

MEC612 2008 PG - QUALITY ENGINEERING AND MANAGEMENT Test II

Time: 60 minutes

Max marks: 20

All questions carry 2 marks each, unless otherwise mentioned.

1. Explain the concept of internal customer.
2. What are the problems with the mail survey method of obtaining customer feedback?
3. What should be done regarding frontline personnel to ensure service quality?
4. What are the three factors that make an employee enthusiastic?
5. Explain the various roles in a "team".
6. How can we make a suggestion scheme successful?
7. Differentiate between common causes and special causes.
8. What is Rule 4 in Deming's funnel experiment? Give a practical example of the same.
9. The Production Manager of a coir factory was trying to implement an average range chart on the tensile strength of produced rope. Three samples were taken every hour for 25 hours and the trial control limits for average chart calculated as 15.8 and 12.6. One point with average 15.9 and Range 3.4 was out of control. Determine fresh control limits for the average chart excluding this point.
(4 marks)
10. Sketch the Operating characteristic curve for the Average chart for various subgroup sizes.

SOLUTION to 9:

| | |
|----------------|--------------------|
| UCL xbar | 15.8 |
| LXL xbar | 12.6 |
| xbarbar | 14.2 |
| A2Rbar | 1.6 |
| A2 | 1.023 |
| Rbar | 1.56402737 |
| N | 25 |
| Sigma xbar | 355 |
| Sigma R | 39.10068426 |
| xobar | 15.9 |
| Ro | 3.4 |
| New Sigma xbar | 339.1 |
| New xbarbar | 14.12916667 |
| New Sigma R | 35.70068426 |
| New Rbar | 1.487528511 |
| New UCL xbar | <u>15.65090833</u> |
| New LCL xbar | <u>12.607425</u> |