

[Time: 03.00 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. Q.1 is compulsory and carries 20 Marks.
 2. Q. 8 is compulsory and carries 15 Marks.
 3. Attempt any four questions from Q.2, Q.3, Q.4, Q.5, Q6 and Q7. Each of these questions carry 10 Marks.
 4. Figures to the right indicate full marks.

Q.1 Solve the Case Study given below: (20)

Manufacturing and Service Processes: Loganville Window Treatments

Introduction

For nearly 50 years, Loganville Window Treatments (LWT) of Loganville, Georgia, has made interior shutters that are sold through decorating centers.

Past Manufacturing and Service Operations: 2015

Traditionally, LWT supported a limited mix of standard products. At any particular point in time, the mix of products might consist of 6 different styles offered in 5 predetermined sizes, resulting in 30 possible end products. LWT would produce each of these end products in batches of 500 to 1,000 (depending on the popularity of each style/size combination) and hold the finished products in the plant warehouse. When a decorating center called in with an order, LWT would either meet the order from the finished goods inventory or hold the order to be shipped when the next batch was finished.

LWT's products were sold through independent decorating centers located across the United States and Canada. LWT would send each of these decorating centers a copy of its catalog, and the decorating centers would use these catalogs to market LWT's products to potential customers. It was the responsibility of the decorating centers to work with customers to price out the shutters, make sure the correct size and style were ordered from LWT, and resolve any problems. As a result, LWT almost never dealt directly with the final customers.

Manufacturing and Service Operations: 2016

By 2015, the influx of low-cost shutters made in China had forced LWT to reconsider its business model. Specifically, because of the low labor costs in China (1/5 of LWT's labor costs), Chinese manufacturers could make exact copies of LWT's products for substantially less and hold them in warehouses across the United States and Canada. LWT's traditional customers—the decorating centers—were turning more and more to these alternative sources.

LWT decided to fight back. As Chuck Keown, president of LWT, put it:

The only permanent advantage that we have over our Chinese competitors is that we are located here in the United States, closer to the final customer. So from now on, we will be a make-to-order manufacturer. We will deal directly with customers and make shutters to whatever specific measurements and finish they need. This means we can no longer count on producing batches of 500 to 1,000 shutters at a time and holding them in inventory. Rather, we will need to be able to make a few at a time in one-off sizes, if that's what the customer needs. On the service and marketing side of the house, we will now take orders directly from the customer. We will reach them through the Internet and through catalogs. We will work with them to determine what style best suits their needs, and to take the measurements needed to make the shutters. When there is a problem, we will work directly with the customer to resolve them. Yes, this will require dramatic changes to our business. But it also means we will be able to charge a premium for our products and create a relationship with the customers that our Chinese rivals will find difficult to emulate. As I see it, this is the only way we can survive.

Questions:

Q.1. As of 2015, what type of manufacturing process did LWT appear to be using? What level of customization was it offering? *Where* was the point of customization?

Q.2. How would you describe the service side of LWT's business prior to 2016? What were the managerial challenges?

Q.3. What type of manufacturing process is needed to support the changes proposed by Chuck Keown? What level of customization will LWT be offering? *Where* will the point of customization be?

Q.4. Develop a list of 8 to 10 things that must happen in order to accomplish the changes Chuck Keown envisions. Will the new business model be more or less difficult to manage than the old one? Justify your answer.

Q.2 Any two from (a) or (b) or (c):

(10)

(a) Briefly discuss any two measures of performance in single machine scheduling with independent jobs.

(b) What is meant by "time phasing" and by "time bucket"?

(c) What are the differences between Products and Services?

Q.3 Any two from (a) or (b) or (c): (10)

- (a) Explain the four levels of product customization.
- (b) Explain the Volume-Variety Matrix for production.
- (c) Discuss anyone layout decision model.

Q.4 Any two from (a) or (b) or (c): (10)

- (a) Explain the factors influencing facility location.
- (b) Discuss the Alfred Weber's Theory of the Location of Industries.
- (c) What do you understand by service layout?

Q.5 Any two from (a) or (b) or (c): (10)

- (a) Discuss the uses of time study.
- (b) Explain the paradigms in service marketing
- (c) What is aggregate planning?

Q.6 Any two from (a) or (b) or (c): (10)

- (a) Highlight the difference between chase strategy and level production strategy.
- (b) What do you understand by planning time fence?
- (c) Discuss the basic aspects of assuring quality

Q.7 Any two from (a) or (b) or (c): **(10)**

- (a) Discuss seven principles of quality management.
- (b) What are the Ten Commandments of Value Analysis?
- (c) How would you control quality in a job-shop situation?

Q.8 Any three from (a) or (b) or (c) or (d): **(15)**

- (a) Reorder Level
- (b) Facility Layout
- (c) Time Study
- (d) Value Analysis