Part I: Multiple Choice. Circle the best answer. (3 points each)

1. Methods for acquiring machinery would include:
   a. purchase or buy
   b. lease
   c. joint ownership
   d. custom hire
   c. all of the above are methods

2. Reasons why you would replace machinery would include:
   a. it is too small.
   b. it is worn out and not dependable.
   c. it is obsolete.
   d. costs such as repairs for the present machine are increasing.
   c. all the above are reasons.

3. A partial budget is used primarily:
   a. as a building block for building a whole farm budget.
   b. to evaluate small changes to an existing enterprise or farm operation.
   c. as input for constructing a partial budget.
   d. none of the above.

4. In an enterprise budget, “gross margin”:
   a. measures income above variable production costs.
   b. measures expected output price times expected yield.
   c. excludes all forms of ownership costs.
   d. a and c.

5. In an enterprise budget, it is important to:
   a. use average or expected long-run values for market prices and farm yields.
   b. use the previous year’s market prices and farm yields.
   c. use a or b above, depending on which yields a higher gross margin.

6. Attached is an example budget for soybean production. If you use the budget for 45 bushels per acre and a soybean price of $6.50 per bushel, what is the profit per acre?
   a. $54.69
   b. $189.78
   c. $21.11
   d. $123.83
   e. none of the above

7. Given the attached soybean budget, what is the total cost of producing a bushel of soybeans?
   a. $3.75/bushel
   b. $6.03/bushel
   c. $6.78/bushel
   d. $5.75/bushel
   e. none of the above
For the next two questions use the following information.
A farmer's cost of production is 290 dollars per acre plus 0.15 cents per bushel.

8. If market price is $1.50 per bushel, what is the farmer's break-even yield?
   a. 210.10  
   b. 250.65  
   c. 214.81  
   d. 205.24

9. If yield is 150 bushels per acre, what is the farmer's break-even price?
   a. 2.08  
   b. 2.11  
   c. 3.20  
   d. 2.18

10. In class, we examined a study of organic and conventional corn/soybean rotations that revealed:
    a. a substantial “investment” period for organic production.
    b. mostly similar unpaid labor costs between the two rotations.
    c. considerably higher market prices for organic production.
    d. none of the above.

11. In whole farm planning, only the gross margins of each farm enterprise are compared because:
    a. fixed costs are spread across the entire farm.
    b. the planning horizon is short run (assuming continued use of land and capital assets).
    c. a and b.
    d. none of the above.

12. Planning with a whole farm budget is analogous to:
    a. choosing a revenue-maximizing combination of outputs.
    b. choosing a cost-minimizing combination of inputs.
    c. choosing a cost-minimizing combination of outputs.
    d. none of the above.

13. 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. estimating decreased costs
    e. estimating increased revenues

14. Budgets are a common tool used in analyzing farm alternatives or decisions. Examples of budgets could include:
    a. an enterprise budget.
    b. a whole farm budget.
    c. a partial budget.
    d. a cash flow budget.
    e. all of the above.
The next six questions are based on the following information.
You are looking into purchasing a tractor for your farm business. You have pulled together the following information and want to calculate costs.

<table>
<thead>
<tr>
<th>Information</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate</td>
<td>10%</td>
</tr>
<tr>
<td>Purchase price</td>
<td>$70,000</td>
</tr>
<tr>
<td>Salvage value</td>
<td>$30,000</td>
</tr>
<tr>
<td>Years of useful life</td>
<td>10 years</td>
</tr>
<tr>
<td>Taxes</td>
<td>1% of new cost</td>
</tr>
<tr>
<td>Labor cost</td>
<td>$9/ hour</td>
</tr>
<tr>
<td>Labor amount (use)</td>
<td>700 hours</td>
</tr>
<tr>
<td>Fuel cost</td>
<td>$1.20/gallon</td>
</tr>
<tr>
<td>Fuel use (gallon/hour)</td>
<td>.044 x PTO horsepower</td>
</tr>
<tr>
<td>PTO horsepower</td>
<td>100</td>
</tr>
<tr>
<td>Repairs</td>
<td>3% of new cost</td>
</tr>
<tr>
<td>Number of acres</td>
<td>400 acres</td>
</tr>
</tbody>
</table>

15. In a budget for tractor ownership what is the annual depreciation?
   a. $10,000
   b. $7,000
   c. $5,000
   d. $3,000
   e. none of the above

16. In a budget for tractor ownership what is the annual interest?
   a. $2,000
   b. $4,000
   c. $3,500
   d. $10,000
   e. none of the above

17. What is the level of fuel cost per acre? (As indicated, you will use the tractor on 400 acres.)
   a. $5.28
   b. $7.70
   c. $3.02
   d. $9.24
   e. none of the above

18. In a budget for tractor ownership, what is the annual level of taxes?
   a. $7,000
   b. $400
   c. $700
   d. $300
   e. none of the above

19. In a budget for tractor operating cost, what is the labor cost per acre?
   a. $9.00
   b. $15.75
   c. $5.14
   d. $18.00
   e. none of the above

20. In a budget for tractor operating cost, what is the annual repair cost?
   a. $2,100
   b. $1,200
   c. $3,000
   d. can't calculate with the information provided
   e. none of the above
21. If your rate of return on assets is greater than the interest rate, the rate of return on your equity is:
   a. greater than the interest rate
   b. less than the rate of return on assets
   c. negative
   d. equal to the interest rate
   e. none of the above

22. As we discussed in class, financial institutions such as commercial banks like to see a current ratio (current liabilities ÷ current assets) in the area of: __ or better.
   a. 2.0
   b. 1.0
   c. .95
   d. .5
   e. none of the above

23. A ratio which shows the relationship between a business’ total assets and total liabilities is referred to as:
   a. bankruptcy
   b. solvency
   c. net worth
   d. liquidity
   e. none of the above

The following information is used for the next two questions.
You have the option of purchasing a self-propelled combine or having your neighbors, Joyce and her daughter Heather, custom harvest your crop. They will custom harvest the crop for $30.00 per acre. The purchase cost of the combine is $100,000. Given this, you calculate the annual fixed ownership cost to be $16,000 per year. The operating cost per acre if you harvest the crop yourself is $8.00 per acre.

24. Given this, how many acres are needed before you can justify ownership? (Don't consider any factors such as potential yield differences, etc.)
   a. At least 727.27 acres
   b. At least 533.33 acres
   c. At least 2,000 acres
   d. At least 421.05 acres
   e. none of the above

25. With further calculation, you conclude that if you have Joyce and Heather custom combine your corn crop they will have a combine with more current harvesting technology. Your analysis indicates they will harvest two more bushels per acre if they harvest the crop. You project that the corn price will be $2.00 per bushel. Given this, what is the new break even number of acres?
   a. at least 615.38 acres
   b. at least 470.59 acres
   c. at least 888.88 acres
   d. at least 1205.96 acres
   e. none of the above
The following seven questions are based on the attached FarmSim information for Clone Acres.

26. What was the average soybean yield per acre for Clone Acres for Year 4?
   a. 37 bushels
   b. 36 bushels
   c. 42 bushels
   d. 48 bushels
   e. none of the above

27. What is the number of pigs in closing inventory for Clone Acres for Year 4?
   a. 411
   b. 470
   c. 438
   d. 1,232
   e. none of the above

28. What is the end-of-year farm net worth (market value) for Clone Acres for Year 4?
   a. $849,776
   b. $544,812
   c. $304,964
   d. $544,812
   e. none of the above

29. What is the current debt/asset ratio for Clone Acres for Year 4?
   a. .500
   b. $53,435
   c. .36
   d. .654
   e. none of the above

30. What is the level of state and federal income and self-employment tax that Clone Acres will be paying for Year 5?
   a. $6,722
   b. $26,655
   c. $24,519
   d. $4,231
   e. none of the above

31. What is the rate of return on equity for Clone Acres for Year 4? Assume that the value of unpaid labor and management is $28,000.
   a. 4.70%
   b. 7.71%
   c. 13.18%
   d. 15.02%
   e. none of the above
32. Given that net farm income (from operations) was $67,490, what was the rate of return on assets for Clone Acres in year 4? Assume that the average assets for Year 4 is $840,000 and the value of unpaid labor and management is $28,000.
   
a. 8.03%
   b. 4.70%
   c. 9.16%
   d. 12.49%
   e. none of the above

33. During Spring Break, which is a bit more than a week,
   
a. you are going to get some time to get yourself fully charged and come back ready to go to finish off the semester full of energy.
   b. you are going to do some fun things.
   c. you are going to do some thing that you enjoy.
   d. Hint: You are going to do all of the above is the best answer.
   e. you are going to all the above.

Part II. **Bonus (2 pts.)**

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