

## Farm Business Management

- A. Circle the best answer. Put a square around your second choice if you want. (4 pts. each)**
1. A loan deficiency payment is:
    - a. a penalty charged by a lender when a loan payment is late
    - b. a loan obtained from the Farm Service Agency at below market interest rates
    - c. a payment available from the Farm Service Agency when cash grain prices are below the county loan rate set by the USDA
    - d. a payment available from the Farm Service Agency when crop yields are below average
  2. The “actual revenue” used to calculate a crop revenue insurance indemnity payment is based on:
    - a. the price a farmer actually sells the grain for
    - b. the average futures price during October or November
    - c. the county loan rate set by the USDA
    - d. the average futures price during February
  3. Which forward pricing tool involves selling and then repurchasing a futures contract?
    - a. hedge
    - b. forward contract
    - c. put options
    - d. marketing loan
  4. Which type of crop insurance pays the producer an indemnity payment only when the average yield for the whole county is below the level of guarantee selected?
    - a. APH (yield)
    - b. revenue insurance
    - c. group risk insurance
    - d. hail insurance
  5. Futures contracts on which livestock revenue insurance policies are based are traded on the:
    - a. Chicago Board of Trade
    - b. Chicago Mercantile Exchange
    - c. Minneapolis Grain Exchange
    - d. New York Stock Exchange
  6. A cattle feeder who wants to lock in a maximum price for feed to be purchased several months from now would:
    - a. buy put options
    - b. sell put options
    - c. buy call options
    - d. sell call options

7. If a certain risky event has four possible outcomes, and a farmer can choose from three possible strategies to deal with it, how many different results could there be?
  - a. 3
  - b. 4
  - c. 7
  - d. 12
  
8. "Enterprise" accounting shows the income and expenses from:
  - a. each major type of crop or livestock on the farm
  - b. each major asset on the farm
  - c. each tract of land operated by the farm
  - d. the entire farm business
  
9. Which type of income tax has a fixed (flat) tax rate up to a maximum number of dollars?
  - a. Federal income tax
  - b. Iowa income tax
  - c. self-employment tax
  - d. capital gains tax
  
10. A farmer who does custom farming for a landowner bears the risk of:
  - a. low selling prices for crops
  - b. below average yields
  - c. unexpected increases in fuel prices
  - d. all of these
  
11. Which of the following financial statements shows information at a point in time rather than over a period of time?
  - a. net worth statement
  - b. statement of cash flows
  - c. net farm income statement
  - d. statement of owner equity
  
12. A chart of accounts in a farm accounting system is:
  - a. a list of all the checking and savings accounts the farm has
  - b. a list of all the people or businesses to whom the farm writes checks
  - c. a list of all the people or businesses from whom the farm receives revenue
  - d. a list of all the categories of income and expenses a farm has
  
13. In the short run, expected gross income from a farming enterprise needs to exceed \_\_\_\_\_ in order to justify production.
  - a. variable costs
  - b. fixed costs
  - c. total costs
  - d. opportunity costs
  
14. The purpose of making accrual adjustments to cash income at the end of the accounting year is:
  - a. to include products produced in the previous year that were sold this year
  - b. to include the value of products produced this year but not sold yet
  - c. to include income from selling capital assets for more than their cost value
  - d. to include the value of farm raised produce consumed at home

**B. Answer briefly. Show your work for problems.**

15. Put options and loan deficiency payments both protect farmers against falling product prices. List three ways they are different from each other. **(6 pts.)**

a.

b.

c.

16. List four things that are specified in a forward contract to sell grain entered into with a local elevator or grain processor. **(4 pts.)**

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

17. A grain forecaster estimates the following possibilities for the price of soybeans for the 2005 crop marketing year:

<u>Price</u>	<u>Probability</u>
\$5.45	20%
\$5.00	50%
\$4.85	30%

What is the expected value for the price of soybeans? **(4 pts.)**      \$ \_\_\_\_\_

18. a. If a hog producer places a hedge for hogs to be marketed in three months when the local cash price is \$.60 per pound and the futures price is \$.65, what net price is realized if on the date of sale the cash price is \$.72 and the futures price is \$.75? Assume the hedge is lifted on the same day. **(4 pts.)**

\$ \_\_\_\_\_

b. What if they bought put options for \$.05 at a strike price of \$.70? **(4 pts.)**  
What would the value of put options probably be on the day they sold the hogs?

\$ \_\_\_\_\_

What would their net selling price be in this case?      \$ \_\_\_\_\_

19. List three types of farm commodity payments currently available from the USDA, and tell how each one reduces risk, if any. **(6 pts.)**

a.

b.

c.

20. Due to recent bumper crops, Smith Farms finds themselves short of grain storage. They can construct a new bin with a capacity of 25,000 bushels of corn for an initial cost of \$40,000.

a. If they borrow \$30,000 at 8% interest and use \$10,000 of their own equity capital which has been earning a 4% return, what is their weighted cost of capital? **(2 pts.)**

\_\_\_\_\_ %

b. How much are their average annual interest and depreciation costs, assuming the same cost of capital, a 20-year life, and zero salvage value? **(4 pts.)**

Interest: \$ \_\_\_\_\_

Depreciation: \$ \_\_\_\_\_

21. A certain farm family files their income taxes using the cash accounting option. Is their IRS Schedule F, Profit or Loss From Farming, a good estimate of their actual net income? Give at least two reasons why the income tax “Net Farm Profit” value might differ from their true net farm income. **(6 pts.)**

a.

b.

22. The operators of a family dairy farm in northeast Iowa have come to you for financial advice. They are thinking about expanding their herd from 100 to 200 cows. Below are their net worth statements for the last three years.

	<u>Jan. 1, 2004</u>	<u>Jan. 1, 2005</u>	<u>Jan. 1, 2006</u>
<b><u>Assets</u></b>			
Cash on hand	\$ 12,000	\$ 11,000	\$ 6,000
Stored crops for feed	100,000	85,000	60,000
Dairy cows (100 head)	120,000	120,000	120,000
Other cattle	20,000	20,000	20,000
Machinery & equipment	100,000	90,000	125,000
Buildings	150,000	140,000	130,000
Land (240 acres) (market value)	<u>480,000</u>	<u>480,000</u>	<u>600,000</u>
Total assets	\$982,000	\$946,000	\$1,061,000
<b><u>Liabilities</u></b>			
Operating loan	\$40,000	\$65,000	\$105,000
Land and equipment loans			
- due this year	40,000	40,000	40,000
- remainder	<u>500,000</u>	<u>460,000</u>	<u>420,000</u>
Total liabilities	\$580,000	\$565,000	\$565,000
Net worth	\$402,000	\$381,000	\$496,000
		<b><u>2004</u></b>	<b><u>2005</u></b>
Net farm income (accrual)		\$29,000	\$45,000

.....  
 How much did their net worth change each year? (4 pts.)

- |   | <b><u>2004</u></b> | <b><u>2005</u></b> |
|---|--------------------|--------------------|
| a. Market value   | _____              | _____              |
| b. Cost value (no more land was purchased,<br>and all assets except land are listed at cost value)                                | _____              | _____              |
|   | <b><u>2004</u></b> | <b><u>2005</u></b> |
| c. How much did they spend on family living or<br>other nonfarm expenses each year? (4 pts.)                                      | _____              | _____              |
| d. How would you evaluate their <u>solvency</u> ? How did it change over the two years? Give some<br>numerical measures. (5 pts.) |                    |                    |

e. How would you evaluate their liquidity? Give some measures. What can you tell about how they met their cash flow needs each year? **(5 pts.)**

f. Do you think they would be a good loan prospect? Why or why not? **(5 pts.)**

23. Choose one of the following types of budgets and state what its main purpose is. Circle your choice.

Enterprise budget

Cash flow budget

Partial budget

a. Purpose? **(3 pts.)**

b. Outline the main parts and important values for the budget you chose. **(5 pts.)**

**Economics 330  
Fall 2005  
Final Exam**

**KEY**

- |      |       |
|------|-------|
| 1. c | 8. a  |
| 2. b | 9. c  |
| 3. a | 10. c |
| 4. c | 11. a |
| 5. b | 12. d |
| 6. c | 13. a |
| 7. d | 14. b |

15. a. LDPs are paid from USDA, puts from private sector.  
 b. LDPs can be applied for only once.  
 c. LDP has no premium or broker's fee.  
 Put has basis risk, LDP does not (less).  
 LDP is based off cash prices.

16. a. Quantity  
 b. Price  
 c. Delivery date  
 d. Delivery location  
 e. Quality required  
 f. Name of seller

17.

<u>Price</u>	<u>Probability</u>		
\$5.45	x 20%	=	\$1.09
\$5.00	x 50%	=	\$2.50
\$4.85	x 30%	=	<u>\$1.46</u>
			\$5.05
			<u>\$5.045</u>

18. a. Sell futures \$ .65  
 Buy back futures - .75  
 Sell cash + .72  
 \$ .62
- b. Puts would have zero value \$ 0  
 .72 - .05 = \$ .67

19. a. Loan deficiency payment: equal to difference between local cash price and county loan rate on a given day offsets low spot prices.  
 b. Counter cyclical payment: equal to difference between 12-month average market price and the target price offsets low annual prices.  
 c. Direct payment: fixed, no risk reduction, but adds liquidity.  
 Dairy LDP.

- 20.
- a.  $(8\% \times \frac{30,000}{40,000}) + (4\% \times \frac{10,000}{40,000})$   
 6% + 1% = 7%
- b. Interest:  $\frac{40,000}{2} \times 7\% =$  \$1,400
- Depreciation:  $\frac{40,000}{20 \text{ years}} =$  \$2,000

21. a. Does not adjust for beginning and ending inventory values, accounts payable or receivable. Does not include capital gains income.  
 b. Depreciation expense may be unrealistically "fast".

22.

	<u>2004</u>		<u>2005</u>
a.	381,000 – 402,000 = <u>(21,000)</u>		(496,000 – 381,000) = <u>115,000</u>
b.	(21,000) - 0 = <u>(21,000)</u>		115,000 – 120,000 = <u>(5,000)</u>
c.	29,000 + 21,000 = <u>50,000</u>		45,000 + 5,000 = <u>50,000</u>

- d. Net worth: went down both years (cost value), but market value of land increased.  
 Debt/asset ratio: Somewhat risky (>50%)  
 1-1-04: .59  
 1-1-05: .60  
 1-1-06: .53

e. Working capital

		Current Ratio
1-1-04	112,000 – 40,000 = 72,000	2.8
1-1-05	96,000 – 65,000 = 31,000	1.5
1-1-06	66,000 – 105,000 = (39,000)	.63

Liquidity went down hill fast. Increased operating loan, decreased feed inventory.

- f. No. Operating loan balance has increased each year.  
 Current inventories have decreased. D/A ratio is high.  
 Financed machinery purchase with operating loan.

23.

- a. Enterprise: Show all costs and returns for one unit of particular enterprise.  
 Cash flow: Show amount and timing of expected cash inflows.  
 Partial: Show costs and revenues that would change due to a particular action.

b.

<u>Enterprise</u>	<u>Cash Flow</u>	<u>Partial</u>
Gross revenue	Cash inflows	Increased revenue
Variable costs	Cash outflows	Decreased costs
Fixed costs	Net cash flow	Increased costs
Gross margin	Cash balance	Decreased revenue
Profit	Operating loan balance	Net change
Break-even price		