PART I. **Multiple Choice.** Indicate the best answer. (3 points each)

1. 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
   f. all are decision-making steps of management

2. What is the concept of least cost such as the least cost ration?
   a. At this point, either increasing or decreasing variable input use (ration mix) will increase ration cost.
   b. At this point, either increasing or decreasing output will decrease profit.
   c. You will add additional input and increase production as long as the added costs from increased production are greater than the added revenue.
   d. All of the above.

3. When a relationship between two products such as pork production and corn production exists where you can adjust your enterprise mix and increase the amount of one enterprise (pork) you produce, while not impacting the level of the second enterprise (corn) produced, these products are ____ products.
   a. supplementary
   b. complementary
   c. competitive

4. A production possibility curve shows:
   a. various combinations of outputs which can be produced from the same set of inputs
   b. the slope of the marginal value product curve
   c. all the levels of output of one product which can be produced from varying levels of one input
   d. various combinations of inputs that produce the same level of output

5. In the short run, to justify if you are going to harvest a crop which is standing in the field: (You may be minimizing losses and not maximizing profit.)
   a. you will only harvest if you can pay all crop production cost.
   b. you will harvest the crop if you can sell it for a profit.
   c. you will harvest the crop if you can pay all your variable costs, such as seed, fertilizer, etc.
   d. if you can cover your fixed costs, such as depreciation, harvest machine interest, etc.
   e. the corn price (market price) is greater than the total cost of corn production.
   f. none of the above is correct for making the harvesting decision.

6. Which of the following are sources of cost of production information for agricultural products:
   a. your past records
   b. agri-business firms
   c. University Extension Service
d. other producers
e. all of the above

7. Which of the following is a variable cost:
   a. fertilizer applied to the crop in the spring
   b. interest on facilities such as dairy barn
   c. insecticide applied in June
   d. land charge which is the cash rental rate in the area
   e. none of the above
   f. a and c above

8. Land is valued, in an enterprise budget, as the cash rent equivalent to reflect its ________.
   a. fixed cost
   b. variable cost
   c. debt payment
   d. opportunity cost

9. You are provided the following information:

<table>
<thead>
<tr>
<th>Units of Nitrogen</th>
<th>Marginal Value Product</th>
<th>Bushels of Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$40</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>$34</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>$24</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>$12</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Given this and that the price of corn is $2.00 per bushel, what is the number of bushels of corn produced with 3 units of nitrogen?
   a. 120 bushels
   b. 117 bushels
   c. 100 bushels
   d. 154 bushels
   e. 178 bushels
   f. none of the above
The following information is used for questions 10-14. It relates to the corn produced on Betty's Beef Farm. Betty has two types of land, Type I and Type II land. The cost of nitrogen is $0.22 per pound and the corn price is $2.25 per bushel.

<table>
<thead>
<tr>
<th>Unit of Nitrogen (50 lbs)</th>
<th>Bushels of Corn per Acre (Type I land)</th>
<th>Bushels of Corn per Acre (Type II land)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>90</td>
<td>140</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>145</td>
</tr>
<tr>
<td>2</td>
<td>112</td>
<td>149</td>
</tr>
<tr>
<td>3</td>
<td>126</td>
<td>152</td>
</tr>
<tr>
<td>4</td>
<td>135</td>
<td>154</td>
</tr>
<tr>
<td>5</td>
<td>141</td>
<td>155</td>
</tr>
<tr>
<td>6</td>
<td>143</td>
<td>154</td>
</tr>
</tbody>
</table>

10. If nitrogen costs 22 cents per pound and corn is priced at $2.25 per bushel, how many units of nitrogen should be applied per acre on Type II land to maximize profits:
   a. 0 units
   b. 1 unit
   c. 2 units
   d. 3 units
   e. 4 units
   f. 5 units
   g. 6 units

11. If the nitrogen cost was doubled and the corn price did not change the optimum level of nitrogen fertilizer to apply on Type I as well as Type II land would:
   a. increase by 25 percent
   b. not change
   c. decrease
   d. increase
   e. increase by 50 percent

12. The marginal input cost as you increase corn production by going from 3 to 4 units of nitrogen on Type I land is:
   a. $14.00
   b. $2.75
   c. $1.55
   d. $11.00
   e. none of the above

13. With Type I land, and given that nitrogen costs $.22 per pound, how high would the price of corn need to go to before you would apply 6 units of nitrogen fertilizer?
   a. at least $11.00 per bushel
   b. at least $3.95 per bushel
   c. at least $5.50 per bushel
   d. at least $4.48 per bushel
   e. at least $4.50 per bushel
   f. none of the above
14. You have 200 acres of corn (100 acres on Type I and 100 acres on Type II land) and 15,000 pounds of nitrogen (1 unit of nitrogen is 50 pounds). How would you apply the nitrogen to the 200 acres to maximize profits from the 200 acres of corn?
   a. 3 units (150 pounds) to 100 acres of Type II land because its yield is greater, 0 to 100 acres of Type I land
   b. 1.5 units (75 pounds) to each of the 200 acres
   c. 3 units (150 pounds) to 75 acres of Type I land, 2 units (100 pounds) to 37.5 acres of Type II land, 0 to 87.5 acres
   d. 4 units (200 pounds) to 75 acres of Type I land, 0 to 125 acres
   e. 3 units (150 pounds) to 100 acres of Type I land, 0 to 100 acres of Type II land
   f. none of the above is the best combination

15. Indicated below are data for feed consumption and weight of market hogs for Pete's Pork Palace.

<table>
<thead>
<tr>
<th>Production Level</th>
<th>Weight of Hog (pounds)</th>
<th>Feed Fed (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>260</td>
</tr>
<tr>
<td>2</td>
<td>125</td>
<td>430</td>
</tr>
<tr>
<td>3</td>
<td>175</td>
<td>620</td>
</tr>
<tr>
<td>4</td>
<td>225</td>
<td>830</td>
</tr>
<tr>
<td>5</td>
<td>275</td>
<td>1050</td>
</tr>
<tr>
<td>6</td>
<td>325</td>
<td>1300</td>
</tr>
</tbody>
</table>

15. Suppose the cost of the mixed hog fattening ration (feed) for Pete is $200 per ton (2,000 pounds per ton) and the expected market hog price is $46 per hundred weight (cwt). What is the profit maximizing level of production (assuming all other costs are constant, the hog price does not change as you go to heavier weights and you have the pig flow to go to heavier weights if that is the answer).
   a. Level 1 or 75 pounds
   b. Level 2 or 125 pounds
   c. Level 3 or 175 pounds
   d. Level 4 or 225 pounds
   e. Level 5 or 275 pounds
   f. Level 6 or 325 pounds

16. Budgets are most useful for which step in the decision making process?
   a. setting goals
   b. identifying alternatives
   c. analyzing information
   d. evaluating results after implementing a decision

17. Which of the following is not a step in partial budgeting?
   a. estimating increased costs
   b. estimating decreased revenues
   c. estimating market price changes
   d. writing out a physical description
The following table applies to the following two questions. The information represents different hay and grain rations that will produce 150 pounds of beef at Betty's Beef Brigade. The grain price is $.08 per pound and the hay price is $.04 per pound.

<table>
<thead>
<tr>
<th>Ration</th>
<th>Pounds of Hay</th>
<th>Pounds of Grain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,050</td>
<td>250</td>
</tr>
<tr>
<td>2</td>
<td>750</td>
<td>350</td>
</tr>
<tr>
<td>3</td>
<td>510</td>
<td>450</td>
</tr>
<tr>
<td>4</td>
<td>300</td>
<td>550</td>
</tr>
<tr>
<td>5</td>
<td>150</td>
<td>650</td>
</tr>
</tbody>
</table>

18. Given that each ration will produce 150 pounds of beef for Betty, what ration should Betty use if the cost of hay is $.04/lb. and the cost of grain is $.08/lb. ?
   a. ration 1  
   b. ration 2  
   c. ration 3  
   d. ration 4  
   e. ration 5

19. If the grain price increased by $.08 per pound or to $.16 and the hay price increased by $.04 or to $.08 Betty would:
   a. increase her amount of hay fed because it increased by $.04 as compared to the $.08 change in grain.  
   b. increase her amount of grain fed because it is a less price bulking product for the money. 
   c. not change the ration  
   d. increase the amount of beef produced

20. Some resources used in farming are valued at their "opportunity cost." This is the amount that:
   a. you pay to buy the resource initially (purchase cost)  
   b. is added to net profit as a result of using the resource  
   c. the resource could earn if it were used elsewhere either within or outside the farm business  
   d. it cost you to produce the corn you are feeding  
   e. c and d above

21. On the corn silage budget, which is attached, the break even price for silage with 16 ton yield would be:
   a. $12.79/T  
   b. $21.31/T  
   c. $12.04/T  
   d. $24.83/T  
   e. none of the above

22. On the corn silage budgets, which are attached, the land charge _______ as the yields increase.
   a. increases  
   b. decreases  
   c. stays the same
23. Which of the following items are included in the enterprise budgets?
   a. income
   b. expenses
   c. profits
   d. value added
   e. all of the above

24. The partial budget represents an outline or summary of the resources available and volume of production to be carried out.
   a. true
   b. false

25. Which of the following is not a resource category for whole farm planning?
   a. buildings
   b. labor
   c. machinery
   d. sensitivity analysis
   e. capital

PART II. Short Problems, Matching, etc.

1. (6 pts) You have been given information on the added returns from using different amounts of capital for three livestock enterprises; pork, poultry, and dairy. Since you have limited capital, allocate so the capital is used where it will make you the most profit (equimarginal returns).

<table>
<thead>
<tr>
<th>No. of Units</th>
<th>Pork</th>
<th>Poultry</th>
<th>Dairy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,100</td>
<td>$1,000</td>
<td>$1,300</td>
</tr>
<tr>
<td>2</td>
<td>1,000</td>
<td>1,100</td>
<td>1,250</td>
</tr>
<tr>
<td>3</td>
<td>980</td>
<td>1200</td>
<td>1,000</td>
</tr>
<tr>
<td>4</td>
<td>920</td>
<td>900</td>
<td>920</td>
</tr>
<tr>
<td>5</td>
<td>850</td>
<td>950</td>
<td>850</td>
</tr>
</tbody>
</table>

   a. If you had a total of $2,400 to use in increments of $1,200 amounts, how many units would you invest in each enterprise?
      units ________ units ________ units ________

   b. If you had unlimited capital, how many units would you invest in each enterprise?
      units ________ units ________ units ________
2. (6 pts) Listed below are several cost items which would be included in a budget. Indicate if they would be a variable cost (VC) or fixed cost (FC) item.

- ______ Feed fed to livestock - home raised
- ______ Depreciation
- ______ Fuel expense
- ______ Fertilizer expense
- ______ Interest on livestock building loan
- ______ Hired labor on family farm - 12 month agreement for a monthly salary

3. (3 pts) You have created two enterprise budgets for the same acre of land. The enterprises are for continuous corn and corn after soybeans. The budgets are attached. From the budgets list three advantages to rotations.

a. 

b. 

c. 

4. (8 pts) Consider the following information:

<table>
<thead>
<tr>
<th></th>
<th>Sweet Corn</th>
<th>No. 2 Yellow Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price/dozen</td>
<td>$1.90</td>
<td>NA</td>
</tr>
<tr>
<td>Price/bu</td>
<td>NA</td>
<td>$2.50</td>
</tr>
<tr>
<td>Variable costs</td>
<td>$700</td>
<td>$189</td>
</tr>
<tr>
<td>Yield; dozens/Ac</td>
<td>1,100</td>
<td>NA</td>
</tr>
<tr>
<td>Yield; bushels/Ac</td>
<td>NA</td>
<td>145</td>
</tr>
</tbody>
</table>

a. Which crop has the highest gross revenue? ___________________

b. Which crop has the highest gross margin? ___________________

Assume you currently are producing number 2 corn. If you constructed a partial budget using the information above to compare with sweet corn:

c. What are the added revenues? ___________________

d. What are the decreased costs assuming no change in fixed costs? ___________________

PART IV. Bonus (2 pts)

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

_________________________________________________________________

_________________________________________________________________