

Contestant Number: _____

Score: _____

Chapter: _____

**Utah Farm Business Management CDE
Individual Event
2013**

MULTIPLE CHOICE SECTION. (100 points)

Circle the correct answer and place the letter of the correct answer on the answer sheet provided.

1. Production functions show:
 - a. the profit maximization point
 - b. revenue and expenses
 - c. the cost of the next best alternative
 - d. the relationship between inputs and outputs

2. Which of the following is *not* an advantage of a sole proprietorship?
 - a. farmer directly receives all rewards of good management and labor
 - b. easily formed
 - c. relatively few government regulations and restrictions
 - d. owner has limited liability for the business

3. Diversification in the production of crops and/or livestock generally tends to:
 - a. increased returns and decreased risks
 - b. decreased returns and decreased risks
 - c. increased returns and increased risks
 - d. increased returns and decreased risks

4. If George wanted to explore whether he should add a crop enterprise to the dairy farm, he should complete a:
 - a. whole farm budget
 - b. enterprise budget
 - c. partial budget
 - d. family living budget

5. Which of the following could reduce production risk?
 - a. genetically modified crops
 - b. crop insurance
 - c. crop diversification
 - d. all of the above

6. If hamburgers and hot dogs are substitute goods, an increase in the price of hamburgers will cause:
 - a. the demand for hot dogs to increase and the equilibrium price to decrease
 - b. the demand for hot dogs to decrease and the equilibrium price to decrease
 - c. the demand for hot dogs to decrease and the equilibrium price to increase
 - d. the demand for hot dogs to increase and the equilibrium price to increase

7. Monopolistic competition markets and monopoly markets are both characterized by:
 - a. homogenous products
 - b. high barriers to entry
 - c. price-searchers
 - d. many sellers

8. If Jack and Jill wanted to maximize profits they should:
 - a. produce where marginal revenue is equal to marginal cost
 - b. produce where total revenue is greater than total cost
 - c. produce where costs are minimized
 - d. produce at the maximum production point

9. Who is the current U.S. Secretary of Agriculture?
 - a. Kathleen Merrigan
 - b. Ed Schafer
 - c. Tom Vilsack
 - d. John Kerry

10. Which of the following is a disadvantage of a corporation?
 - a. owners have unlimited liability
 - b. no regulations for start-up
 - c. double taxation
 - d. a and c

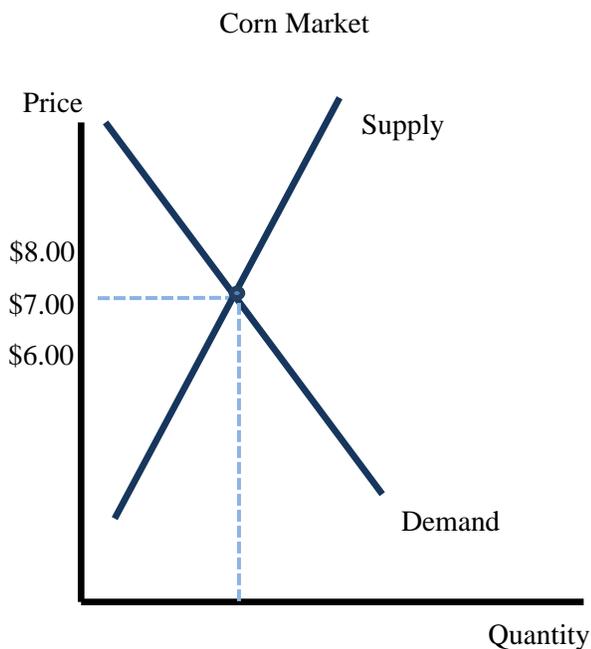
11. Which of the following would be included on an accrual income statement but not on a cash income statement?
 - a. fertilizer expenses
 - b. cash paid interest on operating loans
 - c. receipts for livestock sales
 - d. depreciation on machinery

12. A mission statement is:
 - a. a list of objectives that must be accomplished to reach a goal
 - b. will never be useful for agricultural producers
 - c. a clear and concise statement describing the company's purpose
 - d. a list of tasks to be accomplished on a daily basis

13. Which of the following is a way to manage human risk:
 - a. create an employee handbook
 - b. properly train employees
 - c. clearly establish the roles of each member of the farm operation
 - d. all of the above

14. Because Jack can produce milk at a lower opportunity cost than his neighbor Bob, Jack:
 - a. will always make a larger profit
 - b. has the comparative advantage
 - c. will never have a net loss on operations
 - d. must be smarter

Use the following graph to answer questions 15-17.



15. What is the equilibrium price for corn?
- \$8.00
 - \$5.00
 - \$6.00
 - \$7.00
16. The supply of corn is:
- relatively elastic
 - downward sloping
 - upward sloping
 - both a and c
17. Which of the following will occur at a market price of \$6.00?
- a surplus
 - equilibrium conditions
 - a shortage
 - more supply than demand
18. The Hill's sell their milk to a local cheese processing plant. The milk price often varies from month to month and the Hills are looking into some options to try and better manage their price risk in the future. They want to be able to benefit if prices increase, but don't want to be hurt if milk prices fall. Which of the following alternatives should they investigate?
- storage until the cash market price increases
 - put options
 - futures contracts
 - none of the above

19. SMART goals are:
 - a. Standard, Measurable, Attainable, Rigorous, and Trite
 - b. Specific, Moneymaking, Awesome, Related, and Tractable
 - c. Specific, Measurable, Attainable, Related, and Tractable
 - d. Specific, Moneymaking, Attainable, Rigorous, and Trite

20. For the Hill Family Farm, dairy feed is considered:
 - a. a fixed cost
 - b. an expense on the accrual income statement
 - c. a current liability
 - d. none of the above

21. If Jack wants to avoid paying any taxes he should:
 - a. not make any money
 - b. not file taxes
 - c. lie to the IRS about his contact information
 - d. move to Bermuda in the winter

22. Which type of costs change with the level of production?
 - a. variable costs
 - b. average variable costs
 - c. total cost of production
 - d. all of the above

23. Principle payments on debt would be included directly on which financial statements?
 - a. balance Sheet
 - b. accrual Income Statement
 - c. statement of Cash Flows
 - d. none of the above

24. The difference between the local cash market price and the futures price is called:
 - a. profit margin
 - b. basis
 - c. premium
 - d. distance factor

25. Which type of market is characterized by many sellers, price-takers, and homogenous products?
 - a. perfect competition markets
 - b. monopolistic competition markets
 - c. oligopoly markets
 - d. monopoly markets

MATCHING. (30 Points)

Match the terms on the right with the correct definitions and statements on the left. Write your answers in the blanks provided and on the answer sheet provided.

Hint: Each answer will be used once.

26. _____	Measures the relationship between farm liabilities and farm assets and is a measure of solvency.	a. Balance Sheet
27. _____	Assets that will not be used or converted to cash within a year.	b. Income Statement
28. _____	Liabilities such as land mortgages or equipment loans.	c. Statement of Owner Equity
29. _____	Shows the profit or loss of a business over a period of time.	d. Statement of Cash Flows
30. _____	Shows a business' inflows and outflows of cash over a period of time.	e. Current Ratio
31. _____	Measures how efficiently farm operating expenses are used to create revenue and is a measure of financial efficiency.	f. Debt/Asset Ratio
32. _____	Would be considered an accrual adjustment on the accrual income statement.	g. Return on Assets
33. _____	Measures the amount of borrowed capital relative to capital invested by owners. Shows the ability of the owners to pay all liabilities if all assets were sold.	h. Operating Expense Ratio
34. _____	Shows the assets, liabilities, and owner's equity of a business at a point in time.	i. Current Asset
35. _____	Measures the relationship between current assets and current liabilities and is a measure of liquidity.	j. Fixed Asset
36. _____	Liabilities that will be repaid within a year.	k. Current Liability
37. _____	Measures the rate of return on farm assets and is a measure of profitability.	l. Long-Term Liability
38. _____	Shows the beginning and ending net worth of a business over a period of time, including the source of changes in owner's equity.	m. Depreciation
39. _____	Assets such as banking accounts, feed, or market livestock.	n. Solvency
40. _____	Measures the business' ability to meet all the ongoing financial obligations of the operation.	o. Liquidity

PROBLEM SECTION. (170 points)

Use the *Resource Information for the Hill Family Farm* provided and the additional information given in this section to answer the questions. Please read all questions carefully and answer them completely. Round all numerical answers to two decimal places.

1. George is trying to convince his dad to rent some ground to grow corn silage or alfalfa hay as feed for his dairy cows. Using the budgets provided in the *Resource Information*, answer the following questions:

- a. Which crop would yield a higher net return? (5 points) Corn Silage
- b. If they wanted to grow enough corn silage to feed 45 dairy cows, how many acres would he need to plant in corn silage? (10 points) $(4.1*45)/26 = 7.10$ acres
- c. If they wanted to grow enough alfalfa hay to feed 45 dairy cows, how many acres would he need to plant in alfalfa hay? (10 points) $(2.7*45)/5.5 = 22.09$ acres
- d. What considerations should the Hills take into account before making a decision about adding a crop enterprise? (15 points)

Answers vary:

Costs of production vs. costs to purchase feed (partial budget)

Cost and availability of land: rent or buy

Risks associated with crop production

Necessary machinery or custom hire

e. List one advantage and one disadvantage for each of the three scenarios? (30 points)

Answers vary:

	<u>Advantage</u>	<u>Disadvantage</u>
Add a corn silage enterprise:	*Reduces input price risk for corn silage. *Rent fewer acres relative to hay. *Better control and knowledge of feed quality.	*Increases production risk.
Add an alfalfa hay enterprise:	*Reduces input price risk for corn silage. *Better control and knowledge of feed quality.	*Increases production risk. *Requires more land than corn silage.
Do not add a crop enterprise:	* Do not add any additional risks of production	* Retain input price risk. * May have difficulty acquiring feed

2. In George's expansion plans he would consider purchasing a robotic milker for \$200,000. If purchased at the beginning of 2013, George estimates that, relative to the projected 2013 values, the robotic milker would increase production by 5 lbs per cow (or \$4,140 in revenue), reduce total labor hours by 25%, and increase repairs by 10%. Use this information and the **Robotic Milker Loan and Depreciation Schedules** in the *Resource Information for the Hill Family Farm* to answer the following questions:

- a. Assume the Hills purchased the milker January 1, 2013 using Loan Option 1. Use the template provided to adjust the projected income statement for 2013. Note: Do not forget to include the loan interest expense and milker depreciation expense on the income statement adjustment. (32 points)
- b. Use the template provided to adjust the projected balance sheet for December 2013. Hint: You will have to adjust the Ag Bank Checking balance based on the change in net cash income from the adjusted income statement created in part a **and** the loan principle payment for 2013 which does not affect the income statement, but does affect the cash balance. (32 points)
- c. How would purchasing the robotic milker affect the Hill Family Farm liquidity and solvency? (16 points)

Answers vary:

Current assets would decrease and current liabilities would increase. The current ratio would significantly drop from 8.18 to 3.33 and working capital would change from \$63,133.07 to \$44,240.91. Thus, liquidity would decrease, but still be considered favorable.

Total assets would increase and total liabilities would increase. The debt/asset ratio would change from .21 to .56, the debt/equity ratio would change from .26 to 1.29, and the equity/asset ratio would change from .79 to .44. Thus, the solvency position would worsen as each of the ratios crosses the threshold into an unfavorable position.

- d. Would you recommend purchasing the robotic milker? **Why or why not?** (20 points)

Answers vary and scores are based on justification:

No, I would not recommend they purchase the robotic milker. The purchase would worsen the business' liquidity and solvency positions. Also, based on the loan schedule, the purchase would likely create a cash flow problem in the future unless other changes were made (the increase in cash income does not exceed the necessary principle payment each year). I would recommend considering purchasing the milker in the future after expanding, but it is not worth it for only 45 cows.

a. Projected Income Statement

	<u>2012</u>	<u>2013</u>	
<i>(Projected)</i>			
REVENUE			
Cash Sales			
Milk Sales	\$157,813.12	\$181,679.76	<i>5 points</i>
Sale of Calves	\$3,983.58	\$4,481.53	
Sale of Cull Cows	\$3,427.62	\$3,856.07	
Total Income (cash basis)	\$165,224.32	\$190,017.36	<i>1 point</i>
Accrual Adjustments			
Change in Accounts Receivable	-\$2,548.26	-\$5,055.00	
Change in Crop Inventory	\$4,300.00	-\$1,900.00	
Total Income (accrual basis)	\$166,976.06	\$183,062.36	<i>1 point</i>
EXPENSES			
Cash Expenses			
Feed	\$70,237.01	\$79,016.63	
Breeding	\$1,767.20	\$1,988.10	
Veterinary and Medicine	\$3,130.80	\$3,522.15	
Supplies	\$4,741.20	\$5,333.85	
Fuel and Oil	\$1,532.80	\$1,724.40	
Repairs	\$3,938.40	\$4,873.77	<i>5 points</i>
Custom Hire	\$388.00	\$436.50	
Milk Hauling	\$5,122.40	\$5,762.70	
Marketing	\$5,454.40	\$6,136.20	
Bedding	\$522.40	\$587.70	
Replacement Cost	\$14,001.44	\$15,751.62	
Hired Labor	\$10,010.40	\$5,630.85	<i>5 points</i>
Utilities	\$1,723.20	\$1,938.60	
Record Keeping	\$560.00	\$630.00	
Dues and Fees	\$600.00	\$675.00	
Operating Interest	\$491.20	\$552.60	
Misc.	\$255.60	\$287.55	
Property Taxes	\$160.00	\$180.00	
Insurance	\$240.00	\$270.00	
Interest on Machinery	\$2,639.02	\$10,755.57	<i>5 points</i>
Total Expenses (cash basis)	\$127,515.47	\$146,053.79	<i>1 point</i>
Accrual Adjustments			
Depreciation	\$9,832.00	\$20,498.67	<i>5 points</i>
Change in Accounts Payable	\$1,275.46	-\$4,113.35	
Change in Accrued Interest Payable	-\$195.12	-\$205.11	
Total Expenses (accrual basis)	\$138,427.81	\$162,234.00	<i>1 point</i>
Net Farm Income (cash basis)	\$37,708.85	\$43,963.57	<i>1 point</i>
Net Farm Income (accrual basis)	\$28,548.25	\$20,828.36	<i>1 point</i>

31 points

b. Projected Balance Sheet

<u>ASSETS</u>	<u>December 31, 2012</u>	<u>December 31, 2013</u> <i>(Projected)</i>	
<u>Current Assets</u>			
AG Bank Checking	\$16,847.47	\$16,059.05	5 points
Accounts Receivable	\$8,600.00	\$3,545.00	
Crops and Feed	\$45,500.00	\$43,600.00	
Total Current Assets	\$70,947.47	\$63,204.05	1 point
<u>Non-Current Assets</u>			
Dairy Livestock	\$48,000.00	\$54,000.00	
Machinery and Equipment	\$104,000.00	\$304,000.00	5 points
Buildings	\$178,500.00	\$178,500.00	
Accumulated Depreciaton	-\$149,736.00	-\$170,234.67	5 points
Total Non-Current Assets	\$180,764.00	\$366,265.33	1 point
Total Farm Assets	\$251,711.47	\$429,469.38	1 point
 <u>LIABILITIES</u>			
<u>Current Liabilities</u>			
Accrued Interest	\$2,443.90	\$2,238.79	
Accounts Payable	\$6,458.35	\$2,345.00	
Machinery Loan Due in 12 Mo.	\$4,008.98	\$14,379.35	5 points
Total Current Liabilities	\$12,911.23	\$18,963.14	1 point
<u>Non-Current Liabilities</u>			
Machinery Loan Due after 12 Mo.	\$46,689.84	\$222,567.48	5 points
Total Non-Current Liabilities	\$46,689.84	\$222,567.48	1 point
Total Farm Liabilities	\$59,601.07	\$241,530.62	1 point
Net Worth (Equity)	\$192,110.40	\$187,938.76	1 point

32 points

ANSWER SHEET:

Score: _____/130

1. D

2. D

3. B

4. C

5. D

6. D

7. C

8. A

9. C

10. C

11. D

12. C

13. D

14. B

15. D

16. C

17. C

18. B

19. C

20. B

21. A

22. D

23. C

24. B

25. A

26. F

27. J

28. L

29. B

30. D

31. H

32. M

33. N

34. A

35. E

36. K

37. G

38. C

39. I

40. O

_____ /30

_____ /100

**Utah Farm Business Management CDE
Team Section
2013**

Use the templates and space provided on the subsequent pages to answer the following questions. Please read each question carefully and answer them completely. (200 points)

1. George wants to take over his dad's hobby farm, expand it, and perpetuate it as a stable source for additional family income for his family and continued financial support for his aging parents. His dad is somewhat reluctant to get on board with his son's expansion ideas, but he also doesn't want the farm to disappear. He is willing to consider George's ideas if George can give him a better understanding of what he wants the farm to become and how he plans to achieve his vision. Imagine you are in George's position. Using the reference material and your own creativity, complete the worksheets to create the following for George's future farm:
 - a. Mission Statement (40 points)
 - b. 3 Strategic Goals relating to the Mission Statement (36 points)
 - c. 3 Tactical Objectives for one of the Strategic Goals (36 points)
 - d. 3 Operational Plans for one of the Tactical Objectives (36 points)

Answers vary.

2. George's plan to continue his dad's farm has some inherent risks characteristic of the agricultural industry. A comprehensive plan for the future should include plans to manage those risks. Using the sheet provided, *explain* one specific way George could manage each of the five types of risk. (52 points)

Answers vary.