B.E. PRODUCTION ENGG 4TH YEAR 2ND SEMESTER EXAMINATION 2018 (OLD)

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 Quality?
   b) What do you mean by Total Quality Management? State the benefits of it.
   c) What are various types of cost of Quality?
   d) What are the tools and techniques of TQM?

(3+6+6+5)

2. a) What are the objectives of Statistical Quality Control?
   b) Mention various assignable causes of variation.
   c) Discuss about various quality control charts and their importance for statistical quality control.
   d) What is process capability? What do you understand that the value of Cp >1 but Cpk <1

(3+5+8+4)

3. a) Define Quality according to Dr. G. Taguchi. What are the types of Quality loss function?
   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)

(5+6+3+6)

[PTO]

4. a) Discuss on DMAIC methodology to achieve Six-Sigma Quality level?
   b)What do you mean by KAIZEN? Distinguish KAIZEN and Innovation.
   c) What is benchmarking? Explain various steps of benchmarking.
   d) What is brainstorming? What are the basic rules of brainstorming?

(6+4+6+4)

5. a)) State Juran's ten steps to quality improvement.
   b) What do you understand by Just-In-Time Philosophy? What are the seven waste elements of it?
   c) What are the benefits and various elements of JIT System for Quality Improvement?

(5+5+10)

6. Write short notes on: a) ISO Quality System b) Concurrent Engineering Culture.

(10+10)

7. a) State and explain TQM Effectiveness as a conceptual model.
   b)What do you understand by Quality Function Deployment? How do you obtain the voice of quality?
   c) Sketch a typical House of Quality template showing its benefits.
   d) Sketch a typical waterfall relationship of QFD matrices.

(5+5+5+5)
