PART I. Indicate the best answer.

**True or False (2pts. each)**

1. Production should continue in the long run as long as revenue will cover all costs.  
   \( \text{T} \)

2. Total fixed costs will decrease as more output is produced.  
   \( \text{F} \)

3. There is no opportunity cost on a farmer's own labor, only on hired labor.  
   \( \text{T} \)

4. A declining long run average cost curve indicates economies of size.  
   \( \text{T} \)

5. With two inputs, the use of each input should go down when the price of each input is doubled.  
   \( \text{F} \)

**Multiple Choice (3 pts. each)**

1. Which of the following are sources of price information for preparing budgets for agricultural enterprises?  
   a. Your past records  
   b. Agri-business firms  
   c. University Extension Service  
   d. Other producers  
   \( \text{F} \) All of the above

2. Which of the following are decision-making steps of management?  
   a. Implementation, set goals, analyze alternatives  
   b. Setting goals, make decision  
   c. Defining alternatives, accept responsibility, evaluate outcome  
   d. Accept responsibility, make decision, organize data  
   e. Evaluate outcome, set goals, define problems  
   \( \text{F} \) All are decision-making steps of management

3. In the long run, to justify producing grain crops, you should expect to receive enough total revenue from producing the crops to pay for:  
   a. all production costs  
   b. the fixed costs  
   c. all costs except land costs  
   d. the variable production costs plus taxes, interest and depreciation on the machinery  
   e. the variable production costs  
   f. None of the above is correct
4. Attached is an example budget for corn production. If you use the budget for 160 bushels per acre and a corn price of $2.00 per bushel, what is the profit per acre?
   a. $-50.30
   b. $148.30
   c. $121.39
   d. $320.00
   e. None of the above

5. Given the attached corn budget, what is the gross margin per acre if the corn price is $1.90 per bushel?
   a. $304
   b. $105.39
   c. $132.31
   d. $-66.30
   e. None of the above

6. Given the attached corn budget, if the price of corn is $1.90 per bushel, what is the level of profit for 100 acres of corn?
   a. $30,400
   b. $-6,630
   c. $10,539
   d. $13,231
   e. None of the above

7. If you use the attached corn budget and develop expected corn production levels for different levels of nitrogen fertilizer application, what would you get?
   a. An isoquant showing the relationship between corn output and corn input.
   b. A marginal rate of substitution showing the substitution between corn output and nitrogen input.
   c. A corn production function showing the relationship between corn output and nitrogen input.
   d. The inverse production relationship of corn and nitrogen fertilizer.
   e. Principle of increasing returns.
   f. None of the above.

8. Given the attached corn budget, what is the total cost of producing a bushel of corn? (Use the 160 bushel budget.)
   a. $2.31 per bushel
   b. $1.24 per bushel
   c. $1.07 per bushel
   d. $1.44 per bushel
   e. None of the above

9. In the attached corn budget the labor rate of $7.00 per hour is used to value labor. This is using the concept of:
   a. variable cost for a fixed item.
   b. cash cost for a fixed item.
   c. fixed cost for a variable item.
   d. opportunity cost.
   e. diminishing returns
   f. none of the above
10. For the attached corn budget, how low can the price of corn go in the short run before you would decide not to grow corn and to let the land sit idle? (Assume you have no other use for the land. You either produce corn or let it idle.)
   a. $2.31 or less per bushel
   b. $1.24 or less per bushel
   c. $1.37 or less per bushel
   d. $1.44 or less per bushel
   e. None of the above

11. In developing an enterprise budget for corn, what are the areas to consider? (You are producing corn, soybeans, and hogs.)
   a. Income or revenue for corn.
   b. Expenses for corn production.
   c. The total farm profit.
   d. All of the above.
   e. Only a and b above.

12. In developing an enterprise budget for corn, items which you need to consider would include:
   a. The unit you are budgeting, such as acre, etc.
   b. The time frame
   c. The expected soybean price
   d. The expected cost of producing wheat
   e. a and b above

13. Budgets are a common tool used in analyzing farm alternatives or decisions. Examples of budgets could include:
   a. your farm records
   b. your list of family and business goals
   c. an enterprise budget such as soybeans
   d. your list of business accomplishments
   e. all of the above
   f. none of the above

14. We talked about some components of farm business management. These could include:
   a. tax management
   b. budgets.
   c. your business goals and your family goals.
   d. all of the above.
   e. b and c above.

15. At the beginning of the semester we talked about the three C's. These were:
   a. communication, cash flow, critical analysis.
   b. coordination, consumption, cash flow.
   c. communication, coordination, critical analysis.
   d. communication, coordination, cooperation.
   e. none of the above.
16. Given the attached “Finishing Steer Calves” budget, what is the income (gross revenue) per animal placed on feed if the death loss is 5 percent and the market steer price is $.70 per pound.
   a. $805.00
      $764.75
   c. $796.95
   d. $659.68
   e. None of the above

17. For the “Finishing Steer Calves” budget, the 61 bushels of corn was:
   a. purchased
   b. raised on the farm
   c. can’t tell with the information provided

18. For the “Finishing Steer Calves” budget, if the market steer price is $.80 per pound, what is the income over variable costs per steer? All costs are as they are shown in the budget and the death loss is also 1 percent, as shown in the budget.
   a. $78.98
      $90.78
   c. $332.77
      $69.78
   e. none of the above

19. Physical product is ____________________ with input.
   a. increasing
   b. decreasing
   c. constant
   d. decreasing and equal to price

An isoquant represents
   a. Production possibilities holding output fixed
   b. Feasible input combinations holding output fixed
   c. Feasible output combinations holding inputs fixed
   d. a and b

21. Profits are maximized where
   a. value marginal product equals input price
   b. marginal revenue equals marginal cost
   c. output price times marginal product equals per-unit input costs
   d. all of the above
   e. none of the above

22. For a given level of output, total costs are minimized where
   a. the marginal rate of transformation of outputs is equal to the inverse price ratio
   b. marginal revenue is equal to marginal costs
   c. the marginal rate of substitution is equal to the inverse price ratio
   d. none of the above
23. If a farmer is producing where marginal revenue is greater than marginal cost
   a. inputs should be reduced
   b. inputs should be increased
   c. input should remain constant, profits are being maximized
   d. cannot answer with the information that is given

24. With inputs 1 and 2, the marginal rate of substitution of input 1 for input 2 is large (in absolute value) when
   a. input 1 is a good substitute for input 2
   b. input 1 is a poor substitute for input 2
   c. input 2 is a good substitute for input 1
   d. input 2 is a poor substitute for input 1
   e. a and d

25. To maximize profit, producers should
   a. maximize total revenue
   b. equate the marginal return of extra output with its marginal cost
   c. minimize total cost
   d. a and c

26. An isoquant
   a. slopes downward
   b. slopes upward
   c. is horizontal
   d. any of the above depending on input prices

27. A production possibilities curve shows
   a. all combinations of two inputs which will produce a fixed amount of output
   b. all combinations of two outputs which can be produced from a fixed amount of input
   c. the amount of output which can be obtained from different amounts of a variable input
   d. the profit possible from producing different combinations of two outputs

28. The opportunity cost of one more unit of a variable input is
   a. its market value at the time of its use
   b. its cost at the time of purchase
   c. the return from using that input in its next best alternative use
   d. the same as marginal cost
Part II: Short answer or essay.

1. (5 points) Listed below are several cost items which would be included in a budget. Indicate if they would be a variable cost (VC) or a fixed cost (FC) item.

<table>
<thead>
<tr>
<th>Item</th>
<th>VC/FC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance such as wind, fire, etc.</td>
<td>VC</td>
</tr>
<tr>
<td>Land charge for owned land</td>
<td>FC</td>
</tr>
<tr>
<td>Fertilizer for crop</td>
<td>VC</td>
</tr>
<tr>
<td>Depreciation of machinery</td>
<td>FC</td>
</tr>
<tr>
<td>Hired labor (salaried individual who is under contract to work for you for the next three years)</td>
<td>FC</td>
</tr>
</tbody>
</table>

PART III. Bonus (2 pts)

How do you spell the last names of the two lecture instructors in this class?

HueTh
Kliebstein
### Corn following Soybeans

<table>
<thead>
<tr>
<th>Item</th>
<th>Fixed</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preharvest Machinery</strong> 1/</td>
<td>$14.98</td>
<td>$9.43</td>
</tr>
<tr>
<td>Seed, Chemical, etc.</td>
<td>Units</td>
<td></td>
</tr>
<tr>
<td>Seed @ $0.98 per 1000 k.</td>
<td>30,000</td>
<td>$29.40</td>
</tr>
<tr>
<td>Nitrogen @ $0.16 per lb.</td>
<td>140</td>
<td>22.40</td>
</tr>
<tr>
<td>Phosphate @ $0.27 per lb.</td>
<td>60</td>
<td>16.20</td>
</tr>
<tr>
<td>Potash @ $0.14 per lb.</td>
<td>50</td>
<td>7.00</td>
</tr>
<tr>
<td>Lime (yearly cost)</td>
<td></td>
<td>6.00</td>
</tr>
<tr>
<td>Herbicide</td>
<td></td>
<td>30.00</td>
</tr>
<tr>
<td>Crop Insurance</td>
<td></td>
<td>6.00</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td>8.00</td>
</tr>
<tr>
<td>Interest on preharvest variable costs (8 months @ 9.5%)</td>
<td></td>
<td>8.51</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$133.51</strong></td>
</tr>
<tr>
<td><strong>Harvest Machinery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combine</td>
<td>$11.08</td>
<td>$9.23</td>
</tr>
<tr>
<td>Haul</td>
<td>3.20</td>
<td>3.20</td>
</tr>
<tr>
<td>Dry (LP Gas @ $0.58/gal.)</td>
<td>6.40</td>
<td>15.47</td>
</tr>
<tr>
<td>Handle</td>
<td>1.95</td>
<td>0.85</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$22.63</strong></td>
<td><strong>$28.75</strong></td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0 hours @ $7.00</td>
<td></td>
<td><strong>$21.00</strong></td>
</tr>
<tr>
<td><strong>Land</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash rent equivalent</td>
<td></td>
<td><strong>$140.00</strong></td>
</tr>
<tr>
<td><strong>Total fixed, variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per acre</td>
<td><strong>$198.61</strong></td>
<td><strong>$171.69</strong></td>
</tr>
<tr>
<td>Per bushel</td>
<td><strong>$1.24</strong></td>
<td><strong>$1.07</strong></td>
</tr>
<tr>
<td><strong>Total cost per acre</strong></td>
<td></td>
<td><strong>$370.30</strong></td>
</tr>
</tbody>
</table>

1/Apply N, tandem disk, field cultivate, plant, cultivate, and spray. See the Estimated Machinery Costs table.
FINISHING STEER CALVES – One Head

<table>
<thead>
<tr>
<th>Corn and Hay Ration</th>
<th>Total</th>
<th>Cash</th>
</tr>
</thead>
</table>

**INCOME**
- Sales income (1,150 lbs @ $________)  
  Minus death loss (-1.00% of sales)  
  GROSS INCOME

**VARIABLE COSTS**
- Feeder Cost @ $0.90 per lb  
  Interest @ 10%
- Feed Costs
  - Corn @ $2.60 per bushel  
  - Supplement & minerals @ $0.18 per lb  
  - Supplement & minerals @ $0.09 per lb  
  - Alfalfa - brome hay @ $70.00 per ton
  - Corn Silage @ $23.00 per ton
- Total Feed Costs
- Veterinary and health
- Machinery and equipment
- Marketing and miscellaneous
- Interest on feed & other costs @ 10%
- Labor @ $7.50 per hour

**TOTAL VARIABLE COSTS**

**INCOME OVER VARIABLE COSTS**

**FIXED COSTS**
- Machinery, equipment, housing

**TOTAL ALL COSTS**

**INCOME OVER ALL COSTS**

- Break-even selling price for variable costs
  - Break-even selling price for all costs

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**FINISHING STEER CALVES – One Head**

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