

Reg. No. :

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Z 4514

M.B.A. DEGREE EXAMINATION, MAY/JUNE 2008.

Second Semester

BA 1656 — QUALITY MANAGEMENT

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define total quality management. - 1
2. What are the dimensions of product quality? - 1
3. What is the significance of SPC? - 3
4. What do you mean by Reengineering? - 3
5. What is quality according to feignbaum? - 2
6. Discuss briefly the principles of 5S. - 2
7. What is QFD process? - 4
8. Discuss 80/20 rule. - 4
9. What are the qualities required for an auditor? - 5
10. What is the role of motivation in TQM? - 5

PART B — (5 × 16 = 80 marks)

11. (a) (i) What is customer focus? Discuss the customer perception of quality. — | (2 + 8 = 10)

(ii) Describe Kano's model of customer satisfaction. — | (6)

Or

(b) Illustrate each of the four types of cost of quality. — | (4 × 4 = 16)

12. (a) Discuss Philip B Crosby's 14 steps of total quality management — 2 (16)

Or

(b) Discuss the contributions of A.F. Feigenbaum's total quality control. — 2

13. (a) (i) A sample of 5 items is taken from a machining process at regular intervals. The hardness is measured and its mean and range values are computed. The observations show that $\Sigma x = 358$ and $\Sigma R = 9.0$. If the specification limits prescribed are 14.5 ± 0.5 and if the Process is under control, what conclusions would be drawn about the capability of the process to produce the items within the specification? (For $n = 5$, $d_2 = 2.326$) (10) — 3

(ii) Data for the test results of 10 samples of 300 items are shown below. Draw p-chart (6)

Sample number:	1	2	3	4	5	6	7	8	9	10
Number of defectives :	30	36	33	27	33	39	24	24	12	39

Or

(b) (i) Prove that the product reliability in terms of the hazard rate is :

$$R(t) = e^{-p \left[- \int_0^t z(t) dt \right]} \quad (8) \quad - 3$$

(ii) An electronic circuit consists of 5 silicon transistors, 3 silicon diodes, 10 composition resistors and 2 ceramic capacitors connected in series configuration. The hourly failure rate of each component is given below:

Silicon transistor, $\lambda_t = 4 \times 10^{-5}$; Silicon diode, $\lambda_d = 3 \times 10^{-5}$
 composition resistor, $\lambda_r = 2 \times 10^{-4}$; ceramic capacitor, $\lambda_c = 2 \times 10^{-4}$.
 Calculate the reliability of the circuit for 10h when the components follow exponential distribution. (8) — 3

14. (a) Use seven QC tools (old) for a case study of your interest and explain. (16)

-4

Or

(b) (i) Efficiency has been defined as "Doing things better" and effectiveness as "Doing better things". Describe how bench marking can be used to improve both efficiency and effectiveness. (10)

-4

(ii) Discuss use of Affinity diagram with an example. (6)

-4

15. (a) What is a quality audit? What are the types of quality audit? and also explain the procedure for conducting quality audit. (2+6+8=16)

-5

Or

(b) Write short notes for the following :

(i) Accreditation and compliance.

(ii) Corrective and preventive action

-5

(iii) Identification and traceability.

(iv) Control of non-confirming product.

(4 × 4 = 16)

