

B.Voc

Automotive Component Manufacturing

Subject: Quality Control and Reliability Engineering

Subject Code: LBME-202

Semester: Fourth

Session:- September 2022

Theory (External): 70 Marks

Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of short answers type in nature. All questions are compulsory. Each question carries 2 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything in the question paper.
6. Whenever necessary, the diagram drawn should be neat and properly labeled.

Roll Number

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SECTION – A (SHORT TYPE QUESTIONS)

(10 × 2 = 20 Marks)

- A. What are the main functions of different standards?
- B. What are the uses of standard sampling plans?
- C. Explain AOQL concepts.
- D. Name any four quality tools used in statistical quality control.
- E. What is the significance of Six – Sigma approach?
- F. What is process capability index? Explain its significance.
- G. Define the terms AQL and LTPD.
- H. Explain the product life cycle
- I. What is Quality function deployment?
- J. Explain the concept of TQM

SECTION – B (ESSAY TYPE QUESTIONS)

(10×5 = 50 Marks)

1. What is acceptance sampling? Discuss control charts, attributes and establishing and interpreting control charts.
2. What are the objectives of life testing? Explain classification and failure characteristics.
3.
 - (a) Differentiate between a P-chart and a C-chart. Explain the situations in which C chart is most appropriate to use.
 - (b) Write short notes on the following:

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i) Quality circle ii) ISO 9000

4. What is reliability system? Explain in detail the different reliability improvement techniques.
5. How Reliability in Design is assessed for
 - a. series system
 - b. parallel system
 - c. series-parallel system
6. What is the difference between quality control and quality planning? What is the economic consideration in quality?
7. Write short notes on:
 - a. Kaizen
 - b. GIN and JIS standards
 - c. Control charts
8. Explain in detail about Pareto analysis with one example. What is standby redundancy?

End of Paper