



B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2009)

Sixth Semester

AERONAUTICAL ENGINEERING

GSS103 : Total Quality Management

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Quality costs are classified as
 - a) direct, indirect and overhead costs
 - b) prime cost, factory cost and direct overhead costs
 - c) prevention cost, appraisal cost and failure cost
 - d) marginal cost and customary cost
2. The founder of the world wide quality management system is
 - a) Dr. W. Edwards Deming
 - b) Juran
 - c) Crosby
 - d) Henry Fayol
3. Under which motivational theory the following assumption is made. "Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially utilized".
 - a) Theory X
 - b) Theory Y
 - c) Maslow's theory
 - d) Herzberg theory
4. "SEITON", one of the 5S principles of good housekeeping means
 - a) cleanliness
 - b) discipline
 - c) orderliness
 - d) cleanup
5. Chance cause of variation are
 - a) natural and are an inherent part of the process
 - b) unnatural and are an inherent part of the process
 - c) natural and are not an inherent part of the process
 - d) unnatural and are not an inherent part of the process

6. When sample size is constant, np-chart also can be used instead of
 - a) \bar{X} - R chart
 - b) u - chart
 - c) p - chart
 - d) c - chart
7. A planning tool to ensure that the voice of the customer is deployed throughout the product planning and design stages
 - a) combination table
 - b) decision tree
 - c) quality policy deployment
 - d) quality function deployment
8. Taguchi defines quality as
 - a) fitness for use
 - b) the loss imparted to society from the time the product is shipped
 - c) conformance to specifications
 - d) superior performance
9. The mechanism by which a company can organize and manage its resources to achieve, sustain and improve quality economically is known as
 - a) quality system
 - b) quality control
 - c) quality assurance
 - d) quality standard
10. The training to be undergone by the MR in ISO 9000 is
 - a) quality audit training
 - b) MR training
 - c) ISO auditor training
 - d) lead auditor training

PART B (10 x 2 = 20 Marks)

11. Define the term Total Quality Management with reference to customer delight.
12. State the impact of MBWA as a senior management approach in TQM.
13. Draw the Teboul model for Customer Satisfaction.
14. How does a strategic plan help in the TQM process?
15. List the seven basic QC tools.
16. What are stratified samples?
17. Generate an FMEA work sheet.
18. What is the meaning of 'voice of customer'?
19. What does ISO 14001:2004 deal with?
20. State the "Big Three" concerns initiative that finally evolved as an ISO standard for a specific industry.

PART C (5 x 14 = 70 Marks)

21. a) State and explain the fourteen Quality philosophies of Deming.

(OR)

b) State and explain Crosby's fourteen steps for quality management.

22. a) State the 5S housekeeping principles and explain how it can be implemented in an engineering industry.

(OR)

b) (i) With an example explain the meaning of the continuous improvement concept of Kaizen. (7)

(ii) Explain the impact of process shift in Six Sigma approach. (7)

23. a) A machine is set to pack a given weight in gm of 16 samples, the samples size being 5. The data on mean and standard deviation of the samples are obtained as follows.

S.No.	1	2	3	4	5	6	7	8
Weight	150	145	142	152	148	155	160	159
S.D	3	4	5	2	7	2	3	5

S.No	9	10	11	12	13	14	15	16
Weight	165	151	153	157	162	153	161	149
S.D	1	3	6	5	2	5	4	3

Construct \bar{x} and 'S' charts and comment.

(Take the following values for $n=5$: $A_3 = 1.43$, $B_3 = 0$, $B_4 = 2.09$)

(OR)

b) The following table gives the result of inspection of 50 items per day for 20 days. Construct the fraction defective or percent defective chart and give inference about the process.

Day	1	2	3	4	5	6	7	8	9	10
No. of defectives	4	0	3	2	3	5	1	2	2	0

Day	11	12	13	14	15	16	17	18	19	20
No. of defectives	3	4	2	5	1	0	4	4	5	2

24. a) Discuss the role of QFD process in satisfying the customers' needs with the detailed process steps.

(OR)

- b) Draw the block diagram for the general benchmarking process and explain it.

25. a) Prepare a table showing the eight clauses and sub clause of ISO 9001-2008 standards.

(OR)

- b) Explain the procedure of ISO Audit.
