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Roll No. :

337751(37)

APR-MAY

B. E. (Seventh Semester) Examination, 2020

(Old Scheme)

(Mech., Mechatronics Engg. Branch)

**QUALITY CONTROL & TOTAL QUALITY
MANAGEMENT**

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Answer any two parts (b), (c) and (d) of each question. Give suitable neat and clean figures wherever necessary. Assume suitable data if required and mention it at respective place(s).

1. (a) What do you mean by quality of performance? 2
(b) Define analysis of variance (ANOVA) and discuss its utility.

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(c) Discuss the various factors which are considered to define and design a quality policy for an organization. 7

(d) Briefly explain the following with suitable examples : 7

(i) Measures of Central Tendency (Mean, Mode and Median)

(ii) Measures of dispersion (Range and standard Deviation)

2. (a) Define Quality Mindness. 2

(b) Discuss the four "Houses of Quality" in Quality Function Deployment (QFD) process with the help of diagram. 7

(c) ENKAY Industries Pvt. Ltd. involves in manufacturing of executive chairs. To control the quality of executive chairs, 15 chairs are randomly selected to inspect number of scratches on each of the chair. Following observation are recorded :

Sample Number No. of Scratches :

1	13
2	09

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3 19

4 07

5 08

6 10

7 12

8 00

9 02

10 05

11 07

12 11

13 09

14 13

15 01

Prepare c-chart and analyze the result. Also interpret your views. 7

(d) Briefly explain the following : 7

(i) Objectives of Statistical Quality Control

(ii) Concept of six sigma

3. (a) Define Acceptance Sampling. 2

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- (b) Explain and compare the different sampling plans with suitable examples. 7
- (c) Briefly discuss the following : 7
- (i) Advantages and limitations of Acceptance Sampling
 - (ii) Producer's risk and consumer's risk
- (d) What is O.C. curve? Explain and mention following regions in the O.C. curve : 7
- (i) Acceptable Quality Limit (AQL)
 - (ii) Lot Tolerance Percent Defective (LTPD)
 - (iii) Limiting Quality Level (LQL)
 - (iv) Acceptable and Unacceptable Quality Regions
 - (v) Region of Indifference
4. (a) Differentiate between TQC and TQM. 2
- (b) Write down the fourteen steps Crosby for quality improvement. 7
- (c) Explain the process of Juran's Philosophy to quality management. 7

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- (d) Briefly explain the following : 7
- (i) Deming's quality approach
 - (ii) Taguchi's quality concept
5. (a) What do you mean by Quality System Standards? 2
- (b) Discuss the purpose and advantages of ISO 14000 system standard. 7
- (c) What is ISO 9001 : 2000? Summarize its five clauses-clause 4 to clause 8. 7
- (d) What is ISO certification? Discuss the steps involved in getting an ISO certification. 7