The exam is due at the beginning of class on Monday, March 1.

**Academic Integrity Statement**

1. All work on this exam is to be done on an individual basis.
2. You may not work on this exam in groups nor are you allowed to compare answers.
3. By signing this statement, you agree that you have adhered to these stipulations.

________________________
Student Signature

NB: Real companies are designated as [real].
MULTIPLE CHOICE (3 points each) — Circle the correct answer:

1. Managerial accounting:
   a. measures, analyzes and reports financial and nonfinancial information to help managers make decisions to fulfill organizational goals.
   b. primarily provides information about the company as a whole.
   c. reports information that has occurred in the past that is verifiable and reliable.
   d. may provide information to external users, like stockholders.
   e. always conforms to GAAP.

2. Which of the following would be the correct order of business functions in the value chain?
   a. Research and development, delivery, product design.
   b. Customer relations, research and development, product design.
   c. Production, delivery, customer relations.
   d. Production, sales and marketing, delivery.
   e. Delivery, sales, customer relations.

3. When Federal Express [real] was started as an overnight letter/package delivery service, what was the primary customer need they fulfilled?
   a. Cost
   b. Quality
   c. Timely response
   d. Innovation
   e. None of the above.

4. Which of the following statements about the cost-benefit approach is most accurate?
   a. Costs should always be minimized.
   b. In a cost-benefit analysis, both costs and benefits are easy to obtain.
   c. Resources should be spent if the costs of a decision outweigh the benefits of the decision.
   d. A cost-benefit approach would not be appropriate for a decision to install an accounting system or not.
   e. Resources should be spent if they are expected to better attain company goals in relation to the expected costs of these resources.

5. A fixed cost for an automobile manufacturing plant would most likely be
   a. administrative salaries.
   b. electricity used by assembly-line machines.
   c. sales commissions.
   d. windows for each car produced.
   e. paint for car finishes.
6. The band of normal activity level (or volume) in which there is a specific relationship between the level of activity (or volume) and a given cost is the
   a. cost accumulation.
   b. cost allocation.
   c. cost driver range.
   d. relevant range.
   e. conversion cost.

7. Orange Inc. produces iSpeakers to be used with iPods. Which of the following is an example of a product-level activity for Orange Inc.?
   a. Costs of indirect materials.
   b. Insurance for the manufacturing plant.
   c. Designing the production process.
   d. Depreciation on manufacturing equipment.
   e. The cost of placing a purchase order.

8. Iowa Utility Company charges its high-usage commercial customers a lower rate per kilowatt-hour than other customers. This is an example of
   a. predatory pricing.
   b. price discrimination.
   c. a skimming strategy.
   d. peak-load pricing.
   e. penetration pricing.

9. In the article “How would you like your Ford,” one of the initiatives that Ford Motor Company [real] implemented as a cost savings measure was to
   a. renegotiate the price they paid for components from their suppliers.
   b. reduce compensation of executive management.
   c. purchase more components from overseas manufacturers.
   d. streamline flow of components from their subcontractors to Ford’s assembly line.
   e. reduce the number of different models they produce.

10. In the Prestige Telephone Case, all of the following would be reasonable recommendations to the management of the company except for:
    a. Increase promotion spending. ☐
    b. Restructure the managerial accounting reports of Prestige Data Services to include the foregone revenues as a result of the lower billing rate to Prestige Telephone Company ☐
    c. Prepare managerial accounting reports that separate out variable vs. fixed costs. ☑
    d. Continue to operate the Prestige Data Services subsidiary. ☑
    e. Increase the price of date services to external customers to $1,000 per hour. ☑
**PROBLEM 1** – Alberta Company manufactures wave runners. They are planning to introduce a new model, the Extreme Wave Runner. They will need to invest $4.2 million to produce the Extreme Wave Runner and management requires a 25% return on investment. They expect to sell 1,000 of them in the first year. The accounting department provided the following estimated costs for this level of volume:

<table>
<thead>
<tr>
<th>Per unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$840</td>
</tr>
<tr>
<td>Direct labor</td>
<td>1,600</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>400</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td></td>
</tr>
<tr>
<td>Variable selling and administrative costs</td>
<td>510</td>
</tr>
<tr>
<td>Fixed selling and administrative costs</td>
<td></td>
</tr>
</tbody>
</table>

**Required:**

a. Alberta Company uses cost-plus pricing to set its selling price. What is the target selling price and markup percentage for the Extreme Wave Runner?

\[ \text{Inverted capital} = \frac{4.2 \text{ mill}}{1.25} = 3.33 \text{ mill} \]

\[ \text{Target ROI} = 25\% \]

\[ \text{Target annual profit} = 1,050,000 \]

\[ \text{Target at per unit} = 1,050 \]

\[ \frac{1,050}{4210} \times 25 = 25\% \] markup

\[ \frac{5260}{4210} \rightarrow \text{selling price} \]

b. What is a disadvantage of using the cost-plus pricing method? Provide an example.

Disadvantage: Tends to ignore the role of the consumer

Example: Suppliers who provide unique products and services like accountants, management consultants can use cost-plus because of its simplicity. However, the "plus" is determined by the market.
PROBLEM 2 – Nova Scotia Inc. manufactures rustic furniture. The cost accounting system estimates manufacturing costs to be $80 per table, consisting of 70% variable costs and 30% fixed costs. The company has surplus capacity available. It is Nova Scotia’s policy to add a 50% markup to full costs. A large hotel chain is building a new hotel and has decided to decorate the new hotel using a rustic style. Nova Scotia Inc. is invited to bid on a one-time-only special order to supply 200 rustic tables.

a. What is the lowest price per table that Nova Scotia Inc. should bid on this one-time-only special order?

\[
\text{Any price above } \$56 \rightarrow \text{because the company has surplus capacity available and we do not have any information about competitors' price.}
\]

b. What are two factors that any company should consider when pricing special orders?

- The relevant costs for this decision
- Whether the company has excess capacity. If excess capacity exists, the price should consider costs that will contribute to paying fixed costs and profit.
**PROBLEM 3** – Manitoba Inc. had the following activities during 2009:

- Direct materials:
  - Beginning inventory $40,000
  - Purchases 123,200
  - Ending inventory 20,800
  - Direct manufacturing labor 32,000
  - Indirect manufacturing labor 15,000
  - Factory depreciation 9,000
  - Selling and administrative expense 12,000
  - Beginning work-in-process inventory 1,600
  - Ending work-in-process inventory 8,000
  - Beginning finished goods inventory 48,000
  - Ending finished goods inventory 32,000

a. What is the cost of direct materials used?

```
DIRECT MATERIALS:

  BEGIN INVENTORY  $40,000
  PURCHASE DM 123,200
  COST TO USE 163,200
  ENDING INVENTORY 20,800

DM USED 142,400
```

b. What is cost of goods manufactured?

```
DM 142,400
DL 32,000
MFG Indirect 15,000
Indirect dep 9,000
     = 24,000

MFG costs
BEG WIP 198,400
TOTAL MFG costs 200,000
EWD WIP 8,400

192,000

Cost of goods manufactured
```
c. What is cost of goods sold?

\[
\begin{align*}
\text{Cost of Goods Sold} &= \text{Beginning Finished Goods} + \text{Cost of Manufacture} - \text{Cost of Goods Available for Sale} - \text{Ending Finished Goods} \\
&= 192,000 + (192,000) - 240,000 - (32,000) \\
&= 208,000 - 280,000 \\
&= 20,000
\end{align*}
\]

$20,000$ is the cost of goods sold.

d. What amount of prime costs was added to production?

\[
\text{Prime Costs} = \text{DM} + \text{Direct Manufacture Labor}
\]

\[
142,400 + 32,000 = 174,400
\]

e. What amount of conversion costs was added to production?

\[
\text{Conversion Costs} = \text{Direct Manufacture Labor} + \text{Overhead}
\]

\[
32,000 + 24,000 = 56,000
\]
PROBLEM 4 – Quebec Corporation manufactures two products, Standard and Enhanced, and currently applies overhead on the basis of direct-labor hours. Budgeted overhead and direct-labor hours for the next fiscal year are $800,000 and 25,000 hours, respectively. Information about the company's products follows:

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated production volume</td>
<td>3,000 units</td>
<td>4,000 units</td>
</tr>
<tr>
<td>Direct material cost</td>
<td>$25 per unit</td>
<td>$40 per unit</td>
</tr>
<tr>
<td>Direct labor per unit</td>
<td>$36</td>
<td>$48</td>
</tr>
</tbody>
</table>

$3 hours at $12 per hour $48 4 hours at $12 per hour

Quebec Corporation’s overhead of $800,000 can be identified with three major activities: order processing ($150,000), machine processing ($560,000), and product inspection ($90,000). These activities are driven by number of orders processed, machine hours worked, and inspection hours, respectively. Data relevant to these activities are:

<table>
<thead>
<tr>
<th></th>
<th>Orders</th>
<th>Machine</th>
<th>Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$150,000</td>
<td>$560,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>Processed</td>
<td>300</td>
<td>18,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Hours Worked</td>
<td>200</td>
<td>22,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Total</td>
<td>500</td>
<td>40,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

Top management is very concerned about declining profitability despite a healthy increase in sales volume. The decrease in income is especially puzzling because the company recently undertook a massive plant renovation during which new, highly automated machinery was installed that was expected to produce significant operating efficiencies.

1. Assuming use of direct-labor hours to apply overhead to production, compute the unit manufacturing costs of the Standard and Enhanced products if the expected manufacturing volume is attained.

\[
\text{Overhead} = \frac{800,000}{25,000} = 32
\]

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>DL</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>OH</td>
<td>(32 x 3)</td>
<td>(4 x 32)</td>
</tr>
<tr>
<td></td>
<td>96</td>
<td>128</td>
</tr>
</tbody>
</table>

\[
\text{Standard: } \frac{157}{1} \quad \text{Enhanced: } \frac{216}{1}
\]
2. Assuming use of activity-based costing, compute the unit manufacturing costs of the Standard and Enhanced products if the expected manufacturing volume is attained.

**Standard**

\[ \text{DM} = 25 \]
\[ \text{DL} = 36 \]

Order Proc. \( \frac{(300 \times 300)}{3600} \) = 30

Machine hrs worked \( \frac{17,000 \times 14}{3000} \) = 84

Inspection \( \frac{200 \times 9}{3000} \) = 6

\[ \$ 181 \]

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**Enhanced**

\[ \text{(200 \times 300)} \]
\[ \text{(4000 \times 14)} \]
\[ \text{(200 \times 9)} \]

\[ \text{40} \]
\[ \text{48} \]
\[ \text{15} \]
\[ \text{77} \]
\[ \text{18} \]

\[ \$ 198 \]
3. Quebec Corporation’s selling prices are based heavily on cost.
   a. By using direct-labor hours as an application base, which product is overcosted and which product is undercosted?

   \[
   \text{Overcosted} \Rightarrow \text{enhanced} \\
   \text{Undercosted} \Rightarrow \text{standard}
   \]

   b. Is it possible that overcosting and undercosting and the subsequent determination of selling prices are contributing to the company's declining profits? Explain.

   No because when we calculate the revenue from pricing:

   \[
   \text{S} \Rightarrow \$157 \times E \Rightarrow \$216 \quad \text{vs} \quad \text{S} \Rightarrow \$131 \times E \Rightarrow \$192
   \]

   The revenue is the same, \$1,335,000 \Rightarrow \text{The declining profits might be due to increasing costs not accounted for profit.} \checkmark