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BME-007

00944

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)
B.Tech. (AEROSPACE ENGINEERING)

Term-End Examination

June, 2011

BME-007 : QUALITY ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *Use of scientific calculator is permitted.* ***Answer any seven*** *questions. All questions carry* ***equal marks.***

1. List out and discuss the tools of S.Q.C. **10**

2. Briefly discuss any five points under Crossby's Quality Management. **10**

3. Give the step by step procedure of Testing of Hypothesis. **10**

4. What is meant by ISO - 9000 ? Describe various series of ISO. Also give the benefits of ISO implementation. **10**

5. A small electrical company has a automated process and needs to monitor the circuit brakers. The parameter of interest is of the width 2.0 inch for a circuit brake. The data observed for the 5 days on 5 samples taken twice a day revealed the following facts. Construct mean - range charts for the data (Assume $A_2 = 0.577$ and $D_4 = 2.114$, and $D_3 = 0.00$) . **10**

Sample. No.	Mon		TUE		WED		THU		FRI	
	A.M	P.M	A.M	P.M	A.M	P.M	A.M	P.M	A.M	P.M
1	2.0	2.0	2.0	2.1	2.1	2.0	1.9	1.9	2.0	2.0
2	2.0	2.1	2.1	1.9	1.9	1.9	1.9	2.0	2.0	2.0
3	2.1	2.1	2.1	3.2	2.1	2.0	2.1	2.0	2.1	2.0
4	1.9	1.9	2.0	3.7	2.0	2.0	2.0	2.0	2.0	2.0
5	2.0	2.0	2.1	3.6	2.0	2.1	1.9	1.0	1.9	2.1

6. What is Six - Sigma methodology of Quality Management ? Who are its participants ? Explain. **10**

7. What are similarities and dissimilarities between process FMEA and design FMEA ? Explain. **10**

8. Compute the reliability of the system as shown in Figure 1 **10**

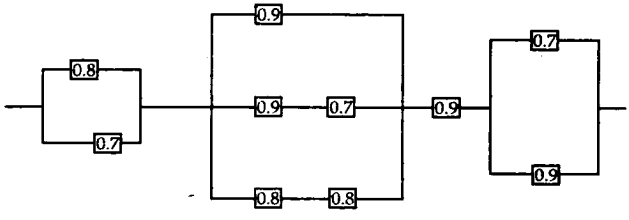

Figure - 1

9. A system has a mean time between failure of 120 hr, and the inherent availability of 0.90. What is the mean time to repair ? **10**