Land, Labor, Capital and Machinery

A. Circle the best answer. You may put a box around your second choice. (4 pts. each)

1. The ability of a farm business to meet all its cash expenses and other payments on time is called:
   a. liquidity
   b. solvency
   c. profitability
   d. efficiency

2. The largest proportion of farmland sold in Iowa is purchased by:
   a. beginning farmers
   b. existing farmers
   c. nonfarm investors
   d. retired farmers

3. The index used to rate the productivity of farmland in Iowa is called:
   a. the Discount Rate
   b. the Yield Potential Index
   c. the Soil Fertility Index
   d. the Corn Suitability Rating

4. Under which type of lease does the tenant bear the most price and yield risk?
   a. fixed cash rent lease
   b. custom farming contract
   c. 50-50 crop share lease
   d. flexible cash rent lease

5. An example of restructuring debt to improve cash flow is:
   a. rolling over the remaining balance of an operating loan into the following year
   b. reducing the interest rate on an operating line of credit
   c. converting the remaining balance of an operating loan to a 5-year amortized loan
   d. increasing the collateral for an operating loan to include machinery
6. Which of the following farm lenders will guarantee loans made by another lender?
   a. Farm Service Agency
   b. Farm Credit Services
   c. Commodity Credit Corporation
   d. Private Banks

7. Which of the following employee bonus plans would most effectively reward a swine farrowing house manager for above average work performance?
   a. $1.50 for each pig weaned over 16.0 pigs per sow per year
   b. $1.00 for each market hog that yields over 53% lean cuts, when it is sold
   c. $100 times the average price of hogs each year
   d. $100 for each year worked on the farm, paid in December

8. The greatest change in farm labor in the U.S. Midwest in the last decade has been:
   a. less use of hired employees
   b. more employees have been born outside the U.S.
   c. farm wages have risen dramatically
   d. the value of bonuses paid now exceeds the value of benefits provided

9. In a custom farming agreement, the custom operator provides or pays for all the following except:
   a. labor
   b. seed and fertilizer
   c. fuel and lubrication
   d. machinery depreciation

10. Which of the following financial measures is not affected by how much of the farm’s capital is borrowed?
    a. Return on Assets (ROA)
    b. Return on Equity (ROE)
    c. Debt-to-Asset Ratio
    d. Current Ratio

11. In an installment contract to purchase a farm:
    a. loan funds are supplied by a bank or Farm Credit Services
    b. the purchase price is often lower than with a sale financed with a conventional loan
    c. the buyer makes payments directly to the seller over a period of time
    d. the buyer and seller are usually related to each other
12. List and explain briefly three ways that a farm with a high debt load could improve its liquidity (cash flow) situation. (6 pts)

a.

b.

c.

13. What advantages are there for a farm operator to purchase used machinery instead of new? (3 pts.)

14. What advantages are there to purchasing new machinery instead of used? (3 pts.)

15. List three important practices to remember when you are interviewing an applicant for a farm employee position. (6 pts.)

a.

b.

c.
16. Using the sorghum budget at the bottom of this page, estimate a fair cash rent using each of the following approaches. Show your work for each one.

a. cash rent is equal to 25% of gross income (3 pts)

\[ \text{Cash Rent} = \frac{25}{100} \times \text{Gross Income} \]

\[ \text{Cash Rent} = \frac{25}{100} \times 170.00 = 42.50 \]

b. cash rent (maximum) equal to tenant’s profit after all costs except land are paid. (3 pts)

\[ \text{Cash Rent} = \text{Profit} \]

\[ \text{Profit} = 104.30 \]

c. cash rent that would give the landowner the same return as a crop-share lease in which the landowner receives 30% of the gross income and pays 30% of all seed, fertilizer, herbicide and insecticide. (3 pts)

\[ \text{Cash Rent} = \frac{30}{100} \times \text{Gross Income} \]

\[ \text{Cash Rent} = \frac{30}{100} \times 170.00 = 51.00 \]

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Sorghum after wheat (North Texas) – 1 acre

<table>
<thead>
<tr>
<th>Gross Income</th>
<th>Quantity</th>
<th>$/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorghum</td>
<td>40 cwt.</td>
<td>$3.60</td>
<td>$144.00</td>
</tr>
<tr>
<td>USDA payment</td>
<td></td>
<td></td>
<td>26.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$170.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable Costs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer (10-34-0)</td>
<td>150 lb.</td>
<td>$ .11</td>
<td>$16.50</td>
</tr>
<tr>
<td>Fertilizer (82-0-0)</td>
<td>100 lb.</td>
<td>$ .11</td>
<td>$11.00</td>
</tr>
<tr>
<td>Herbicide (pre-emerge)</td>
<td></td>
<td></td>
<td>$11.10</td>
</tr>
<tr>
<td>Insecticide</td>
<td></td>
<td></td>
<td>16.25</td>
</tr>
<tr>
<td>Seed sorghum</td>
<td>7 lb.</td>
<td>$ .85</td>
<td>5.95</td>
</tr>
<tr>
<td>Machinery, fuel, lube, repairs</td>
<td></td>
<td></td>
<td>10.50</td>
</tr>
<tr>
<td>Custom harvest and hauling</td>
<td></td>
<td></td>
<td>23.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$94.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Costs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor and management</td>
<td>1.6 hr.</td>
<td>$10.00</td>
<td>$16.00</td>
</tr>
<tr>
<td>Machinery ownership</td>
<td></td>
<td></td>
<td>24.70</td>
</tr>
<tr>
<td>Land</td>
<td></td>
<td></td>
<td>25.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$65.70</td>
</tr>
</tbody>
</table>

**Profit**

\[ \text{Profit} = 104.30 \]
17. A purchaser of farmland took out a loan of $100,000 and promised to repay it in 25 annual payments at 7.5% annual interest on the outstanding balance. How much would the first payment be under each of the following repayment plans? The amortization factor for a 25-year loan at 7.5% annual interest is 0.0897. (12 pts.)

<table>
<thead>
<tr>
<th>Plan</th>
<th>Principal</th>
<th>Interest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Equal total payments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Equal principal payments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Equal principal payments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with 40% of the loan due</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>as a final balloon payment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. Name and describe one important Federal law that affects hired farm employees. (4 pts.)
19. Below are the totals from a farm’s last net worth statement and net income statement.

<table>
<thead>
<tr>
<th>Net Worth</th>
<th>(Market Values)</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>$100,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Intermediate</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Long-term</td>
<td>200,000</td>
<td>80,000</td>
</tr>
<tr>
<td>Total</td>
<td>$400,000</td>
<td>$240,000</td>
</tr>
<tr>
<td>Net worth</td>
<td></td>
<td>$160,000</td>
</tr>
</tbody>
</table>

**Net Income**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross farm income</td>
<td>$248,000</td>
</tr>
<tr>
<td>Interest expense</td>
<td>20,000</td>
</tr>
<tr>
<td>All other expenses</td>
<td>180,000</td>
</tr>
<tr>
<td>Net farm income</td>
<td>$48,000</td>
</tr>
<tr>
<td>Value of unpaid labor</td>
<td>$24,000</td>
</tr>
</tbody>
</table>

Using the statements above, calculate the following (show your work): (12 pts.)

a. Working Capital
   $________________

b. Debt-to-Asset Ratio
   __________________

c. Return on Equity (ROE)
   _____________%

d. Return on Assets (ROA)
   _____________%
1. A
2. B
3. D
4. A
5. C
6. A
7. A
8. B
9. B
10. A
11. C
12. Improve nonfarm income; reduce nonfarm expenses
   Restructure debt
   Reduce current inventories
   Sell excess capital assets, pay off debt
   Improve profitability
   Declare bankruptcy
   Have a credit reserve
   FSA guarantee
13. Lower initial investment cost
    Less depreciation and interest
    Know history
14. Lower repair costs
    Newer technology
    Less risk of breakdowns
    Higher resale value
    Longer life
15. a. Ask open-ended questions, not “yes” or “no”
    Have applicant’s resume available
    b. Avoid questions about race, religion, age, gender
    Avoid disruptions (telephone, etc.)
    c. Remember applicant’s name
16. a. $170 \times .25 = 42.50$
    b. $170 - 94.30 - 16.00 - 24.70 = 35.00$
    c. $170 \times .30 = 51.00$
    \[ \begin{align*}
    \text{rent} & = 60.80 \times .30 = -18.24 \\
    & = 32.76 \\
    & (or) \ 170 \times .7 = 119.00 \\
    \text{rent} & = 60.80 \times .7 = -42.56 \\
    & = 33.50 \\
    & = 40.70 \\
    $ & = 2.24 \text{ profit}
    \end{align*} \]
    $170.00$
    - 94.30
    - 40.70
    $ = 2.24$
    $32.76 \text{ rent}$
17. Plan

<table>
<thead>
<tr>
<th>Plan</th>
<th>Principal</th>
<th>Interest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Equal total payments</td>
<td>$1,470</td>
<td>$7,500</td>
<td>$8,970</td>
</tr>
<tr>
<td>b. Equal principal payments</td>
<td>$4,000</td>
<td>$7,500</td>
<td>$11,500</td>
</tr>
<tr>
<td>c. Equal principal payments with 40% of the loan due as a final balloon payment</td>
<td>$2,400</td>
<td>$7,500</td>
<td>$9,900</td>
</tr>
</tbody>
</table>

18. Child Labor Laws
   Immigration Laws
   Minimum Wage Laws
   Withholding for Income Tax, Social Security, Unemployment
   OSHA
   Worker’s Compensation
   Americans with Disabilities Act

19.  
   a. Working Capital $100,000 – $60,000 = $40,000
   b. Debt-to-Asset Ratio \( \frac{240,000}{400,000} \) = .60 or 60%
   c. Return on Equity (ROE) \( \frac{NFI - Unpaid \ Labor}{Net \ Worth} \) = \( \frac{($48,000 - 24,000)}{160,000} \) = 15%
   d. Return on Assets (ROA) \( \frac{NFI + Interest - Labor}{TA} \) = \( \frac{(48,000 - 24,000 + 20,000)}{400,000} \) = 11%