FARM BUSINESS MANAGEMENT

A. Circle the correct answer. Put a square around your second choice, if you wish. (4 pts each)

1. Which forward pricing tool eliminates most of the risk of losses from decreasing prices, while still allowing some benefit if prices rise instead?
   a. forward cash contract with local buyer
   b. hedging by selling a futures contract
   c. purchasing PUT options
   d. storing grain and selling on the cash market

2. “Speculators” who trade futures contracts on the Board of Trade:
   a. are engaging in illegal activities
   b. are protecting themselves against a fall in the price of a commodity they own
   c. are protecting themselves against a rise in the price of a commodity they expect to buy in the future
   d. take over risk from farmers or elevators, in hopes of earning a profit

3. Farmers who trade futures contracts are required to pay money into a margin account:
   a. to cover potential losses on contracts that are bought or sold
   b. to cover transportation costs to the contract delivery point
   c. to cover the broker’s transaction fees
   d. to cover interest costs on an operating loan

4. Livestock Risk Protection (LRP) insurance protects hog and cattle producers against:
   a. decreasing gross revenue
   b. declining livestock market prices
   c. declining livestock prices and rising feed prices
   d. death loss due to disease or injury

5. A grain farmer can request a Loan Deficiency Payment when the ____________________ is below the USDA loan rate for his/her county.
   a. futures price on a given day
   b. average futures price for October
   c. average cash price for 12 months following harvest
   d. posted county price on a given day

6. Which type of insurance does not protect farmers against low prices?
   a. Crop Revenue Coverage (CRC)
   b. APH insurance
   c. Revenue Assurance (RA)
   d. Livestock Risk Protection (LRP)
7. Which type of budget lists all the revenue and expenses expected for a single unit of production?
   a. cash flow
   b. whole farm
   c. enterprise
   d. partial

8. Which of the following is an “opportunity cost”?
   a. depreciation on buildings
   b. interest paid on a loan
   c. principal paid on a loan
   d. interest that could have been earned on equity capital

9. A payment that farmers can receive from the USDA when the average grain price for 12 months following harvest is below a certain trigger level is called a:
   a. direct payment
   b. countercyclical payment
   c. loan deficiency payment
   d. conservation reserve payment

10. In a crop share lease, the crop should be divided in approximately the same proportion as:
    a. total costs
    b. variable costs
    c. labor is contributed
    d. specified by state laws

11. A farm business analysis measure that can be used to compare liquidity across farms of different sizes is:
    a. asset turnover ratio
    b. current ratio
    c. working capital
    d. % return on assets

12. Market value net worth and cost value net worth differ from each other by:
    a. retained net farm income
    b. withdrawals for family living expenses
    c. value of property inherited
    d. adjustments to the market value of capital assets
13. In the graph below, the dark bars represent the distribution of net revenue per acre under which type of risk management tool? The light bars represent the distribution with no risk management tools in effect.

   a. loan deficiency payment
   b. crop revenue insurance
   c. hedging with a futures contract
   d. buying PUT options

14. An installment loan amortized with a “balloon payment” requires smaller payments in the early years because:

   a. a lower interest rate is charged
   b. no interest is paid on the balloon payment
   c. less principal is being repaid, until the last payment
   d. the number of years to repay is greater

15. Which method of acquiring the services of farm machinery allows the operator to build up net worth (equity) in the equipment over time?

   a. leasing
   b. purchasing with an installment loan
   c. custom hiring
   d. rental

16. The main purpose of “enterprise accounting” in a farm business is to:

   a. determine net income and capital gains for filing the income tax return
   b. adjust cash income for the value of inventories carried over from one year to the next
   c. produce all four major farm financial statements
   d. compare the profitability of the different major products to be produced and sold

B. Show your work where appropriate.

17. Given the following income tax brackets and rates, how much total income tax would you owe if your taxable income was $50,000, after deductions and exemptions? (4 pts)

<table>
<thead>
<tr>
<th>Tax Bracket</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 to 20,000</td>
<td>10%</td>
</tr>
<tr>
<td>$20,000 to $40,000</td>
<td>15%</td>
</tr>
<tr>
<td>$40,000 to $80,000</td>
<td>25%</td>
</tr>
<tr>
<td>Over $80,000</td>
<td>40%</td>
</tr>
</tbody>
</table>

   $_______________
18. Rocky Top Farms, Inc., is considering three different multiple peril crop insurance policies for their corn production this year. Their APH (proven yield) is 150 bushels per acre.

a) APH yield insurance at an 80% guarantee. The indemnity price is $2.60 per bushel this year.

b) Revenue insurance at a fixed guarantee of 80% of their projected gross revenue, based on the average February futures price of $3.00 per bushel (standard RA).

c) Revenue insurance with the same 80% initial guarantee, as in (b), but with the option for a higher guarantee if prices rise by harvest (CRC, optional RA).

What would be the level of the final guarantee, the actual yield or revenue, and the indemnity payment (if any) for each policy if their actual yield is only 100 bushels per acre, and the harvest futures price is $3.20 per bushel? Show your work. (12 pts)

<table>
<thead>
<tr>
<th>Final Guarantee Per Acre</th>
<th>Actual Yield or Revenue</th>
<th>Indemnity Payment Per Acre (if any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) APH</td>
<td>___________ bu.</td>
<td>___________ bu.</td>
</tr>
<tr>
<td>b) standard RA</td>
<td>$_________</td>
<td>$_________</td>
</tr>
<tr>
<td>c) CRC or opt. RA</td>
<td>$_________</td>
<td>$_________</td>
</tr>
</tbody>
</table>

19. List two advantages of a cash forward contract over a hedge with a futures contract. (4 pts)

a.

b.

20. List two advantages of a hedge with a futures contract over a cash forward contract. (4 pts)

a.

b.
21. A wheat farmer is considering pricing part of his 2005 crop three months before harvest. He has obtained the following information:

- Cash price at the nearest elevator today: $3.00/bu.
- Forward contract price offered by elevator for delivery at harvest: $3.28/bu.
- Futures price today at the K.C. Board of Trade: $3.50/bu.
- PUT options premium (for a $3.50 contract): $0.12/bu.
- USDA loan rate in the county: $2.80/bu.

Suppose at harvest time the local cash price is only $2.72, the futures price has declined to $3.00 per bushel, and PUT options now sell for a premium of $0.60. How much would his net price have been under each of the following pricing strategies (ignoring government payments)? (18 pts)

a. No forward pricing, sell for cash at harvest $_________/bu.

b. Forward cash contract with elevator $_________/bu.

c. Hedge, then sell at harvest $_________/bu.

d. Use PUT options, then sell at harvest $_________/bu.

e. How did the futures contract “basis” change over the time period described? (Circle the correct answer.)

a. widened
b. stayed the same
c. narrowed
d. can’t tell

f. If the USDA posted county price (PCP) is the same as the local cash price, how large is the loan deficiency payment (LDP) that the farmer can apply for at harvest? $_________/bu.

22. List the four categories into which cash receipts and expenditures are divided in a farm accounting system. (4 pts.)

a. _______________________________    b. _______________________________

c. _______________________________    d. _______________________________
23. List the four major farm financial statements that were studied this semester. (8 pts)

_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

24. Choose one of the four types of farm budgets listed below and show the major parts that are included. Do not include numerical values or specific entries, just the main headings. Circle the one you choose. (8 pts)
   - Enterprise budget
   - Partial budget
   - Cash flow budget
   - Whole farm budget
FARM BUSINESS MANAGEMENT

A.
1. c
2. d
3. a
4. b
5. d
6. b
7. c
8. d
9. b
10. a
11. b
12. d
13. b
14. c
15. b
16. d

B.
17. $20,000 x 10% = $2,000
   $20,000 x 15% = $3,000
   $10,000 x 25% = $2,500
   $50,000 = $7,500

18. Final Guarantee
    Actual Yield
    Indemnity Payment
    Per Acre   or Revenue   Per Acre (if any)
    a) APH:
       150 bu. x 80% = 120 bu.  100 bu.  20 bu. x $2.60 = $52
    b) Standard RA:
       150 bu. x $3.00 x 80% = $360  100 bu. x $3.20 = $320  $360 – 320 = $40
    c) CRC or opt. RA:
       50 bu. x $3.20 x 80% = $384  100 bu. x $3.20 = $320  $384 – 320 = $64

19. a. No basis risk-price is fixed
      No broker’s fees
   b. Can sell any number of bushels
      No margin accounts

20. a. Can lift the hedge at any time
      Can sell the actual crop at any time
   b. Can sell the actual crop at any location

21. a. $2.72/bu.
    b. $3.28/bu.
    c. $3.22/bu. ($3.50 – 3.00 + 2.72 = $3.22)
    d. $3.20/bu. ($60 - .12 + 2.72 = $3.20)
    e. $ .08/bu. ($2.80 – 2.72 = .08/bu)
22. a. operating (income, expenses)  
    b. financing (loans)  
    c. investing (purchases and sales of capital assets)  
    d. nonfarm (income, expenses)  

23. Net worth statement (balance sheet)  
    Net farm income statement (profit and loss)  
    Statement of cash flows  
    Statement of owner equity  

24.  

<table>
<thead>
<tr>
<th>Partial Decision Unit, time period</th>
<th>Enterprise, Unit, Time Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased income</td>
<td>Revenue</td>
</tr>
<tr>
<td>Increased costs</td>
<td>Variable costs</td>
</tr>
<tr>
<td>Decreased income</td>
<td>- gross margin</td>
</tr>
<tr>
<td>Decreased costs</td>
<td>Fixed costs</td>
</tr>
<tr>
<td>Net change</td>
<td>Total costs</td>
</tr>
<tr>
<td></td>
<td>- profit</td>
</tr>
<tr>
<td></td>
<td>Breakeven price</td>
</tr>
</tbody>
</table>

| Whole Farm                        |  
|-----------------------------------|-----------------------------|
| Income/unit x units = Income      | Income                      |
| Variable costs/unit x units = Var. costs | Fixed costs               |
|                                    | Net income                  |

| Cash Flow                          |  
|-----------------------------------|-----------------------------|
| Time periods                       |  
| Cash Inflows                       | Sales, other income         |
|                                   | New loans                   |
|                                   | Sales of capital assets     |
|                                   | Nonfarm income              |
| Cash Outflows                      | Cash expenses               |
|                                   | Loan payments               |
|                                   | Purchases of capital assets |
|                                   | Nonfarm expenses            |
| Net cash flow                      | Cash on hand (beg)          |
|                                   | + new borrowing             |
|                                   | - payment on new borrowing  |
|                                   | = cash on hand (end)        |