

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA (PART TIME) – SEMESTER 5 – WINTER EXAMINATION – 2018

Subject Code: 2841101**Date: 6/12/2018**

**Subject Name: Total Quality Management and World Class Manufacturing Excellence
(TQMWCME)**

Time: 2:30 PM TO 5:30 PM**Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 Define the following terms: 14

- (a) Quality Control
- (b) Rapid Prototyping
- (c) Six sigma
- (d) TQM
- (e) The Taguchi Loss Function
- (f) Flexible Manufacturing Systems
- (g) Quality Policy

Q.2 (a) Explain the Baldrige view of Leadership and Describe Malcolm Bridge National Quality Award. 07

(b) Write a short note on Juran's Contribution to TQM. 07

OR

(b) Discuss the issues in Strategic planning for WCM. 07

Q.3 (a) Explain Deming's contribution in TQM in brief. 07

(b) Explain the Kaizen method of continuous incremental improvements. 07

OR

Q.3 (a) Explain the concept of World Class Manufacturing. Describe Schonberger's framework of WCM. 07

(b) Describe in brief the various Lean production tools. 07

Q.4 CASE STUDY:

There are close to 5000 dabbawallahs operating in Mumbai city supplying 1,70,000 dabbas (tiffin boxes) every day. Their operations are so complex that if even one thing goes out of place, it would lead to chaos. A lot of people believe that the food dabbawallahs deliver is also cooked by them. In reality, they only deliver food to the people of Mumbai which is cooked in the homes of the people by their wives, sisters or mothers. The tiffin box that the food is delivered in also belongs to the customer. Dabbawallahs have a unique colour coding system that they put on the boxes. Their ancestors started by first using coloured threads. Then they switched to using pieces of cloth and now dabbawallahs use oil paint and symbols. The first colour symbolizes a 'group'. A group comprises 10 to 20 people who service one station.

Just like a cricket team there are a few substitutes in case someone falls ill. Each group picks up about 40 tiffins from their area and delivers them to the local railway station. There they are sorted according to their destination. The alphabet written on the tiffin box stands for the person who collects the tiffins from the house, and the number is for its destination. From the Six Sigma point of view, the dabbawallahs have to take care of two critical to quality (CTQ) characteristics – the tiffins must be delivered to the customer in office at the scheduled time without any delay and secondly, the empty tiffin box must be returned back at the customer's home without any mix up. Rarely do dabbawallahs get complaints of someone's tiffin getting mixed up or lost. It happens only once in a month or two when they get a complaint. On following up on the complaint they generally find that it was stolen by a hungry beggar. They then keep a lookout for it in the market and on spotting it buy it back and return it to the rightful owner. Dabbawallahs claim that they never misplace anything due to any confusion on their part.

Dabbawallahs charge Rs 250-300 per month from a customer. That includes picking up the tiffin from home, delivering it to the office, and then returning the empty tiffin back home. Every station on Mumbai's western, central, and harbor railway lines has two groups ranging between 15 to 40 people. 'All of us are entrepreneurs who come together to deliver as a whole We work exactly like the post office with hub and spoke operations,' says the 63 year old Jairaj Surve, a dabbawallah. The meals picked up from clients by 9-9.30 a.m are brought to the closest railway station. Numbers and symbols painted on the aluminium cases help to sort out on the basis of office, street, and floor. Even as the dabba is picked up from a client's home and delivered by one person, it is delivered and picked up from the workplace by another person. It goes through 3 to 4 hands before reaching its destination. Till 1980, it was a worker-employee relationship, whereby there used to be a contractor who would employ 20-25 workers under him. However, the railway strike of 1975 under Datta Samant which lasted for 20-22 days caused huge losses for dabbawallahs. Their losses were further compounded by the mill strike. This was the reason that every worker was made shareholder. This way they put in more effort and since everyone is a shareholder, there is no question of union. There are elections for the post of the president of the trust and the person getting majority votes becomes the president. There is a show of hands and the person getting the most hands wins.

The American business magazine conferred the 'Six Sigma' plus rating on dabbawallahs, meaning only one error in six million deliveries, alongside the likes of GE and Motorola in terms of efficiency and quality of service. The modus operandi of dabbawallahs has also been well documented by the likes of BBC and Dutch and German film makers.

- (a) What are the factors which have enabled the dabbawallahs to achieve the Six Sigma distinction? **07**
- (b) Why have not the dabbawallahs been able to expand their operations outside Mumbai? **07**

OR

- Q.4** (a) Why have not the courier companies made a go at this business when the supply chain model that the dabbawallahs are using is a lot like the courier companies? **07**
- (b) What was the problem faced by dabbawallahs and how did they overcome? **07**

Q.5

CASE STUDY:

3M Company with a reputation for excellence in quality have leveraged this reputation by organizing separate strategic business units to market consulting and training services. The Management Services Division of 3M has clients ranging from airlines to educational institutions. Labeled as “masters of innovation”, the company has been noted over time as a quality manufacturer of over 50,000 products worldwide.

A central idea of 3 M’s total quality system, called “Managing Total Quality” (MTQ) is the “vision for success”, the key motivating force behind the MTQ success. Following the examples of 3M a number of hospital clients of 3M have drafted new mission statements as the basis for a quality management system.

The president of L.G. Health Care System is of the opinion that too many mission statements read alike and are general in nature. For example, a mission statement reads like “We are going to deliver high-quality health care at the lowest possible price.” This type of mission statement does not spell out anything about the hospital’s mission in the market.

The mission statement of L.G. Health Care System reads as below:

“The purpose of the L.G. Health Care Systems is to provide quality health care and health related services. We are committed to a comprehensive approach that effectively and efficiently meets the needs of individuals, families and the community including those who are most vulnerable.”

Our mission which is an expression of our philosophy of Human Ecology, demands that our practices demonstrate concern for the whole person – body, mind, emotions, spirit and relationships – as fundamental to every human encounter. We encourage the adoption of this philosophy through services, research, charity, advocacy and example.”

In addition to L.G. Health Care Systems, St. Luke’s Medical Centre and S.C. Baptist Hospitals are other health care centres that have adopted Total Quality Management based on the MTQ process of 3M. Each admits that TQM is necessary in light of ever-increasing health –care costs and steadily decreasing federal funding for Medicare and Medicaid.

Employee involvement is a primary characteristic of TQM and the 3M system. Because participation by all individuals – ranging from the nursing staff to administration to environmental services – is strongly encouraged, each employee is empowered to make decisions and initiate service goals without first having to pass ideas through several

levels of authority.

Because it is important to involve all constituents, steering committee members are composed of hospital volunteers and employees, patients and physicians. This broad mix of input providers ensures that all constituents have a voice in the quality process.

- (a) Describe how the mission statement of L.G. Health Care System can be implemented and made operational? **07**
- (b) How can quality as defined in the mission statement be measured? **07**

OR

- Q.5**
- (a) Would the L.G. Health care system's mission be appropriate for a for-profits hospital? Explain. **07**
 - (b) Will mounting pressure for health care costs make it more difficult to implement TQM? Explain. **07**