2015 Kentucky FFA Convention
Farm Business Management Career Development Event

Answer Sheet

Name: ______________________________

School: ______________________________

E-mail: ______________________________

Grade Level: ______________________________

Part I: Multiple Choice	
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Part II: Problem Solving	
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Part I:	
Part II:	
Total	

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The exam is worth 300 points.
Part I consists of 30 multiple choice problems worth 150 points total.
Part II consist of 30 short-answer problem solving question worth a total of 150 points.

Tie Breakers:

1. Total score on part II
2. If needed, in the following order, Part II questions 1 through 13 until tie is broken
3. If needed, in the following order, Part I questions 22 through 30 until tie is broken

Do not write on the question sheets. Put all answers in the answer table. Turn in both the question sheets and answer table.

Part I: Multiple-Choice (5 points each)
Choose the single best alternative that answers the question or completes the statement.

1. A farm firm that seeks to maximize profit will increase output so long as:
- **A.** marginal revenue is greater than marginal cost.
- **B.** its marginal revenue is positive.
- **C.** its marginal revenue is increasing.
- **D.** marginal revenue is positive, but decreasing.
- **E.** All of the above.
- **F.** None of the above.

2. Opportunity cost always arises when a trade-off is made.
- **A.** True
- **B.** False

3. A firm's optimal input proportions may change if
- **A.** input prices change.
- **B.** the relative marginal productivities of the inputs change.
- **C.** the firm's optimal output level changes.
- **D.** All of the above are correct.

4. Although specialization of labor increases efficiency of production, it can lead to another major problem:
- **A.** the need to exchange goods among producers.
- **B.** the need to remain fully employed.
- **C.** the depletion of natural resources.
- **D.** assuring that exchange leads to mutual gains.
- **E.** All of the above are correct.

5. If the demand curve for cranberries shifts to the right and the supply curve for cranberries remains stable, the price of cranberries will decrease.
- **A.** True
- **B.** False

6. Which of the following goods is most likely to have an elastic demand?
- **A.** Organic strawberries
- **B.** Gasoline
- **C.** Cigarettes
- **D.** Salt

7. If the price of organic sweet corn increases by 3% and the output of organic sweet corn increases by 3.5% then
- **A.** the supply of organic sweet corn is inelastic
- **B.** the supply of organic sweet corn is unit elastic
- **C.** the supply of organic sweet corn is elastic
- **D.** the demand for organic sweet corn is elastic
- **E.** the demand for organic sweet corn is unit elastic

8. Which of the following statements best describes a situation of complement goods?
- **A.** When the price of hotdogs increases consumers tend to buy more hotdog buns.
- **B.** When the price of hotdogs increases consumers tend to buy fewer hotdog buns.
- **C.** When the price of hotdogs decreases consumers tend to buy fewer hotdog buns.
- **D.** None of the above.

9. The price of coffee rose 50 percent and coffee sales fell 25 percent. Doughnut sales also fell 25 percent. From this information we can conclude that
   - **A.** demand for coffee is inelastic.
   - **B.** coffee and doughnuts are complements.
   - **C.** the cross elasticity of demand is minus 0.5 percent.
   - **D.** All of the above are correct.

10. Generally Accepted Accounting Principles (GAAP) requires the cash system of accounting.
    - **A.** True
    - **B.** False

11. Consider a hog sales value of $45,000; on which statement(s) would this be recorded and where on that (those) statement(s)?
    - **A.** income statement as income
    - **B.** statement of cash flows as cash receipt
    - **C.** balance sheet as an asset
    - **D.** income statement as income and statement of cash flows as cash receipt
    - **E.** income statement as income, statement of cash flows as cash receipt, and balance sheet as an asset

12. Net worth is equal to total assets minus total liabilities.
    - **A.** True
    - **B.** False

13. Which of the following items would not be included in a partial budget evaluating the decision to add a new crop to the current cropping plan?
    - **A.** sales of the new crop
    - **B.** sales of the replaced crop
    - **C.** seed and fertilizer costs for the new crop
    - **D.** labor costs which do not change
    - **E.** all of the above would be included

14. In a whole farm budget, which of the following values from the enterprise budgets is <u>not</u> multiplied by the number of units of each enterprise to be carried out?
    - **A.** variable costs
    - **B.** fixed costs
    - **C.** gross revenue
    - **D.** gross margin

15. If returns above variable costs are positive for a producer's enterprise budget for a commodity, that product would generally not be produced on that farm.
    - **A.** True
    - **B.** False

16. What is the best way to develop enterprise budgets?
    - **A.** By taking a budget published in a magazine
    - **B.** By economic engineering
    - **C.** By guessing
    - **D.** From whole farm records
    - **E.** A and B
    - **F.** B and D

17. Which of the following statements is most applicable to managerial accounting?
    - **A.** Managerial accounting reports to those outside the organization, such as tax authorities and regulators.
    - **B.** Managerial accounting must follow Generally Accepted Accounting Principles (GAAP).
    - **C.** Managerial accounting reports to those inside the organization for planning, directing and motivating, controlling and performance evaluations.
    - **D.** Managerial accounting emphasized summaries of financial consequences of past activities.

18. The cooperative agricultural business normally has
    - **A.** large profits
    - **B.** a large return for the initial capital invested
    - **C.** patronage dividends to distribute any profit
    - **D.** stockholder voting based upon the number of shares

19. The sole proprietorship is the most common form of legal business organization among U.S. farms.
- **A.** True
- **B.** False

20. Relative to maintaining a sole proprietorship form of business organization for a farm, incorporating the family farm may bring which of the following benefit?
- **A.** total tax liability may be lower
- **B.** transfer of farm ownership can be made easier
- **C.** cost of fringe benefits may be deductible
- **D.** reduced personal liability
- **E.** All of the above may be benefits of incorporating the family farm

21. Which of the following farm bills is considered to be the "fundamental" or "permanent legislation" without expiration date?
- **A.** The Agricultural Adjustment Act of 1933
- **B.** The Agricultural Adjustment Act of 1938
- **C.** The Agricultural Act of 1949
- **D.** The Food and Agricultural Act of 1965
- **E.** The Agricultural Act of 1970
- **F.** The Agricultural Improvement Act of 1996

<u>Use the following information for questions 22 and 23</u>
Assume that you are growing potatoes which are sold on the wholesale market at $6.50 per cwt. You are experimenting with various applications of nitrogen. The results of your experiment are listed in Table 6.1.9.

Table 6.1.9

Nitrogen Application (lb. N/acre)	Potato Yield (cwt/acre)
172.00	375.00
173.00	378.00
175.00	384.50
178.00	391.19
181.00	395.00
184.00	397.50
187.00	398.87
200.00	400.00
203.00	400.20
206.00	400.20
209.00	398.50
212.00	395.00

22. Refer to table 6.1.9, which of the following would be the rational range of nitrogen application?
- **A.** 175 to 203 lbs/acre
- **B.** 175 to 206 lbs/acre
- **C.** 178 to 203 lbs/acre
- **D.** 178 to 206 lbs/acre
- **E.** 181 to 203 lbs/acre
- **F.** 181 to 206 lbs/acre

23. Refer to table 6.1.9, if the cost of applying the nitrogen fertilizer is $0.56 per pound, what is the economically optimal amount of fertilizer to apply?
- **A.** 178 lbs/acre
- **B.** 171 lbs/acre
- **C.** 184 lbs/acre
- **D.** 187 lbs/acre
- **E.** 200 lbs/acre
- **F.** 203 lbs/acre

24. John Ross Ewing, Jr. owns a farm in west Texas. Assume that alternative (*i*) is his best use of his farm and that alternative (*ii*) is his next best alternative use of his farm.

i) Grow wheat. Wheat yield would be 80 bushels per acre. The price of wheat is $6.50/bushel and production costs are $290/acre.

ii) Grow barley. Barley yield would be 70 bushels per acre. The price of barley is $4.50/bushel and production expenses are $140/acre.

Considering the opportunity cost of production and a change in the price of wheat, what is Mr. Ewing's minimum acceptable price of wheat? Assume that Mr. Ewing has no interest in selling below the opportunity cost of production and that the stated technical efficiencies and stated production costs do not change.

A. $5.50
B. $3.50
C. $5.04
D. $5.15
E. $5.82

25. Assume that Popeye's Farm has the following production possibilities for spinach and okra, as illustrated in the Table 7.2.5.

Table 7.2.5

Quantity of Spinach	Quantity of Okra
0.00	25.00
2.50	23.00
4.50	20.00
6.20	16.00
7.25	12.25
8.00	7.00
8.50	0.00

If the price of spinach is $9.40/unit and the price of okra is $4.00/unit, how many units of each product should Popeye's Farm produce?

A. 2.50 units of spinach and 23.00 units of okra
B. 4.50 units of spinach and 20.00 units of okra
C. 6.20 units of spinach and 16.00 units of okra
D. 7.25 units of spinach and 12.25 units of okra
E. 8.00 units of spinach and 7.00 units of okra

26. If the price of a good is reduced to $8 per unit, from $10 per unit, and as a result of that price decrease, sales increase to 1,100 units from 1,000 units, it can be concluded that:

A. demand is inelastic.
B. demand is unit elastic.
C. demand is elastic.
D. demand is inelastic and the arc price elasticity of demand is equal to -2.33.
E. demand is elastic and the arc price elasticity of demand is equal to -2.33.

27. A cattle ranch started last year with $65,000 in its cash account. Within the year, all the events that affected cash are summarized Table 12.2.1.

Table 12.2.1	
Cash paid for operating expenses	$220,000
Net increase in short-term debt	60,000
Cash paid for purchase of breeding stock	50,000
Cash paid for income taxes	25,000
Owner withdrawals	20,000
Repayment of term debt	30,000
Cash received from operations	230,000

The cash balance at the end of the year is

A. -$110,000
B. $10,000
C. $0
D. -$55,000
E. $5,000

28. The regular Modified Accelerated Cost Recovery System (MACRSA) rates for farm and ranch assets in the 3, 5, and 7 year classes by the half-year convention[1] are given as follows:

	Recovery percentages		
Recovery year	3-year class	5-year class	7-year class
1	25.00	15.00	10.71
2	37.50	25.50	19.13
3	25.00	17.85	15.03
4	12.50	16.66	12.25
5		16.66	12.25
6		8.33	12.25
7			12.25
8			6.13

Assume that you purchase a $25,000 pickup truck for farm business use, using the MACRSA which of the following represent the depreciation for year 4?

A. $4,165.00
B. $3,125.00
C. $3,062.50
D. $5,000.00

29. Assume that a farmer raises 1,000 acres of wheat each year and that to protect his investment the farmer purchases multiple-peril crop insurance. The historical yield is 40 bushes per acres and he insures at an 80% production yield. The maximum price guarantee is set at $4.50 per bushel and the premium coverage is $8.00 per acre. A weather related incident reduces average yield to 25 bushels per acre. What is the loss payment per acre?

A. $56.00
B. $49.50
C. $40.50
D. $31.50
E. $25.00

30. Assume that a cattle feeding company filled one of its feedlots with a new set of cattle with an expected production cost of $1,200 per head. Average selling weight is 1,000 pounds. Assume that the current finished cattle market is at $118 per cwt and that May cattle futures contracts are selling at $122 per cwt. The feedlot manager decides to hedge the cattle by selling a futures contract. Assume that in May when the cattle are ready to sell, the finished market was at $117 per cwt, the futures contracts were at $118 per cwt, and that expected production costs and average selling weight held. In May the farmer sold his cattle for cash and bought back the futures contracts. What were the net revenues per cwt?

A. $3.00 loss
B. $1.00 loss
C. $0.00 (break-even)
D. $1.00 gain
E. $3.00 gain

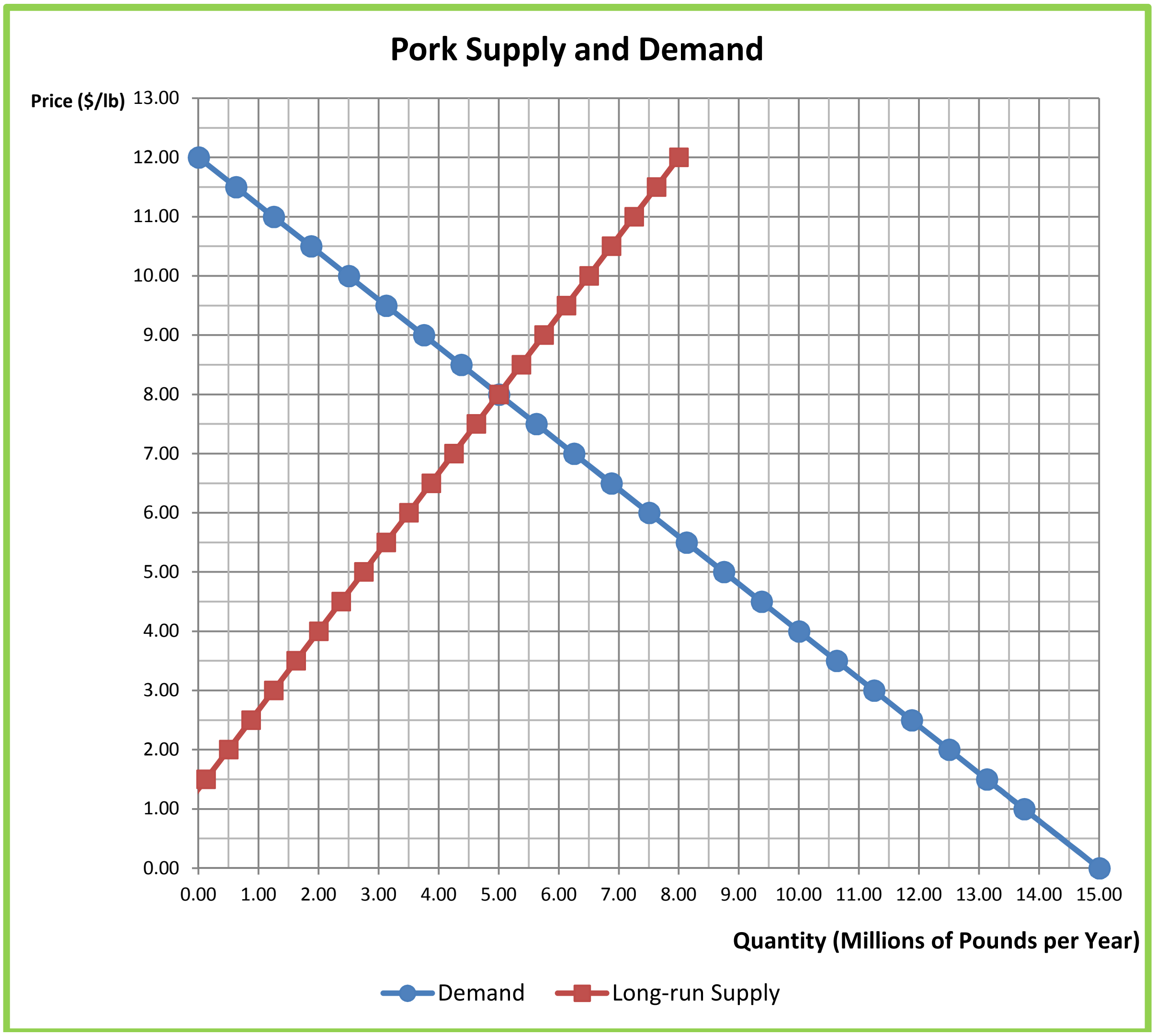
[1] Source: IRS Publication 225, Farmer's Tax Guide

<u>Part II: Problem Solving</u> (5 points per blank)
Do not write on exam – Write all answers on the answer sheet.

<u>Use the Following Information for Questions 1 through 4</u>
Consider the supply and demand for pork shown in Figure 8.3.1. Assume that the production lag for pork is exactly one year. A market shock occurs in 2009, temporarily decreasing prices from its long-run equilibrium of $8.00 to $4.00. Use the Cobweb Model to answer the question below. (*Explicitly state units of measurement; be as accurate as possible on numerical values*)

1. How much pork will be produced in 2010? ______________________________
2. What will be the pork price in 2010? ______________________________
3. How much pork will be produced in 2011? ______________________________
4. What will be the price of pork in 2011? ______________________________

Figure 8.3.1



Use the following information for Questions 5 through 16

As an accountant you have prepared the following accrual-adjusted income statement and balance sheets for Billy Bob's Ranch.

Billy Bob's Ranch: Accrual-Adjusted Income Statement for the Year Ended December 31, 2010		
Cattle Sales	$950,000	
Hog Sales	450,000	
Corn Sales	400,000	
Government Program Payments	40,000	
Custom Work	70,000	
+ Increase in Accounts Receivable	100,000	
- Decrease in Inventory	-65,000	
Gross Revenues		$1,945,000
Feed Expenses	$300,000	
Purchased Market Livestock	700,000	
Labor Expense	230,000	
Seed	85,000	
Chemicals	65,000	
Fuel	45,000	
Utilities	30,000	
Repairs	7,000	
Veterinary and Medicine	20,000	
Rent Expense	80,000	
Property Tax	15,000	
Depreciation Expense	100,000	
+ Increase in Accounts Payable	8,000	
Operating Expenses		1,685,000
Interest Expense	200,000	
Total Expenses		1,885,000
Net Farm Income from Operations		60,000
Gain (loss) on the Sale of Capital Assets		5,000
Net Farm Income		55,000
Miscellaneous Revenue (expense)		-7,500
Income Before Income Taxes		47,500
Income Taxes Paid	12,500	
+ Increase in Current Portion of Deferred Taxes	3,000	
Income Tax Expense		15,500
Net Income		$32,000

Billy Bob's Ranch: Balance Sheet as of December 31 2009, and December 31, 2010		
	2009	2010
Assets		
Cash	$15,000	$10,000
Accounts Receivable	310,000	300,000
Inventory	610,000	540,000
Total Current Assets	$935,000	$850,000
Breeding Livestock	$200,000	$210,000
Less: Accumulated Depreciation	-25,000	-30,000
Equipment	1,400,000	1,350,000
Less: Accumulated Depreciation	-250,000	-310,000
Buildings	750,000	750,000
Less: Accumulated Depreciation	-65,000	-75,000
Land	1,100,000	1,100,000
Total Non-current Assets	$3,110,000	$2,995,000
TOTAL FARM ASSETS	$4,045,000	$3,845,000
Liabilities		
Accounts Payable	$125,000	$140,000
Short-term Notes Payable	950,000	930,000
Current Portion of Term Debt	220,000	220,000
Current Portion of Deferred Taxes	60,000	60,000
Total Current Liabilities	$1,355,000	$1,350,000
Non-current Portion of Term Debt	$1,950,000	$1,750,000
Deferred Taxes - Non-current	30,000	30,000
Total Non-current Liabilities	$1,980,000	$1,780,000
Total Liabilities	$3,335,000	$3,130,000
Owner's Equity		
Retained Capital	$665,000	$670,000
Valuation Equity	45,000	45,000
Total Owner's Equity	$710,000	$715,000
TOTAL LIABILITY AND OWNER'S EQUITY	$4,045,000	$3,845,000

You have also prepared the following supplemental information:

- Owner withdrawals for unpaid labor and management were $40,000 during 2010
- Annual scheduled principal and interest payment on term debt were $200,000 for principal and $140,000 for interest during 2010.
- Billy Bob's Ranch had no non-farm income, no capital leases, no payments on unpaid operating debt from a prior period, and no payments on personal liabilities during 2010.

Using the income statement and balance sheets for Billy Bob's Ranch, calculate the ratios and measures listed below for 2010. (Put your answers in the table on the answer.)

5. current ratio
6. working capital
7. debt-to-equity ratio
8. debt-to-asset ratio
9. equity-to-asset ratio
10. rate of return on farm assets
11. rate of return on farm equity
12. operating profit margin ratio
13. net-farm-income-from operations ratio
14. Is Billy Bob's Ranch liquid or illiquid?
15. Is Billy Bob's Ranch solvent or insolvent?
16. Is Billy Bob's Ranch making a profit? Yes or No.

<u>Fill-in-the-Blank</u>: (5 points each blank)
Use the following table of terms to fill in the blanks in the following statements. Please note that there are more options provided than blanks. Use a term only once; thus, you must select the single best term.

Production Function	Law of Diminishing Returns
Agricultural Adjustment Act of 1937	Marketing Orders
Capper Volstead Act of 1922	Normal Goods
Cross Price Elasticity of Demand	Own-Price Elasticity of Demand
Enterprise Budget	Own-Price Elasticity of Supply
Fixed Costs	Partial Budget
Income Elasticity of Demand	Variable Costs
Inferior Goods	Whole Farm Plan

17. A _______________ summarizes the technical and engineering information about the relationship between a firm's inputs and outputs.

18. The _____________ asserts that marginal returns will ultimately diminish when the quantity of one input is increased.

19 and 20.
The _________________ change with the level of production, whereas the ______________ do not change with the level of production.

21. The _________________expresses the relationship between a change in the price of a good and the change in the quantity demanded for that good.

22. The _________________ measures the relative response in the consumption of a good or service to changes in consumer income.

23. ____________________ are goods for which consumption increases (decreases) when income increases (decreases).

24. The _________________ describes the percent change in quantity supplied with respect to a percent change in the price of the product.

25. The _________________ is a measure of the response of consumption of a good or service to changes in the price of another good or service.

26. A(n) _________________ is an estimate of the changes in income and expenses that would result from carrying out a proposed change in the current farm plan.

27. A(n) _________________ provides a summary of the intended types and sizes of enterprises to be carried on by a farm business.

28. A(n) _________________ provides an estimate of the potential revenue, expenses, and profit for a single crop or livestock enterprise.

29 and 30.
____________________ are a government enforced regulatory measure that allow producers and processors of agricultural commodities to make agreements devised to achieve orderly marketing conditions, restrict competition, and raise prices of agricultural commodities. The enabling legislation for these instruments was initiated under the federal ___________________________.