**Chapter 1 – Weygandt Managerial 8e**

**Challenge Exercises Solutions**

**Solution**

**CE 1-1**

(a) Option A:

(a) Direct materials used = $175,575 – 46,500 – 47,000 = $82,075

(b) Work in process 1/1/20 = $197,075 – 175,575 = $21,500

(c) Work in process 12/31/20 = $197,075 – 162,844 = $34,231

Option B:

(d) Total manufacturing costs = $85,500 + 46,000 + 45,500 = $177,000

(e) Total cost of work in process = $177,000 + 21,500 = $198,500

(f) Cost of goods manufactured = $198,500 – 35,231 = $163,269

Option C:

(g) Direct labor = $178,375 – 78,050 – 47,750 = $52,575

(h) Work in process 1/1/20 = $199,875 – 178,375 = $21,500

(i) Cost of goods manufactured = $199,875 – 35,751 = $164,124

(b) Option A results in the lowest cost of goods manufactured by using moderately priced materials and reasonable labor and manufacturing overhead charges. However, the materials’ supplier does not guarantee that the materials will always be available in the quantities needed by Banta Company. This could result in slowdowns in production and missed deadlines nullifying any savings.

Option B has the highest quality materials but incurs some savings in labor and manufacturing overhead charges due to fewer quality related problems. While the cost of goods manufactured is slightly higher than Option A, the materials can be purchased locally and are readily available. This will help to ensure that there will not be production slowdowns or any missed deadlines.

Option C has the highest cost of goods manufactured. It does have significantly lower materials costs but the savings is more than negated by the significantly higher labor and slightly higher manufacturing overhead costs. Materials are available locally but the questionable quality could cause problems.

Based on the information, Option B is the best choice. While incurring a slightly higher cost of goods manufactured, the company ensures good quality products and timely production. These benefits more than overcome the slightly higher costs.

**CE 1-2**

Part a:

Williams Co.

Cost of Goods Manufacturing Schedule

For Month Ending September 30, 2020

Work in Process 9/1/20 $7,500

Direct Materials

Raw Materials Inventory 9/1/20 $12,000

Add: Raw Materials purchases 62,500

Total Raw materials available for use 74,500

Less: Raw materials inventory 9/30/20 11,300

Direct Materials Used $63,200

Direct Labor 51,000

Manufacturing Overhead

Indirect Labor 6,500

Factory Insurance 5,000

Machine Depreciation 6,000

Machine Repairs 2,800

Factory Utilities 3,600

Miscellaneous Factory Costs 1,750

Total Overhead 25,650

Total Manufacturing Overhead 139,850

Total Cost of Work in Process 147,350

Less: Work in Process 9/30/20 5,000

Cost of Goods Manufactured $142,350

Part b:

Williams Co.

Balance Sheet Presentation (partial)

September 30, 2020

Inventories:

Finished Goods $ 12,000

Work in Process 5,000

Raw Materials 11,300

Total Inventories $28,300

CE 1-2 (cont.)

Part c:

Williams Co.

Cost of Goods Manufacturing Schedule

For Month Ending September 30, 2020

Work in Process 9/1/20 $7,500

Direct Materials

Raw Materials Inventory 9/1/20 $12,000

Add: Raw Materials purchases 62,500

Total Raw materials available for use 74,500

Less: Raw materials inventory 9/30/20 11,300

Direct Materials Used $63,200

Direct Labor 30,600

Manufacturing Overhead

Indirect Labor 3,900

Factory Insurance 8,000

Machine Depreciation 12,000

Machine Repairs 500

Factory Utilities 2,500

Miscellaneous Factory Costs 1,850

Total Overhead 28,750

Total Manufacturing Overhead 122,550

Total Cost of Work in Process 130,050

Less: Work in Process 9/30/20 5,000

Cost of Goods Manufactured $125,050

Direct labor = 51,000 x 60% = 30,600

Indirect labor = 6,500 x 60% = 3,900

The purchase of the new automated assembly line lowers cost of goods manufactured by $17,300. The purchase appears to be worth the investment based on the cost of goods manufactured statement, however there are other factors that should be considered. These include (but are not limited to): overall cost savings to the company, possible expansion of production due to the new equipment, morale of employees due to the decrease in labor, potential alternative jobs for displaced employees either inside of or outside of the company, community considerations due to possible unemployment and environmental considerations. All of these should be carefully reviewed prior to making this decision.