

MICHIGAN ASSOCIATION OF FFA
2014 FARM BUSINESS MANAGEMENT CONTEST

April 15th, 2014

The Farm Management Contest is designed to test student understanding of the application of business and economic principles in farm management. Please read all the questions carefully!

The 2014 test is composed of 85 multiple choice questions. There is only one correct answer for each question. Choose the best answer and mark the appropriate box on the score sheet provided.

**Note: On the answer sheet “A” or “1” = True
and “B” or “2” = False.**

1. A farm business which is described as being highly leveraged is one where:
 - a. Total liabilities are high relative to net worth.
 - b. Total liabilities are low relative to net worth.
 - c. Net farm income is high relative to total assets.
 - d. Net farm income is low relative to total assets.
 - e. Current liabilities exceed current assets.

2. Fred Feeder would like to calculate the value of the feed he fed his cattle in 2013. He has compiled the following facts:

Beginning feed inventory.....	\$10,000
Feed purchased during 2013	\$ 6,000
Feed sold during 2013	\$ 2,000
Feed produced during 2013.....	\$25,000
Ending feed inventory.....	\$15,000

What is the value of the feed that was fed to Fred's cattle?

 - a. \$31,000
 - b. \$25,000
 - c. \$24,000
 - d. \$15,000
 - e. \$6,000

3. A farmer was late getting soybeans planted and an early frost hit the crop before the crop had matured. The harvest costs are \$40 per acre and the revenues would be \$60 per acre if harvested. Prior to the frost, \$106 per acre was invested in operating expenses. The farmer should:
 - a. Abandon the crop because the farmer cannot cover all variable expenses.
 - b. Rent the field to a neighbor for \$10 per acre to use as sheep grazing, instead of harvesting the crop.
 - c. Harvest the soybeans and sell the soybeans for \$60 per harvested acre.
 - d. Harvest half of the acres and abandon the other half.
 - e. Plant corn next year instead of beans.

4. The financial progress being made in a farm business from one year to the next year is best shown by:
 - a. A change in total assets.
 - b. A change in net worth.
 - c. A change in liabilities.
 - d. A cash basis income tax statement or tax return Schedule F.
 - e. A change in cash available.

5. In order to reduce risk, a farmer might do all of the following except:
 - a. Hedge on a commodities exchange.
 - b. Plant several different crops in his rotation.
 - c. Carry insurance on his crops.
 - d. Forward contract the sale of some of his crop.
 - e. Choose the combination of enterprises which maximizes revenues.

6. The advantage of leasing a combine rather than buying it is that:
- A leased combine can be depreciated more rapidly than a purchased one.
 - Leasing the combine may require less "up-front" money.
 - Leasing a combine will always be less expensive in the long run.
 - All of the above.

For Questions 7-11: Deets N. Assets has taken inventory and has collected the following information on the value of everything he owns and owes as of December 31, 2013:

Land and buildings	\$400,000	Breeding livestock owned.....	\$35,000
Crops in storage	\$ 30,000	Feeder livestock owned.....	\$14,000
Mortgage on land.....	\$225,000	Cash rent owed to his landlord.....	\$ 6,000
Machinery owned	\$ 65,000	Feed in storage	\$ 2,000
Loans owed on machinery	\$ 12,000	Production loan outstanding	\$ 9,000
Taxes owed	\$ 1,000	Supplies in storage	\$ 7,000
Cash on hand.....	\$ 3,000	Fuel in storage.....	\$ 500

7. The total value of Deets' **assets** is:

- \$554,500
- \$556,500
- \$565,500
- \$577,500
- \$255,000

8. The total value of Deets' **liabilities** is:

- \$58,000
- \$249,000
- \$255,000
- \$253,000
- \$554,500

9. Deets' **net worth** is:

- \$303,500
- \$299,500
- \$316,500
- \$296,500
- \$554,500

10. Deets owns **current assets** of:

- \$556,500
- \$400,000
- \$3,000
- \$500
- \$56,500

11. Deets owes **current liabilities** of:
- \$253,000
 - \$225,000
 - \$6,000
 - \$16,000
 - \$9,000
12. You are attempting to analyze the prospects for beef prices in the coming year. Which of the following factors would lead you to believe that beef prices will be stable to decreasing?
- The prices of pork and chicken are low and are not expected to rise.
 - Consumer income levels have increased.
 - The cost of producing beef is expected to increase.
 - Foreign demand for beef is increasing significantly.
 - Consumers concerns about the health effects of eating beef decline.
13. Harry Highgate had a net farm income last year of \$40,000. Opportunity costs for unpaid family labor and management were \$30,000. Equity in the business was \$200,000. What was the percent return on his equity?
- 10%
 - 20%
 - 5%
 - 15%
 - 3%
14. A farmer has total assets of \$500,000 which includes a market value of \$300,000 on land and a debt to equity ratio is 1.0:1. His lender values the land at book value which is 10% less than market value. What is the farmer's debt to equity ratio at book value?
- 0.88:1
 - 1.12:1
 - 1.14:1
 - 1.27:1
15. Marginal revenue and marginal cost are useful in determining the profit maximizing output level. Profit will be at its maximum level when marginal revenue:
- Is at its maximum level and marginal cost is equal to zero.
 - Is equal to zero and marginal cost is at its maximum.
 - Is greater than total cost.
 - Is at its minimum and marginal cost is at its maximum.
 - Equals marginal cost and total returns exceed total costs.
16. Solvency has been achieved when a farmer has:
- Sufficient current assets to cover current debts.
 - Sufficient equity to cover current debts.
 - Sufficient assets to cover all debts.
 - A positive cash flow.

17. Net worth (equity) is a measure of:
- Managerial ability.
 - Financial position.
 - Profitability.
 - Liquidity.
 - Cash flow.
18. A farmer is able to produce 300 cwt. of potatoes per acre using 500 pounds of fertilizer. With the application of 600 pounds of fertilizer, the farmer can produce 320 cwt.; at 700 pounds, 330 cwt. are produced; at 800 pounds, production goes to 335 cwt.; and at 900 pounds, 340 cwt. are produced. Assume that fertilizer can be added only in 100 pound increments. If potatoes sell for \$3 per cwt. and fertilizer costs \$14 per hundred pounds, how many pounds of fertilizer should be applied per acre to maximize net income?
- 500
 - 600
 - 700
 - 800
 - 900
19. The total amount borrowed on a loan may be increased without increasing the annual payments on the loan by:
- Raising the interest rate.
 - Increasing the number of years of repayment.
 - Reducing production costs.
 - Buying more land.
 - Paying off the loan in fewer years.
20. How should you value home-grown feeds such as corn or hay in a livestock feeding enterprise budget?
- Cash invested in growing crops.
 - Variable production costs of the homegrown feeds.
 - Net selling price of the homegrown feeds.
 - Zero.
21. The main goal of income tax management is to:
- Minimize before-tax income.
 - Minimize total taxes paid.
 - Maximize taxes paid.
 - Maximize taxable income.
 - Maximize after-tax income.

22. The maxi-min strategy for choosing among risky alternatives assumes that the farm manager is most concerned with:
- achieving a high average return
 - achieving the best possible result in a good year
 - achieving the best possible result in a bad year
 - minimizing the chances of suffering a loss
23. Which of the following items will not appear on either the Jan. 1, 2012 or Jan. 1, 2013 balance sheets?
- A mortgage owed and not yet repaid in 2012.
 - Money borrowed during 2012 and not yet repaid.
 - Feeder pigs purchased, fed, and then sold during 2012.
 - Tractor sold during 2012.
 - Grain harvested in 2012 and put in storage.
24. A soybean producer decides to store soybeans in the local elevator for five months. The price at harvest is \$6.00 per bushel and the elevator charges \$0.02 per bushel per month for storage plus a one time \$0.05 per bushel handling charge. The producer has 4,000 bushels to store and must borrow \$24,000 at 8% annual interest in order to store the soybeans. What price must be received for the soybeans to break even and cover storage and opportunity costs?
- \$6.15
 - \$6.20
 - \$6.25
 - \$6.35
 - None of the above.
25. A farmer has debt to equity ratio of 2:1. The current liabilities are \$50,000 and the non-current (intermediate and long-term) liabilities are \$70,000. What is the value of the assets?
- \$240,000
 - \$120,000
 - \$ 60,000
 - \$180,000
 - Cannot be determined with information provided.
26. On April 1, Karen Cornstalk borrowed \$8,000 to buy supplies to plant her corn. On November 1, she repaid the \$8,000 along with \$495 interest. What annual interest rate did she pay on the loan?
- 6.187%
 - 9.281%
 - 10.607%
 - 12.375%
 - 16.16%

27. Tom Farmer earned \$20,000 from farming last year after paying all costs including the value of his labor and management. His total assets are valued at \$380,000. He has outstanding mortgages, loans, and other debts of \$125,000. What rate of return did he earn on his equity?

- a. 5.26%
- b. 5.55%
- c. 7.84%
- d. 10.50%
- e. 16.0%

28. Dryland corn in eastern Nebraska has an expected yield of 90 bushels per acre and has a production cost of \$140.00 per acre. Expected market prices are \$2.50 per bushel for corn and \$6.00 per bushel for soybeans. Soybeans can be raised with a production cost of \$120.00 per acre. At what yield per acre would soybeans generate the same net return per acre as corn?

- a. 25.6 bushels
- b. 29.1 bushels
- c. 34.2 bushels
- d. 38.7 bushels
- e. 47.6 bushels

29. A farmer is considering purchasing a combine. Annual combine ownership costs will be 20% of the purchase price. The annual operating costs will be \$9,000 per year. The machine will increase income by \$3,000 per year due to increased harvested yields through better timeliness and save \$10,000 in custom combining costs. What is the maximum the farmer can pay for the combine and increase annual profit?

- a. \$5,999
- b. \$49,999
- c. \$109,999
- d. \$10,999
- e. \$19,999

30. Inflation means:

- a. A dollar will buy more in the future than it will buy today.
- b. The prices are which the interest rate will equal the inflation rate.
- c. The farmer's profit margin will increase over time due to higher prices.
- d. The purchasing power of a dollar declines over time.
- e. Value of all products will decrease over time.

31. On November 1 the local corn price is \$6.75 and Carl Corngrower is deciding whether to sell his crop now or store it to try and get a better price. Storage costs and opportunity cost for storage are 4 cents per bushel per month. What price would the local elevator need to be paying on January 15 to break even storing the corn?

- a. \$6.75
- b. \$6.79
- c. \$6.81
- d. \$6.85
- e. \$6.87

32. You have 200 pigs to market at 250 lbs. a piece. Overhead (fixed) costs total \$15,000. Feed costs are \$10 per pig and other costs are \$2 per pig. What price per pound is needed to breakeven?
- \$0.435
 - \$0.30
 - \$0.248
 - \$0.348
 - None of the above.
33. Most farmers are more likely to accept a risk if:
- Only a small possible loss is involved
 - They have a high debt to asset ratio
 - They have high fixed cost cash flow obligations
 - They are primarily concerned with maintaining their net worth
34. Depreciation expense for a new tractor is \$15,000 per year. You use the tractor 500 hours in the first year: 350 are used in your corn enterprise, 100 for soybeans, and 50 hours for hay. How much of the depreciation expense should be allocated to the corn enterprise if hours of use determine the allocation?
- \$15,000
 - \$10,500
 - \$4,500
 - \$3,000
 - \$0
35. Joe's farm has \$50,000 current assets, \$150,000 long term assets, \$30,000 current liabilities, and \$50,000 long term liabilities. Joe's debt to equity ratio is:
- 0.33
 - 0.5
 - 0.67
 - 0.75
 - 1.50
36. Joe's farm has \$50,000 current assets, \$150,000 long term assets, \$30,000 current liabilities, and \$50,000 long term liabilities. Joe's net worth is:
- \$120,000
 - \$20,000
 - \$240,000
 - \$120,000
37. A cash flow shows all the following except:
- When you need to borrow money.
 - How much money you need to borrow.
 - When you can increase spending without additional borrowing.
 - When you can repay loans.
 - All of the above are shown by using cash flow.

38. Which of the following is not true about partial budgets?
- They help analyze how changes in certain farm enterprises affect profits.
 - They measure every return and cost change, whether increased, decreased, or stay the same.
 - They show the effect that various prices, yields, and costs have on net farm income if proposed change is made.
 - They help analyze loan repayment capacity of a farm business.
 - They are usually simpler than complete farm budgets.

(Questions 39-41) Use the following Present and Future Values table to answer questions 39 to 41.

<u>Year</u>	<u>Present Value of \$1</u>	<u>Future Value of \$1</u>
1	\$0.926	\$1.080
2	\$0.857	\$1.166
3	\$0.794	\$1.260

39. If you receive \$2,000 one year from now and \$10,000 3 years from now, what is it worth today?
- \$14,760
 - \$12,000
 - \$11,112
 - \$9,792
 - \$9,528
40. If you have \$25,000 today, what will it be worth 2 years from now?
- \$31,500
 - \$29,150
 - \$27,000
 - \$25,000
 - \$21,425
41. You received \$15,000 today, and will receive a payment of \$5,000 once a year for the next 3 years. What is the present value of this income?
- \$15,000
 - \$20,000
 - \$26,910
 - \$27,885
 - \$30,000
42. The major subdivisions of a balance sheet are:
- Assets, liabilities and net worth.
 - Income, expenses, and net profit.
 - Cash received, cash paid, and cash remaining.
 - Amount borrowed, amount paid off, and balance outstanding.

43. If a decision-maker is using the Weighted Average Cost of Capital to calculate an appropriate discount rate and will use 60% debt and 40% equity with an interest rate on borrowed capital of 6% and the long-run return on equity of 10% and the firm is in the 28% marginal tax bracket, what is the WACC?

- a. 7.8%
- b. 8.7%
- c. 6.6%
- d. 8.4%

44. If the interest rate is 10%, what is the present value of a dollar to be received by a producer two years from now?

- a. \$0.826
- b. \$0.857
- c. \$0.920
- d. \$1.166
- e. None of the above

45. A diminishing marginal product occurs because of:

- a. decreasing output prices
- b. increasing input prices
- c. decreasing input prices
- d. limits on physical or biological response to increased input levels

46. When a borrower wants to establish credit with a new lender, the possibility of success will be improved if:

- a. existing loans and accounts payable are not revealed
- b. several years of accurate financial statements are provided, which show progress over time
- c. the borrower will guarantee the loan alone rather than with a co-signer
- d. the loan request is for a land purchase rather than for self-liquidating assets such as feeder stock

47. The "rule of 72" says to divide 72 by the annual interest rate to estimate the number of years needed for an initial investment earning that rate to double. How long would it take for \$5 earning 6% a year to grow to \$20?

- a. 12 years
- b. 24 years
- c. 36 years
- d. 48 years

48. Ways to handle risk include all of the following except:

- a. Shift risk
- b. Reduce risk
- c. Self-insure
- d. Avoid risk
- e. Clean risk

49. If the past 10 years of hay prices have been \$95, 98, 101, 133, 115, 88, 111, 105, 100, 104 per ton, the average hay price is:
- a. \$101/ton
 - b. \$105/ton
 - c. \$103/ton
 - d. \$98/ton
 - e. None of the above.
50. If a farmer plans to borrow **all** money to purchase a tractor at 6 percent interest, and is in the 28 percent tax bracket, the cost of capital for this investment is:
- a. 6 percent
 - b. 1.68 percent
 - c. 7.2 percent
 - d. 4.32 percent
51. If the tractor costs \$124,000 (also the loan amount), and the 6 percent loan will be paid back in 5 equal annual payments, what will the annual payment be?
- a. \$29,437.15
 - b. \$24,800.00
 - c. \$20,666.67
 - d. \$26,288.00
52. Average total cost is equal to
- a. (total variable cost)/output
 - b. (total fixed cost)/output
 - c. (total variable costs + total fixed costs)/output
 - d. total cost X output
 - e. none of the above
53. A farm business with declining average total costs has
- a. increasing returns to size
 - b. decreasing returns to size
 - c. constant returns to size
 - d. decreasing demand
 - e. none of the above
54. Which of the following would not be listed as a source of earnings on a farm income statement?
- a. Loan money received from the bank to buy farm supplies.
 - b. A patronage dividend received from the local co-op.
 - c. A fuel tax refund received from the government.
 - d. A government farm program payment received.
 - e. None of the above should be included.

55. A good parent-child partnership is one which:
- Assists the child in acquiring sufficient assets to get started.
 - Allows the parent to manage the operation and the child to do the physical work.
 - Allows the child to have the profits and the parent to cover any losses.
 - The parent is the boss until he retires or dies, then the child takes over.
 - Keeps the child on the farm even if income is low.
56. In a year of particularly high income, which of the following would be an appropriate strategy to reduce cash basis tax liability?
- Sell some land for more than it cost.
 - Purchase some additional land for cash.
 - Purchase a new snowmobile.
 - Purchase tractor fuel needed for next year for cash.
 - Purchase protein supplement for next year on account.
57. The degree to which a farm's assets adequately cover or exceed liabilities is referred to as:
- Profitability
 - Solvency
 - Liquidity
 - Working capital

For questions 58 through 61 (ONLY!) use the following information:

Consider a situation where you are the manager of a farm that has just completed a year-end financial analysis in December 2013. Using beginning and ending balance sheets as well as an income statement you calculate the following information for 2013:

Net cash farm income:	\$ 164,333	Gross cash farm income:	\$ 744,333
Beginning current asset value:	\$ 334,568	Beginning current liabilities:	\$ 289,800
Beginning asset value:	\$1,233,550	Ending asset value:	\$1,298,000
Beginning equity:	\$ 846,225	Ending equity:	\$ 868,000
Interest expense:	\$ 30,000	Depreciation expense:	\$ 87,280
Inventory change:	\$ 0		

58. How much was your total revenue for 2013?
- \$1,233,550
 - \$ 744,333
 - \$ 164,333
 - cannot be determined from the information given
59. How much was your total cash farm expense for 2013?
- \$164,333
 - \$681,892
 - \$580,000
 - cannot be determined from the information given

60. Net farm income for 2013 was how much?
- a. \$77,053
 - b. \$194,333
 - c. \$254,333
 - d. cannot be determined from the information given
61. The beginning current ratio was?
- a. 0.87
 - b. 0.93
 - c. 1.10
 - d. 1.15
62. True or False: The level of output that maximizes profit is always less than the amount that is maximum production.
63. If a farm financial analysis is performed and the farmer decides she must increase asset turnover, which of the following is a way to address an exceptionally high value of invested assets and achieve a higher asset turnover rate:
- a. Liquidate non-productive assets.
 - b. Change the debt structure to have less current liabilities.
 - c. Concentrate on higher crop yields this year.
 - d. Lower farm fuel and utility bills.
64. Using a set of balance sheets with income statements that describe the years between the balance sheets we can address all of the following financial aspects EXCEPT:
- a. Liquidity
 - b. Cash-Flow
 - c. Solvency
 - d. Profitability
65. Which of the following is NOT a component of a Balance Sheet?
- a. Current Assets
 - b. Change in Inventory Values
 - c. Long-term Liabilities
 - d. Net Worth
66. Which of the following is a measure of Solvency?
- a. Debt to Asset Ratio
 - b. Working Capital
 - c. Current Ratio
 - d. Net Farm Income
67. True or False: A Balance Sheet is a financial snap-shot of the farm business while an income statement describes the time between balance sheets (usually the calendar year).

68. You are asked to analyze the balance sheet of a farm. You find out from examining the balance sheet that the current ratio is 4.53. How would you classify this ratio?
- a. poor
 - b. fair
 - c. good
 - d. cannot tell from given information
69. An increase in the number of non-farmers living in rural areas may cause:
- a. farmland values to decrease
 - b. farmers to pay more attention to off-farm effects of their production practices
 - c. less regulation of agricultural production practices
 - d. profit maximization to be the only criterion for adopting new technologies
70. If the marginal product (MP) is decreasing with additional input, value marginal product (VMP) will be
- a. increasing
 - b. decreasing
 - c. constant
 - d. decreasing and equal to MP
71. True or False: Most farms in the US are incorporated.
72. In the short run,
- a. total fixed costs are zero when there is no production
 - b. total variable costs are zero when there is no production
 - c. total cost will remain constant as output is increased
 - d. total cost will decrease as output is increased
73. In the short run, production should be stopped whenever
- a. total revenue is less than total variable cost
 - b. total revenue is less than total cost
 - c. total revenue is less than total fixed cost
 - d. total revenue is greater than total fixed cost
74. True or False: There are both fixed and variable costs in the short run.
75. True or False: Average Fixed Cost is constant as output increases.
76. True or False: Weather is an important source of production risk for crop producers.
77. True or False: Even farmers with good risk-bearing ability may be risk avoiders.
78. True or False: Being self-insured by maintaining liquid financial reserves carries no cost to the operator, while buying insurance policies does.
79. True or False: Profit will increase any time more input is used.

80. True or False: Maximum production is not the same level as maximum profit because of the law of diminishing returns.

81. The probability of a heifer calf is 48% and the value of a heifer calf is \$475. The probability of a bull calf is 52% and the value of a bull calf is \$55. (Assume no death loss or other factors – you only need to use the values provided above.) The expected value of the calf is:

- a. \$259.25
- b. \$256.60
- c. \$55.00
- d. \$475.00
- e. Both C. and D.

82. A written agreement by which an owner of property transfers title to someone for the benefit of beneficiaries is a

- a. trust
- b. partnership
- c. corporation
- d. sole proprietorship
- e. None of the above.

83. Livestock producers should be concerned about all of the following when deciding upon production practices to employ, except,

- a. Consumer groups and possible reactions to practices
- b. Possible revenue increases from production changes versus cost increases
- c. Popular press and media reaction to practices
- d. Likelihood of public acceptance of certain practices in the future
- e. No exceptions; they should be concerned about all of the above.

84. True or False: Regulations involving environmental issues on farms are likely to get more stringent in the future.

85. True or False: Purchased livestock can be depreciated but livestock raised at home cannot be depreciated.

Key 2014 MI Farm Business Management Test

2014 Michigan FFA farm management exam

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	21	e	41	d	61	d
2	c	22	c	42	a	62	b
3	c	23	c	43	c	63	a
4	b	24	d	44	a	64	b
5	e	25	c	45	d	65	b
6	b	26	c	46	b	66	a
7	b	27	c	47	b	67	a
8	d	28	c	48	d	68	c
9	a	29	e	49	b	69	b
10	e	30	d	50	d	70	b
11	d	31	d	51	a	71	b
12	a	32	d	52	c	72	b
13	c	33	a	53	c	73	a
14	b	34	b	54	a	74	a
15	e	35	c	55	a	75	b
16	c	36	a	56	d	76	a
17	b	37	e	57	b	77	a
18	e	38	d	58	b	78	b
19	b	39	d	59	c	79	b
20	c	40	b	60	a	80	a
						81	b
						82	a
						83	e
						84	a
						85	a