EXAM 1 — Planning and Budgeting

Multiple Choice:
Circle the best answer. Put a box around your second choice (half credit), if you wish. (4 points each)

1. Evaluating the physical and human resources that a farm business possesses is called:
   a. goal setting.
   b. internal scanning.
   c. external scanning.
   d. writing a mission statement.

2. Which of the following defines a farming enterprise?
   a. Quality Citrus, Inc., which produces oranges and grapefruit.
   b. Spraying soybeans for aphids.
   c. Repairing golf carts.
   d. Growing long-staple cotton in the high plains of Texas.

3. If costs for storing grain are not included in an enterprise budget, then the selling price used should be based on:
   a. the expected cash price for delivery at harvest time.
   b. the actual cash price at the time the budget is prepared.
   c. the futures market price for a contract that expires six months after harvest.
   d. the expected cash price 9 months after harvest.

4. A swine farrowing operation that replaces 25 percent of its breeding herd each farrowing period, by buying replacement gilts at a cost of $160 each, should include in its enterprise budget:
   a. a cost for replacement gilts of $160 per litter.
   b. a cost for replacement gilts of $40 per litter.
   c. a reduction in pigs sold of .25 head per litter.
   d. no cull sow sales.
5. Marginal revenue is defined as:
   a. the value of the marginal product.
   b. the selling price of the product.
   c. the added cost of using more of an input.
   d. total revenue divided by total product.

6. Variable costs are those costs that:
   a. change from year to year.
   b. change from farm to farm.
   c. are paid in cash.
   d. change in direct proportion to the number of units of an enterprise that are carried out.

7. Which of the following would be included in a cash flow budget but not in a whole farm budget?
   a. depreciation.
   b. labor requirements.
   c. family living expenses.
   d. opportunity cost of the operator’s labor.

8. The main purpose of a cash flow budget is to:
   a. project the net farm income of a farming operation for the coming year.
   b. develop a plan that will allow a farming operation to achieve a positive cash balance each month.
   c. project the break-even selling prices for the major commodities a farming operation sells.
   d. determine which crops will be most profitable for the coming year.

9. A partial budget includes only:
   a. operating costs.
   b. opportunity costs.
   c. sunk costs.
   d. costs that would change if a certain alternative is carried out.

10. When analyzing a long-term investment decision, the interest cost of a capital asset purchase should be based on:
    a. the beginning purchase cost.
    b. the expected salvage value at the end of its ownership period.
    c. an average of the purchase cost and the salvage value.
    d. one-half the purchase cost.
11. Why is interest on money invested in operating costs included in an enterprise budget even when the farm operator doesn’t have to borrow any money? (5 points)

12. a. Name one major trend that you think may take place in U.S. agriculture over the next 25 years. (2 points)

b. Describe how you think a good farm manager will respond to this trend? (5 points)

13. What are the four categories of costs and revenue that are used in a partial budget? (4 points)

<table>
<thead>
<tr>
<th>Category of Costs or Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>
## Cow-Calf Budget
### Spring Calving, Sell at 225 days of age

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity/Unit</th>
<th>Price Per Unit</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receipts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeder Calf Sale</td>
<td>425 lb</td>
<td>$80/cwt.</td>
<td>$92</td>
</tr>
<tr>
<td>Cull Cows and Bulls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Receipts</strong></td>
<td></td>
<td></td>
<td>$92</td>
</tr>
<tr>
<td><strong>Variable Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pasture (Hay Equiv)</td>
<td>2.6 ton</td>
<td>$15/ton</td>
<td>$39</td>
</tr>
<tr>
<td>Hay (grass)</td>
<td>3 ton</td>
<td>$60/ton</td>
<td>180</td>
</tr>
<tr>
<td>Salt &amp; Mineral</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Feed Costs</strong></td>
<td></td>
<td></td>
<td>$225</td>
</tr>
<tr>
<td>Health Program</td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Supplies &amp; Misc.</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Int. on Operating Capital</td>
<td>$135 12mo</td>
<td>9%</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Variable Costs</strong></td>
<td></td>
<td></td>
<td>$281</td>
</tr>
<tr>
<td><strong>Fixed Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Charge</td>
<td>8 hours</td>
<td>$7.50/hr.</td>
<td>$60</td>
</tr>
<tr>
<td>Cow Replacement</td>
<td></td>
<td></td>
<td>120</td>
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<tr>
<td>Bull Replacement</td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Int. on Breeding Stock</td>
<td>$591</td>
<td>9%</td>
<td>53</td>
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<tr>
<td>Fence &amp; Facilities</td>
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<td>37</td>
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<tr>
<td>Management Charge</td>
<td></td>
<td>5% of gross revenue</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total Fixed Costs</strong></td>
<td></td>
<td></td>
<td>$305</td>
</tr>
<tr>
<td><strong>Total Costs</strong></td>
<td></td>
<td></td>
<td>$586</td>
</tr>
</tbody>
</table>

### 14. Show the following values for the cow-calf enterprise budget above. Some values will have to be calculated. (10 points)

- a. Gross revenue: $__________
- b. Gross margin: $__________
- c. Profit: $__________
- d. Net income (assume management, labor and operating capital are supplied by the operator): $__________
- e. Break-even selling price needed for the feeder calf, to pay total costs: $__________ per cwt.

### In the short run, would you recommend that this producer continue this enterprise? Explain your answer. (4 points)
You are considering investing in a new no-till soybean drill and doing custom machinery work. Here is the information you have gathered:

- Purchase cost of the new drill: $25,000
- Years you expect to own it: 8
- Expected salvage value after 8 years: $9,000
- Amount you can borrow at 8% annual interest: $20,000
- Down payment from your savings account: $5,000 (that is earning 3% annual interest)
- Estimated annual repair costs/acre: $2.50
- Estimated fuel and lubrication costs/acre: $0.75
- Your expected acres to drill: 800
- Acres drilled per hour: 8 acres/hour

Calculate the following (show your work): (2 points each)

a. Interest cost the first year
   $________________________

b. Average depreciation cost each year owned
   $________________________

c. Insurance and taxes (1% of current value)
   $________________________

d. Repairs (annual cost)
   $________________________

e. Fuel and lubrication (annual cost)
   $________________________

f. Labor cost @ $10 per hour of field time
   $________________________

g. How much should you charge your customers to just pay your average total cost per acre? Disregard tractor ownership costs.
   $________________________ per acre

h. If the standard rate was only $8.50 per acre for drilling someone else’s soybeans, how many acres would you have to drill to just break even on your total costs? Assume depreciation cost is fixed and labor cost is variable.
   ________________________ acres

(4 points)
16. Which type of budget would be most useful for analyzing each of the following decisions? (12 points)

Indicate your answer by:
WF — whole farm
CF — cash flow
E — enterprise
P — partial

_________ How large should your operating loan request to your lender be this spring?

_________ Would it be profitable to own your own semi truck for hauling corn and soybeans to market?

_________ Is your family farm large enough to fully employ you after you graduate from ISU?

_________ Which is the best month to have a large land loan payment come due?

_________ How much would your farm profit change if you cash rented an additional 240 acres?

_________ How much would your gross margin per acre be, if you grew seed corn on the extra land?
1. B  
2. D  
3. A  
4. B  
5. A  
6. D  
7. C  
8. B  
9. D  
10. C  

11. There is an opportunity cost of interest income that could have been earned on funds that were used to pay operating costs.  

12. a. More differentiation of products, higher food safety standards, etc.  
   b. Assess threats and opportunities relative to skills and resources of the business.  

13. Added revenue, reduced revenue, added costs and reduced costs.  

14. a. $425 \text{ lb.} \times \$80/\text{cwt.} = \$340$  
    \[ 340 + 92 = \$432 \]  
   b. $\$432 - 281 = \$151$  
   c. $\$432 - 586 = (\$154)$  
   d. $(\$154) + 12 + 60 + 22 = (\$60)$  
   e. $(\$586 - 92) / 425 \text{ lb.} = \$1.16/\text{lb}$  
    \[ \times 100 \text{ lb/cwt.} \]  
    \[ = (\$116 \text{ per cwt.}) \]  

Yes, he is covering variable costs.  

15. a. $(\$20,000 \times 8\%) + (5,000 \times 3\%) = \$1,750$  
    b. $(\$25,000 - 9,000) / 8 \text{ years} = \$2,000$  
    c. $1\% \times \$25,000 = \$250$  
    d. $\$2.50 \times 800 \text{ acre} = \$2,000$  
    e. $.75 \times 800 \text{ acre} = \$600$  
    f. $\$10 \times 800 \text{ acre} / 8 \text{ acre/hr.} = \$1,000$  
    g. $(\$1,750 + 2,000 + 250 + 2000 + 600 + 1000) / 800 = \$9.50 \text{ per acre}$  
    h. Fixed costs $(1,750 + 2000 + 250) = \$4000$  
    Variable costs $(2,000 + 600 + 1,000) / 800 = \$4.50/\text{acre}$  
    $\$4,000 + \$4.50 \text{ A} = \$8.50/\text{A}$  
    4.00 A = 4,000  
    A = 1000 acres  
    \[ 1,000 \text{ acres} \]  

16. CF, P, WF, CF, P, E