## Applying the Concept Answers

**Applying the Concept 15-1: Level of Customer Involvement**

Identify each product by its level of customer involvement.

A. Make-to-stock

B. Assemble-to-order

C. Make-to-order

**1.** **Chocolate cream in a sugar cone at Helen’s Homemade Ice Cream.**

B. Assemble-to-order. An ice cream cone is a standard product. The ice cream in a sugar cone is a simple customized feature. The customer has to be there to order it; therefore, there is a moderate level of involvement. Some may argue that it is made to order--it’s not always easy to tell the difference.

**2. TheaterSeat Store chairs with subwoofer speakers.**

B. Assemble-to-order. When you put a subwoofer in the chair, it is assembled--or no longer made to stock.

**3. UPS delivers a package from Walmart to a customer.**

C. Make-to-order. The order has been received from the customer. Therefore, there is a high level of customer involvement in shipping it to the specific address.

**4. A Dell laptop at a Best Buy store.**

A. Make-to-stock. The smartphone is a standard product. The customer has a low level of involvement because he or she either takes the product as is or doesn’t buy it.

**5. A message at** **Cannon Ranch Resort & Spa.**

C. Make-to-order. The message is made-to-order on a specific customer. The customer has to be there, which requires a high level of involvement.

**6. A bag of Smart Food popcorn by Frito-Lay.**

A. Make-to-stock. Snack foods are standardize prepackaged items.

**Applying the Concept 15-2: Flexibility of Operations**

Identify the operations system that would be used to produce each product.

A. Continuous Process Operations

B. Repetitive Process Operations

C. Batch Process Operations

D. Individual Process Operations

E. Project Process Operations

**7. A** **Maytag washing machine built in the United States.**

B. RPO. Appliances are commonly made on an assembly line.

**8. A swimming pool installed by Teddy Bear Pools.**

E. PPO. Swimming pools are installed at the customer’s site.

**9. The asphalt delivered for the driveway at a new house.**

A. CPO. Hot top is not delivered in discrete units, it continuously flows until you fill the driveway.

**10. Packages of Kirland white, whole wheat, and rye breads.**

C. BPO. Because bread has a variety of grains that can be easily made on the same machine, it most likely baking in batches.

**11. The new library replacement Learning Commons built at Springfield College.**

E. PPO. Project process operations are used in the construction industry

**Applying the Concept 15-3: Facility Layout**

Identify the facility layout that would be used to produce each product.

A. Product

B. Process

C. Cellular

D. Fixed-position

**12.** **A man walks into a Target store to buy some t-shirts.**

B. Process. Commonly used in retail. The man would go directly to the men’s department.

**13. Meals being made at TGF restaurant.**

C. Cellular. Most restaurants use a cellular layout as it saves time when preparing food (sitting and serving are not its operations).

**14. A Camaro car being built in a GM plant.**

A. Product. Most traditional automotive plants use repetitive-process operations in which the automobiles are made on an assembly line.

**15. A lawn being mowed by A&M Landscaping.**

D. Fixed-position. The business must go to the customer to do the work.

**16. A woman comes to Yale Hospital to have an operation.**

B. Process. The women would go to the operating ward.

**Applying the Concept 15-4: Scheduling Tools**

Select the most appropriate scheduling tool for each situation.

A. Planning sheet

B. Gantt chart

C. PERT network

**17. You want a tool to schedule the making of five products on three different types of machines.**

B. Gantt chart. Gantt charts can show the progress of multiple products.

**18. You want a tool for building a new restaurant.**

C. PERT network. Building an office building requires a set sequence of relatively complex activities.

**19. You want a tool to develop a procedure for a new method of reporting accidents.**

A. Planning sheet. Planning sheets are good for developing procedures.

**20. You want to use a tool to develop procedures for opening and closing the retail store.**

A. Planning sheet. Planning sheets are good for developing procedures.

**21. You want to use a tool to schedule** **training classes in different rooms.**

B. Gantt chart. Gantt charts are good for allocating room resources to courses so you can see at a glance which rooms are being used when, why, and by which program.

**22. You want to use a tool for building a new submarine.**

C. PERT network. Building a new submarine will have both dependent and independent activities. PERT was first developed to build submarines, so that is why I use this example.

**Applying the Concept 15-5: Measuring Productivity**

The standard monthly productivity rate in your department is



For the first five months of the year, calculate the current productivity rate and show it as a ratio and a percentage. Also, calculate the percentage productivity change, compared to the standard, stating whether it is an increase or a decrease.

**23. January: outputs of 6,200, inputs of $9,000**

\_\_\_\_\_\_ ratio, \_\_\_\_\_\_%, increase/decrease of \_\_\_\_\_\_%

.69:1 ratio, 69%, **increase**/decrease of 2.99%

**24. February: outputs of 6,000, inputs of $9,300**

\_\_\_\_\_\_ ratio, \_\_\_\_\_\_%, increase/decrease of \_\_\_\_\_\_%

.65:1 ratio, 65%, increase/**decrease** of 2.99%

**25. March: outputs of 6,300, inputs of $9,000**

\_\_\_\_\_\_ ratio, \_\_\_\_\_\_%, increase/decrease of \_\_\_\_\_\_%

.70:1 ratio, 70%, **increase**/decrease of 4.48%

**26. April: outputs of 6,300, inputs of $8,800**

\_\_\_\_\_\_ ratio, \_\_\_\_\_\_%, increase/decrease of \_\_\_\_\_\_%

.72:1 ratio, 72%, **increase**/decrease of 7.46%

**27. May: outputs of 5,900, inputs of $9,000**

\_\_\_\_\_\_ ratio, \_\_\_\_\_\_%, increase/decrease of \_\_\_\_\_\_%

.66:1 ratio, 66%, increase/**decrease** of 1.49%