

6. (a) What do you understand by design of experiment?
Describe variables that affect the output.
- (b) Explain Single-Factor and Two-Factor Experiments.
7+7
7. (a) Why is the assessment and control of product reliability important? What are some common difficulties frequently found with reliability data and how are they overcome?
- (b) How do you choose an appropriate life distribution model? Explain extreme value argument and fatigue life (Birnbbaum-Saunders) model in brief. 7+7
8. (a) Discuss the 'acceptance sampling' with its types and advantages.
- (b) What are the requirements and benefits of ISO 14001? 7+7
9. Write short notes on (any two): 2×7
- (a) Economics of quality control
- (b) Reliability evaluation techniques
- (c) Quality policy

Code : 021831

B.Tech. 8th Semester Exam., 2017

Quality Assurance & Reliability

Time : 3 hours

Full Marks : 70

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **Nine** questions in this paper.
- (iii) Attempt **Five** questions in all.
- (iv) Questions No. 1 is compulsory.

1. Choose the most appropriate alternative/Answer the following (any seven): 2×7

- (a) Control chart is a
- (i) Process monitoring tool
- (ii) Process control tool
- (iii) Both (i) and (ii)
- (iv) None of the above
- (b) The objective of ISO-9000 family of quality management is
- (i) Customer satisfaction
- (ii) Employee satisfaction
- (iii) Skill enhancement
- (iv) Environmental issues

- (c) Total Quality Management (TQM) focuses on
- Employee
 - Customer
 - Both (i) and (ii)
 - None of the above
- (d) Process control information is additional information needed by the
- User
 - Operating System
 - CPU
 - Process
- (e) What is the primary objective of Quality Circle?
- Keep employees occupied
 - Higher profit
 - Self and mutual development of employees
 - To solve the problem
- (f) Quality Circle concept was started in India in the year
- 1984
 - 1992
 - 1982
 - 1986
- (g) Who among the following suggested seven quality tools for controlling quality?

- Juran
 - Kaoru Ishikawa
 - Dr. W. Edward Deming
 - Feigenbaum
- (h) Waterfall method is observed in
- product design and development
 - quality circle
 - brain storming
 - flow chart

- What is the purpose of control charts? How do they work?
 - Explain steps involved in Statistical Process Control in brief. 7+7
- Discuss the Taguchi methods and its applications.
 - What is quality circle? What are the characteristics of quality circle? 7+7
- Discuss the process capability and tolerancing.
 - What do you mean by standardization? Explain different types of standards. 7+7
- Distinguish between classical, empirical, and subjective probabilities. Also, explain decision tree.
 - Explain the basic steps in value analysis. 7+7