Ex/Prod/T/425F/2017 (OLD)

B.PRODUCTION ENGG. EXAMINATION 2017
(4th Year 2nd Semester)

TOTAL QUALITY MANAGEMENT

Full Marks: 100 Time: Three Hours

The figures in the margin indicates full marks

Answer any FIVE questions

1. a) What do you understand by Total Quality Management? State the characteristics of it.
   b) What are the application areas of TQM?
   c) Explain that TQM is a new cultural revolution.
   d) Make comparisons between TQM and Traditional approach.

(4+3+3+10)

2. a) What are the tools and techniques of TQM?
   b) What are the objectives of statistical quality control?
   c) An analysis takes 10 samples each of size 10 for inspection from the output of an assembly line. The items in each sample are examined for the number of defectives in them. The data obtained are given as follows:

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

   i) Construct the number of defectives chart.
   ii) Determine the control limits and warning limits.
   iii) State whether the process is under statistical quality control or not.

(7+3+10)

3. a) Distinguish between KAIZEN and Innovation.
   b) Why is KAIZEN so important?
   c) What are the benefits obtained from Brainstorming Session?
   d) What are the various types of Benchmarking assessment? Discuss on the process of benchmarking.

(2+3+3+12)

[Turn over

4. a) Define Quality according to Dr. G. Taguchi.
   b) What is Robust Design? What are the steps in Robust Design?
   c) How do you select the standard orthogonal array?
   d) The experimental results for radial overcut (ROC) of hole machined is given as follows:

Expt. No.	Process Parameters			S/N ratio,dB
	A	B	C	
1.	A1	B1	C1	25.91
2.	A1	B2	C2	19.89
3.	A1	B3	C3	13.91
4.	A2	B1	C2	25.58
5.	A2	B2	C3	12.04
6.	A2	B3	C1	19.80
7.	A3	B1	C3	13.84
8.	A3	B2	C1	6.91
9.	A3	B3	C2	7.95

Plot S/N graph. Determine the optimal process parametric combination and the predicted optimum value of quality level (radial overcut)

(2+6+4+8)

5. a) What do you understand by JIT Philosophy? What are the basic elements of it?
   b) What are the basic steps involved in the road map to Six Sigma quality?
   c) What do you mean by Six Sigma Quality Level?
   d) State Juran's ten steps to quality improvement.

(7+5+3+5)

6. a) State and explain TQM Effectiveness as a conceptual model.
   b) What do you understand by Quality Function Deployment? What are the steps of it?
   c) Sketch a typical House of Quality template showing its benefits.

(8+7+5)

7. Write short notes on the followings:
   i) ISO Quality System;
   ii) Concurrent Engineering Culture.

(10+10)