

# 2024 WV STATE AGRICULTURE CAREER DEVELOPMENT EVENTS

## FARM AND AGRIBUSINESS MANAGEMENT

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Part		Questions	Total Points
I	Financial Statements	1-12	34
II	Budgeting	13-21	30
III	Cash Flow Planning	22-32	24
IV	Economic Principles	33-43	32
V	Investment Analysis	44-54	36
VI	Risk Management	55-64	20
VII	Marketing	65-75	24
	Total	75	200

### Directions:

- You have **3 hours** to complete this contest.
- Questions are worth 2 points unless otherwise noted.
  - Questions that are worth 4 points are denoted by an asterisk beside the number (e.g. \*9.)
- Read the questions closely and mark your answers only on the computer graded answer sheet AG SALES/FB MGT./AG MECH
  - Record your answers in the section labeled **WRITTEN EXAM A** on your answer sheet.
- Each question has only one correct answer.
- Calculators **are** allowed for this test. Calculators should be battery operated, non-programmable and non-scientific (basic five function only).

## PART I – FINANCIAL STATEMENTS

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1. The asset that is a non-current asset is
  - A. 5000 bushels of corn in storage
  - B. prepaid fertilizer expenses
  - C. a storage shed for machinery**
  - D. cash on hand
  
2. An accounting period for the farm business that covers the period from January 1 to December 31st of each year would be an example of which type of accounting period?
  - A. custom year accounting period
  - B. fiscal year accounting period
  - C. calculated year accounting period
  - D. None of the above.**
  
3. A balance sheet that includes adjusted basis of the non-current assets is a \_\_\_\_\_.
  - A. cost basis balance sheet**
  - B. market basis balance sheet
  - C. a salvage basis balance sheet
  - D. all of the above are correct
  
- \*4. Frannie Farmer is reviewing her financial statements. Her total farm assets are three times that of net worth. Total liabilities are \$40,000. Her total farm assets are \_\_\_\_\_ and net worth is \_\_\_\_\_.
  - A. \$40,000 , \$13,333.33
  - B. \$30,000, \$10,000
  - C. \$15,000, \$45,000
  - D. \$60,000, \$20,000**
  - E. None of the above
  
5. Net farm income for a business represents a return to \_\_\_\_\_.
  - A. paid and unpaid family labor
  - B. lenders
  - C. owners' investment in the business**
  - D. borrowed capital
  - E. none of the above

\*6. You are the manager of an agribusiness firm that has just completed a year-end financial analysis. Given the following information, what is the debt-to-equity ratio?

Net income after taxes:	\$ 166,775
Current asset value:	\$ 339,568
Current liabilities:	\$ 289,800
Total asset value:	\$ 1,777,550
Owner's Equity:	\$ 846,225
Interest expense:	\$ 30,000

- A. .34
- B. .53
- C. 1.1**
- D. 2.1
- E. None of the above

7. Which of the following can increase the retained earnings of the farm business?

- A. Net farm income greater than business withdrawals for family living**
- B. Net farm income less than business withdrawals for family living expenses and
- C. An operating loss for the accounting period.
- D. An increase in the amount of money withdrawn from the business for family living expenses and income taxes.

**Refer to the Resource Information page R2 to answer the following questions.**

\*8. As of 12/31/2019, the current ratio for Minnie's Meat Goats was \_\_\_\_\_. According to the Farm Financial Scorecard, this falls into the \_\_\_\_\_ category.

- A. .9, vulnerable/red
- B. 1.1, vulnerable/red**
- C. 1.1, strong/green
- D. 1.2, strong/green
- E. None of the above

\*9. As of 12/31/2021, the Equity-to-Asset ratio for Minnie's Meat was \_\_\_\_\_. According to this ratio, Minnie's Meat Goats is in a \_\_\_\_\_ financial position that it was on 12/31/2017.

- A. .74, stronger
- B. 74, weaker
- C. .26, stronger**
- D. .26, weaker
- E. none of the above

**Refer to the Resource Information R4-R7 to answer the following questions.**

10. Which of the following has been a source of FARMCO's increase in Net Farm Income from Operations from 2020 to 2021?

- A. Increased government payments
- B. Increased crop sales
- C. Decreased spending on livestock held for resale
- D. Both A and B are correct**

\*11. Compared to 2017, FARMCO spent \_\_\_\_\_ times more on insurance in 2021.

- A. 2.1
- B. 2.9
- C. 3.27**
- D. 4.5

12. All sources of cash income increased from 2017 to 2021.

- A. True
- B. False**

## PART II – Budgeting

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Use the following information to answer questions 13-16.

You run a small slaughter (beef) steer operation. A local dairy farmer has approached you with a proposal to contract all their baby bull calves for \$125 per head. Using the following information, analyze this choice using the partial budget form.

Dairy beef enterprise (per head):

- Operating costs= \$894.90 (includes the \$125 purchase price for calves)
- Production = average finishing weight of 1,274 lbs. at a market price of \$75.00 per cwt.

Slaughter beef steer enterprise (per head):

- Operating costs = \$1,074.54
- Production = average finish weight of 1,335 lbs. and a market price of 84.75 per cwt.

13. Should you start a dairy beef operation and decrease the slaughter (beef) steer enterprise?

- A. Yes**
- B. No
- C. Cannot determine with the given information

\*14. What are reduced returns from starting a dairy beef operation and decreasing the slaughter (beef) steer enterprise?

- A. \$894.90
- B. \$955.50
- C. \$1001.25
- D. \$1131.41**
- E. None of the above

\*15. What is the net change income from starting a dairy beef operation and decreasing the slaughter (beef) steer enterprise?

- A. \$179.64
- B. \$177.18
- C. \$3.73**
- D. \$2.46
- E. None of the above

\*16. What would the price of beef slaughter steers need to be for the profit from both activities to be the same?

- A. **\$85.03/cwt.**
- B. \$84.50
- C. \$77.46/cwt.
- D. \$71.57/cwt.
- E. None of the above

**For the following questions, refer to the Alfalfa Hay enterprise budget which is in your Resource Information on page R3.**

17. What alfalfa price per ton was used to develop the enterprise budget?

- A. \$3
- B. **\$80**
- C. \$240
- D. Not provided on the enterprise budget.

\*18. According to the enterprise budget provided, what is the profit?

- A. \$1.60/bushel
- B. **\$1.60/acre**
- C. \$240/bushel
- D. \$2.40/acre
- E. None of the above

\*19. Calculate the breakeven price required to cover all costs for producing alfalfa hay.

- A. \$19/bu
- B. \$60.47/ton
- C. **\$79.47/ton**
- D. \$1060/bu
- E. None of the above

\*20. Calculate the breakeven yield to cover all costs for alfalfa production at the current market price?

- A. 2.27 tons/ac
- B. **2.98 tons/ac**
- C. 2.99 tons/ac
- D. 3.0 tons/ac.
- E. None of the above

21. Over the long run, suppose the price of alfalfa hay falls to \$75/ton and costs remain the same. Should the operator continue to produce alfalfa?

- A. Yes, the operator will still be able to sell the alfalfa hay produced.
- B. Yes, the operator will still realize a profit on the alfalfa hay produced.
- C. **No, the operator would be realizing a loss on each acre of alfalfa produced.**
- D. No, the operator would still realize a profit on the alfalfa hay produced

### PART III – CASH FLOW PLANNING

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22. Which of the following things would not be included on a projected cash flow.
- A. new loans
  - B. payment on term debt
  - C. sale of capital items
  - D. appreciation in value of breeding animals**
23. Cash inflow vs. outflow incorrectly calculates net income on an accrual basis.
- A. true**
  - B. false
24. The amount spent for family living expenses has no effect the ability to service debt.
- A. true
  - B. false**
25. Which of the following should be included in a cash flow projection?
- A. value of depreciation
  - B. value of operator labor
  - C. feed in inventory
  - D. livestock purchased.**

Answer the following questions regarding FARMCO's 2022 Projected Cash Flow (**pages R6 and R7 of the resource information**).

26. In what month will FARMCO need to borrow the most money in 2022?
- A. May
  - B. June**
  - C. October
  - D. November
27. What is the projected Operating Sales Total?
- A. \$2,792,985**
  - B. \$1,983,540
  - C. \$4,412,055
  - D. \$2,077,750
  - E. None of the above.
28. What are the projected Operating Expenses for the month of December?
- A. \$205,005
  - B. \$78,207**
  - C. \$1,983,540
  - D. \$3,256,596

29. What is the projected ending operating loan balance on December 31, 2022?

- A. **\$0**
- B. \$38,667
- C. \$198,181
- D. \$245,140

30. In what month does FARMCO project the largest total cash outflow?

- A. May
- B. **June**
- C. July
- D. August

31. How much does FARMCO plan to spend on farm and crop insurance in 2022?

- A. \$0
- B. \$47,920
- C. **\$117,500**
- D. \$366,360
- E. None of the above

\*32. What would the Ending Cash Balance be if there is a 6% increase in the cost of Gas, Fuel, and Oil?

- A. \$18,856.04
- B. **\$188,560.36**
- C. \$190,163.80
- D. \$222,892.20
- E. None of the above



## PART IV – Economic Principles

\*33. Suppose pairs of pants ( $p$ ) cost \$60 per pair, shirts ( $s$ ) cost \$20 each, and you have \$300 of income. Assume you purchase only pants and shirts with your income. Your budget constraint is  $\$60p + \$20s = \$300$ . Given your budget constraint what is the opportunity cost of a sweater?

- A. 1 pair of pants
- B.  $\frac{1}{2}$  of a pair of pants
- C. 3 pairs of pants
- D.  $\frac{1}{3}$  of a pair of pants**

\*34. If the demand for gasoline were to increase while supply also increased, what would happen to the price?

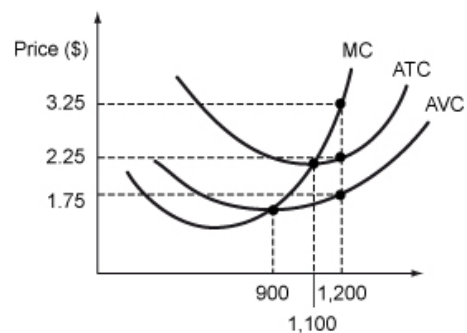
- A. the equilibrium price and quantity would both increase.
- B. the equilibrium price would increase and the equilibrium quantity would stay the same.
- C. the equilibrium price would stay the same and the equilibrium quantity would decrease.
- D. the equilibrium quantity would increase, but the effect on equilibrium price would be indeterminate.**

35. Which of the following is/are characteristics of a monopolistic market?

- A. many firms
- B. one firm
- C. homogeneous products
- D. differentiated products
- E. A and D are correct.**

\*36. The figure shows cost curves of a profit-maximizing firm in a competitive market. If the market price of the product is \$3.25, what is the firm's profit?

- A. \$1200**
- B. \$2100
- C. \$2700
- D. \$3900
- E. None of the above



37. A good which is excludable but non-rival is a \_\_\_\_\_.
- A. private good
  - B. common pool resource
  - C. club good**
  - D. public good
38. Consumers buy fewer tubes of Crest toothpaste when the price of Colgate toothpaste goes down. Crest and Colgate toothpaste are \_\_\_\_\_.
- A. complementary products.
  - B. substitute products**
  - C. inferior goods
  - D. normal goods
39. A binding price floor results in \_\_\_\_\_.
- A. a surplus in the market**
  - B. a shortage in the market
  - C. the domestic price being equal to the world price
  - D. more of the good being demanded in the market than being supplied
40. A shift in the supply curve of oranges could be explained by what factor(s)?
- A. a change in the price of oranges
  - B. new harvesting technology
  - C. a freeze that damages the orange crop
  - D. B and C**
  - E. A, B and C
- \*41. If demand is price elastic, what happens to total revenue when price decreases.
- A. total revenue increases**
  - B. total revenue decreases
  - C. total revenue stays the same
  - D. there is not enough information given to answer the question

Use the following information to answer questions 42-43.

Lbs. of Fertilizer Applied Per Acre	Yield of Feed Grain in bushels per acre	Cost of fertilizer per acre	Marginal Cost	Marginal Revenue
60	43	30	\$ 1.43	\$ 8.60
80	47	40	\$ 2.50	\$ 8.60
100	50	50	\$ 3.30	\$ 8.60
120	53	60	\$ 3.33	\$ 8.60
140	54	70	\$ 10.00	\$ 8.60

42. At (or between) which level(s) of fertilizer input is revenue maximized?

- A. 120
- B. 140**
- C. between 100 and 120
- D. between 120 and 140

\*43. At (or between) which level(s) of fertilizer input is profit maximized?

- A. 120
- B. 140
- C. between 100 and 120
- D. between 120 and 140**

## Part V: Investment Analysis

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\*44. If the tractor costs \$100,000 (also the loan amount), and the 10 percent loan will be paid back in 5 equal annual payments, what will the annual payment be?

- A. \$6209.21
- B. \$20,000.00
- C. \$26,379.74**
- D. \$30,000

**Use the following information to answer questions 45-48.**

Suppose a farmer takes out a loan for \$25,000. The bank will provide a five-year loan at a 4% interest rate with an annual payment of \$5,615.68. The payments are due in annual installments. The bank allowed zero percent down.

	Interest Paid This Period	Principal Paid This Period	Balance Remaining
0			\$25,000
1	\$1,000.00	\$4,615.68	\$20,384.32
2	(Q46)	\$4,800.30	\$15,584.02
3	\$623.36	\$4,992.32	(Q47)
4	\$423.67	\$5,192.01	\$5,399.69
5	\$215.99	\$5,399.69	\$0.00

\*45. What is the total interest paid over the life of the loan?

- A. \$5000.00
- B. \$3846.15
- C. \$3078.40**
- D. \$2661.99
- E. None of the above.

\*46. What is the interest paid in Year 2?

- A. \$184.32
- B. \$376.64
- C. \$815.38**
- D. \$811.68
- E. None of the above.

- \*47. What is the remaining balance in Year 3?
- A. \$14,960.70
  - B. \$10,591.70**
  - C. \$10,491.90
  - D. \$0
  - E. None of the above.
48. What is the total annual payment in Year 4?
- A. \$5,615.68**
  - B. \$5,399.69
  - C. \$5,192.67
  - D. \$4,992.32
  - E. None of the above.
49. If all else was kept the same, what would happen if the length of a loan was extended by three years (from five years to eight years)?
- A. The amount of money borrowed would have to change.
  - B. The annual payment would be higher.
  - C. The amount of interest paid over the life of the loan would increase.**
  - D. The amount of interest paid over the life of the loan would decrease.
50. When considering how much a future sum of money is worth in today's dollars, one uses the concept of \_\_\_\_\_.
- A. compounding
  - B. discounting**
  - C. internal rate of return
  - D. amortization
51. Suppose a beef producer wants to expand their business by adding a USDA inspected slaughterhouse. What would the most likely source of collateral the producer could put up for the addition of the slaughterhouse facility.
- A. feeder cattle produced on the farm
  - B. the beef producer's personal home
  - C. the land the slaughterhouse is being built on**
  - D. brood cows
- \*52. When you retire, you want to have a million dollars saved. If you plan to retire in 40 years, and you can receive 5% interest annually on a savings account, what is the fixed amount you have to save each year?
- A. \$25,000.00
  - B. \$23,809.50
  - C. \$8,278.16**
  - D. \$7102.28

\*53. You are considering a herd improvement project that will cost \$7,000, but yield year-end cash returns of: \$2,000, \$2,500, and \$3,000 in the following three years. Assuming a 7% discount rate, what is the Net Present Value (NPV) of this investment?

- A. \$500.00
- B. \$9.35
- C. -\$498.35**
- D. -\$877.76

\*54. You have just graduated from college and want to start your own farm. You have three potential options: (1) a cow/calf operation, (2) grow your own crops, or (3) a feed lot where you finish cattle. All three require an investment of \$100,000. The resulting profits for each option are given in the table below.

	<u>Option 1</u> <u>Cow/Calf</u>	<u>Option 2</u> <u>Grow your</u> <u>own crops</u>	<u>Option 3</u> <u>feedlot</u>
Year 1	\$15,000	\$45,000	\$30,000
Year 2	20,000	40,000	30,000
Year 3	30,000	35,000	30,000
Year 4	35,000	15,000	30,000
Year 5	55,000	15,000	30,000

Which option would you chose if you were using the payback period method?

- A. Option 1
- B. Option 2**
- C. Option 3
- D. None of the options would be chosen based on the payback period method.

## PART VI – Risk Management

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55. \_\_\_\_\_ is an example of risk transfer.
- A. installing a dry hydrant
  - B. hedging**
  - C. testing for food-borne pathogens
  - D. A and C
56. Which of the following is an example of a financial risk facing poultry operations.
- A. changes in consumer tastes and preferences
  - B. a new strain of avian influenza emerges
  - C. a change in interest rates**
  - D. a fire damages a poultry processing plant
  - E. none of the above are financial risks facing poultry operations
57. Drought is an example of \_\_\_\_\_ risk.
- A. market
  - B. human
  - C. financial
  - D. legal
  - E. production**
58. Assume that the following current ratios are given for five farms. Based solely upon these ratios, which farm is at the least financial risk?
- A. 0.9
  - B. 1.3
  - C. 2.1**
  - D. 1.9
  - E. 0.7
59. One problem with enterprise diversification is/are \_\_\_\_\_.
- A. diseconomies of scale
  - B. diseconomies of scope
  - C. economies of scale
  - D. economies of scope
  - E. A and B are correct.**

60. By adding a pumpkin patch and corn maze to a crop farm, a producer becomes more \_\_\_\_\_.
- A. diversified.**
  - B. motivated.
  - C. specialized.
  - D. concentrated.
  - E. unfocused
61. Renting farmland for set cash prices rather than a share of the crop involves:
- A. less risk for both the landlord and tenant.
  - B. more risk for both the landlord and tenant.
  - C. less risk for the landlord, more risk for the tenant.**
  - D. more risk for the landlord, less risk for the tenant.
62. For high frequency and high severity risks, the best strategy is\_\_\_\_\_.
- A. risk minimization
  - B. hedging
  - C. risk avoidance**
  - D. becoming more risk neutral
  - E. setting aside funds to pay for any losses that may occur
63. Revenue protection coverage protects against
- A. a decline in price only
  - B. a decline in yield only
  - C. a decline in price or yield**
64. If a barn were damaged by high winds, which of the following types of insurance would compensate a producer for damages to their facility?
- A. A Life Insurance Policy
  - B. An Umbrella Property Insurance Policy
  - C. A Commercial Liability Insurance Policy
  - D. A Commercial Property Insurance Policy**
  - E. None of the above are appropriate types of insurance for this scenario



## PART VII– Marketing

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65. Produce is shipped CIF (Cost, Insurance, Freight) from South America to the U.S. Upon arrival in the U.S., the buyer pays the full price for the shipment but determines there is a deterioration in produce quality. Who is liable for the damaged produce?
- A. shipping company
  - B. the captain of the ship which the goods arrived
  - C. buyer
  - D. seller**
- \*66. Suppose you are a producer of crude oil. The price of oil on the spot market today is \$75 per barrel and you expect to produce 1 million barrels of oil that will be ready for delivery in 1 year. The one-year oil futures contract is currently price at \$78 per barrel and each contract contains 1000 barrels. If you expect the cash price of oil to fall over the next year you should\_\_\_\_\_.
- A. wait and sell oil in the spot market next year
  - B. sell 1 oil futures contract.
  - C. sell 1000 oil futures contracts**
  - D. buy 1000 oil futures contracts
67. Compared to free trade, import tariffs generally have what effect on the domestic price?
- A. no change
  - B. increase**
  - C. decrease
68. Suppose you purchase a \$3.50 July Wheat Put for 15 cents a bushel. The strike price is \_\_\_\_\_ and the premium is \_\_\_\_\_.
- A. \$3.50, \$0.15**
  - B. \$3.35, \$0.15
  - C. \$3.50, \$3.35
  - D. \$3.65, \$0.15
69. A producer who suspects that corn markets will be bullish over the coming year thinks corn prices will \_\_\_\_\_.
- A. decrease
  - B. stay the same
  - C. increase**
  - D. fall below the 3-year average

70. A decrease in the exchange rate for the US dollar causes goods produced in the US to become \_\_\_\_\_.
- A. less expensive for consumers abroad.**
  - B. more expensive for consumers abroad.
  - C. less expensive for U.S. consumers.
  - D. more expensive for U.S. consumers.
71. All other factors being equal, large carryover stocks will tend to have what effect on a commodity's price?
- A. No effect on commodity price
  - B. increase commodity price
  - C. decrease commodity price**
  - D. increase storage price
72. USDA uses a classified milk pricing formula for each of the 4 product categories based on end use. What product category is associated with a Class IV milk price?
- A. Fluid/beverage milk
  - B. Soft/manufactured dairy products (e.g., yogurt, ice cream)
  - C. Most cheeses
  - D. Butter and dry products (e.g., non-fat dry milk)**
73. An increasing cash price relative to the futures price is known as \_\_\_\_\_.
- A. strengthening basis.**
  - B. weakening basis.
  - C. under basis.
  - D. basis risk.
74. An inferior good is a good whose quantity demanded \_\_\_\_\_ as in individual's income \_\_\_\_\_.
- A. decreases, decreases
  - B. increases, increases
  - C. increases, decreases
  - D. decreases, increases**
75. A producer who suspects that stock markets will be bullish in the coming year thinks prices will \_\_\_\_\_.
- A. increase.**
  - B. decrease.
  - C. fall below a three-year average.
  - D. A and C