refer to the cost of equipment and enterprise budgets in Exhibits 1-3. These budgets were prepared by Prof. 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. According to the dryland corn budget, what is the price per ton of potash?

$$2000 * 0.23 = \$460.00$$

2. What is the total fertilizer (NPK) expense for a dryland corn farmer with 80 acres?

$$80(48.00 + 13.20 + 13.80) = \$6,000.00$$

3. Sam’s dryland corn yields 90 bushels/acre. He will sell it for \$3.60/bu. What are his per acre returns to ORM based on total costs?

$$(90 * 3.60) - 282.80 = \$41.20$$

4. The budget for soybeans includes an expense of \$8.50 per acre for a “scouting fee”. What is this for?

A professional to look for (scout) insects and disease in the field and to recommend treatment if anything is found.

Lucy farms 120 dryland acres in the panhandle. The table below shows the specifics of her operation. Use this information to answer questions 5 through 8.

	Acres	Yield/acre	Price/bu.
Dryland corn	80	85	\$3.50
Soybeans	40	44	\$5.75

5. Assume that Lucy must borrow all of her cash expenses. How much will she have to borrow?

$$(80*218.46) + (40*183.11) = \$24,801.20$$

6. What are her total fixed costs?

$$(80*44.67) + (40*48.26) = \$5,504.00$$

7. How many man-days of labor will she have to hire? [Assume one man-day = 8 hours]

$$(80*1.5) + (40*1.5) = 180 \text{ hours} \quad 180/8 = 22.5 \text{ man-days}$$

8. What is Lucy's total return to ORM from her 120 acres?

$$[80*((85*3.50)-282.80)] + [40*((44*5.75)-247.85)] = \$1,382.00$$

9. Mike has several acres of okra that is ready to harvest. He estimates that his yield is going to be 700 ½ bushels per acre. What is the minimum price for okra for which he would proceed to harvest? That is, if the price fell below this value, he would let the crop rot in the field.

$$5880/700 = \$8.40$$

10. Recalculate your result to #9 above using an expected yield of 600 ½ bushels per acre.

$$(600*8.40)/600 = \$8.40$$

11. Notice that Mike's okra budget includes a charge for overhead and management. How is this calculated?

10% of pre-harvest cash expenses

12. What is the total cost per acre if Mike makes six applications of irrigation on his okra?

$$85.00 + (6*11.50) + \$154.00$$

13. If Mike provided all of the pre-harvest labor, what would be the percentage decrease in this pre-harvest cash expenses?

$$-102.00/787.91 = -0.1295 \text{ or } -12.95\%$$

14. If Mike's okra yield is 700 ½ bushels per acre and he sells the okra for \$10.25 per ½ bushel, what are his total returns to ORM per acre?

$$(700 \times 10.25) - 6889.05 + 78.79 = \$364.74$$

15. Because of his location, Mike's okra operation requires 30 miles of pickup truck use. What are his total costs?

$$6889.05 + (0.5 \times (3.80 + 3.60)) = \$6,892.75$$

Questions 16-21 are based on the net worth statement for the Guzman farm shown in Exhibit 4.

16. From the end of 2005 to the end of 2006, what is the change in the Guzman's net worth?

$$519,367 - 616,100 = -\$96,733.00$$

17. What is the Guzman's current ratio on 12/31/2005?

$$150,000 / 94,800 = 1.58$$

18. What is the Guzman's debt-equity (or leverage) ratio at the end of 2006?

$$2,122,333 / 519,367 = 4.09$$

19. How much working capital does the Guzman family have at the end of 2006?

$$23,300 - 114,188 = -\$90,888.00$$

20. Two common guidelines of the financial situation of a family farm are liquidity and solvency. During the year shown (2006), the Guzman's

liquidity has decreased

solvency has decreased

21. Based on the balance sheet, what important changes have the Guzmans made during 2006?

1. Got out of the livestock business
2. Bought more land

Questions 22-27 deal with financial analysis. Each problem can be solved using the financial tables presented in Exhibits 5 and 6.

22. What is the present value today of \$20,000 to be received 8 years from now using a 7% discount rate?

$$20,000 * 0.582009 = \$11,640.18$$

23. If you receive \$12,000 today and put it into a bank savings account that earns 9% per annum, compounded annually, how much will you have 7 years from now?

$$12,000 * 1.828039 = \$21,936.47$$

24. Sam will retire 15 years from now. At retirement he wants to have \$1.2 million. If he makes equal annual payments into an account that earns 9% per annum, how much should that annual payment be?

$$1,200,000 * 0.034059 = \$40,870.80$$

25. What are the annual payments on a 20 year mortgage at 7% for \$800,000?

$$800,000 * 0.094393 = \$75,514.40$$

26. Laura and Miguel are saving for their children's education by putting \$2,500 each year into an account that earns 9% per annum. After 17 years, how much will be in that account?

$$2,500 * 36.973705 = \$92,434.26$$

27. Bill has \$17,000 to invest. His bank will pay an insured 7% per annum. His broker says that the stock market returns an average of 9% per annum. At the end of 15 years, how much more would he have from the stock market (assuming that it did, in fact, return 9%) than from the bank?

$$17,000(3.642482-2.759032) = \$15,018.65$$

Questions 28-33 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 7.

28. William bought a new tractor. He paid the dealer \$12,000 in cash and borrowed an additional \$42,000 from the dealer's finance company. He traded in his old tractor for which the dealer gave him a credit of \$8,000 towards the purchase of the new tractor. For the purposes of his income tax, what is the basis of William's new tractor?

$$12,000+42,000+8,000 = \$62,000$$

29. In the example above (#28), if William took a section 179 expense deduction for the new tractor, what would the basis of the new tractor be?

zero

30. Dusty bought a new combine in July, 2004 for \$150,000. How much depreciation can he claim on his 2006 taxes using MACRS/GDS?

$$150,000*15.03\% = \$22,545.00$$

31. In 1999, Wilma established an orange grove for \$600,000. How much depreciation can she claim on her 2006 taxes using GDS?

$$600,000*0.10 = \$60,000.00$$

32. In 2003 Gary bought a tractor for \$90,000 for use on his second farm in Guatemala. How much depreciation can he claim on his 2006 taxes?

Must use ADS-SL
 $90,000*0.10 = \$9,000.00$

33. In June 2003, Dusty bought a new tractor for \$80,000. His depreciation from June 2003 through 2005 is \$35,896. In January 2006 Dusty sold the tractor for \$50,000. What must he claim on his 2006 taxes as a result of the sale of the tractor?

$$\text{Capital gain} = 50,000 - (80,000 - 35,896) = \$5,896.00$$

END OF PART II