GL BAJAJ
Institute of Management & Research
Approved by A.I.C.T.E., Ministry of HRD, Govt. of India

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POST GRADUATE DIPLOMA IN MANAGEMENT (2018-20)
END TERM EXAMINATION (TERM - IV)

Subject Name – **Total Quality Management**   Time: **02.00 hrs**
Sub. Code – **PGO07**   Max Marks: **50**

Note:
1. Writing anything except Roll Number on question paper will be deemed as an act of indulging in unfair means and action shall be taken as per rules.
2. All questions are compulsory in Section A, B & C. Section A carries 5 questions of 2 marks each, Section B carries 2 questions of 10 marks each and Section C carries 2 Case Studies of 10 marks each

SECTION - A   02×05 = 10 Marks

Q. 1 (A): Mention the dimensions of quality and explain any two?
Q. 1 (B): Brief note on three major philosophies of quality management?
Q. 1 (C): What are the causes of variation in quality?
Q. 1 (D): Describe implementation phases of benchmarking?
Q. 1 (E): Describe Malcolm Baldrige award and its criteria?

SECTION - B   10×02 = 20 Marks

Q. 2: Explain in detail quality costs and quality & productivity?
Q. 3: Explain Deming's philosophy of quality management in detail?

SECTION - C   10×02 = 20 Marks

Q. 4: Case Study: Watson Electric Company produces incandescent light bulbs. It wants to check if its process is statistically under control. To do so it has collected data on number of lumens for 40 watt light bulbs for ten samples of size 5 each shown below:

Sample Number	Sample Mean	Range
1	7	2
2	7.5	3
3	8	2
4	10	2
5	10	3
6	11	4
7	12	3
8	4	2
9	3.5	3
10	4	2

Further these bulbs are packed into large boxes of size 300. If a bulb does not light up upon being switched on it is considered defective. Several boxes were inspected and the following numbers of bulbs found defective:

Sample	Number of Defectives
1	25
2	30
3	35
4	40
5	45
6	35
7	35
8	40
9	30
10	20

Using a three sigma control limit calculate control limits for all the relevant charts, draw them and interpret.

Q. 5: Case Study: Small Medium Enterprise (SME) is facing the pressure from its competitors; mainly large companies as they could provide products of greater value with lower cost as compared to SMEs. Customers have been putting pressure on the industry for the products they purchase to be of higher value. This has spark various industry to adopt various quality management tools and concepts in order to strive towards a better quality product, lower lead time and lower cost. This leads to adaptation of different quality management concept into the firm's production. Two of the most in-trend and proven successful practically quality management concepts in the industry (if applied properly) are the Lean Manufacturing concept and Six Sigma. The integration of both models will facilitate the achievement of zero defect manufacturing in organizations complemented by the elimination of non-value added activities which leads to greater results than either system can achieve alone.

Now as a consultant you have to implement the Lean Six Sigma methodology in the SME industry to improve quality. Describe the complete process?

***Table for Factors**

Sample Size	A2	D3	D4
2	1.880	0.000	3.267
3	1.023	0.000	2.575
4	0.729	0.000	2.282
5	0.577	0.000	2.115
6	0.483	0.000	2.004
7	0.419	0.076	1.924
8	0.373	0.136	1.864
9	0.337	0.184	1.816
10	0.308	0.223	1.777