

**VPM's**  
**DR VN BRIMS, Thane**  
**Programme: MMS (2014-16)**  
**Second Semester Examination April 2015**

<b>Subject</b>	<b>TQM</b>		
<b>Roll No.</b>		<b>Marks</b>	<b>60 Marks</b>
<b>Total No. of Questions</b>	<b>7</b>	<b>Duration</b>	<b>3 Hours</b>
<b>Total No. of printed pages</b>		<b>Date</b>	<b>24-04-2015</b>

**Note: Q1 is compulsory and solve any FOUR from the remaining SIX questions.**

**Q1) 20 Marks (Compulsory)**

**Case Study: Implementation of TQM Technique for saving Electric power in an automobile manufacturing Industry**

The organization is a leading automobile manufacturer in India and it is renowned for its product quality and orientation towards the implementation of quality improvement projects. However, the organization was implementing the same as a standalone activity in isolated area. This is an example of one such quality improvement project of reducing the electricity consumption by 25-30%. The electricity cost was quite high for the organization compared to the competitors as percentage of the cost of production for various commercial equipment vehicles. It was seen by the quality improvement team that the plant was consuming a lot of electricity. Thus, a pareto analysis was conducted and various major sources of electricity consumption were identified. The team also utilized the help of line staff for the project and with the help of them the cause and effect diagram was drawn. This was followed by the brainstorming session and various theories were put forward. Based on these theories, recommendations were made. The recommendations were implemented, which resulted in saving of electricity cost by about 28% per year. Also, to hold the gains, checkpoints were established and monitoring of power factor was done. As, can be seen, the company saved a lot of money but this project is sporadic in nature rather than a continuous improvement one. There is no mission statement, no data available for the program. The project seems to measure the gains only on the data of electricity consumption. **(10 Marks)**

**A) Questions:**

- a) Explain the learning points of the case.
- b) Explain the critical success factor of the organization.

**B) Fill in the blanks**

**(5 marks)**

- i) \_\_\_\_\_ developed seven basic visual tools of quality so that the average person could analyze and interpret data
- ii) Perceived quality is governed by the gap between customers' \_\_\_\_\_ and their \_\_\_\_\_ of the product or service
- iii) Variation due to Differences among machines is an example of \_\_\_\_\_ causes
- iv) \_\_\_\_\_ are useful for monitoring quality and giving early warnings that a process may be going "Out of Control"
- v) Costs incurred for materials consumed during inspection and testing is \_\_\_\_\_ cost.

**C) Match the following**

**(5 marks)**

- |  |    |                            |
|--|----|----------------------------|
| 1. Plan do check act                       | a) | Phillip. B. Crosby Quality |
| 2. Taichii Ohno                            | b) | Joseph Juran               |
| 3. Quality is fitness for use              | c) | Shewart                    |
| 4. Quality is conforming to specifications | d) | Ishikawa                   |
| 5. Quality circle                          | e) | Toyota production system   |

**Attempt Any FOUR from the Remaining SIX Questions**

**Q2) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) Compare the concept of Quality with respect to Quality in yesteryears and Quality now at least on 5 point
- b) List different seven Quality tools and explain any one in detail.
- c) A dimension for a subpart of a casting being machined on a lathe machine is as follow: 10.2, 10.3, 10.3, 10.5, 10.5, 10.4, 10.0, 10.2, 10.3, 10.3. Calculate the mean, range and the standard deviation.

**Q3) Write short note on Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) Quality Guru: Juran Joseph
- b) Quality circle
- c) Appraisal cost

**Q4) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) Explain different Statistical Methods for Quality Control and Improvement.
- b) What is Six sigma? Explain its any of the methodologies in details.
- c) What are the different categories of cost of quality? Explain the different costs incurred in prevention cost.

**Q5) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) What is CMM? And what are its different levels
- b) Explain the concept of JIT.
- c) What are control charts? Explain any one of the chart in detail.

**Q6) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) Explain different Employee Motivation Enhancing schemes.
- b) Explain the gap model of service quality
- c) Discuss Who are the Key personnel in Six Sigma program?

**Q7) Write short note on Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks**

- a) Muda
- b) TQM Principles
- c) Lean manufacturing