

(Following Paper ID and Roll No. to be filled in your
Answer Books)

Paper ID : 140855

Roll No.

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B.TECH.

Theory Examination (Semester-VIII) 2015-16

SIX SIGMA METHODS & APPLICATIONS

Time : 3 Hours

Max. Marks : 100

Q1. Attempt all question

(2×10=20)

- (a) What are the differences between 'services' and 'products'?
- (b) How do you visualize quality in the service sector?
- (c) What is inferential statistics?
- (d) Define median, range, standard deviation and kurtosis.
- (e) Differentiate between Normal and Binomial distribution.
- (f) What is histogram? How is it constructed?
- (g) What is SIPOC?

- (h) Explain sporadic condition and approach for handling sporadic problems.
- (i) What do you mean by quality improvement?
- (j) Explain the term RPN in FMEA.

Q2. Attempt any five

(5×10=50)

- (a) Explain the role of Master Black Belts, Black Belts and Green Belts in a six sigma organisation.
- (b) What is meant by defects? Explain how you will classify defects in qualitative measurements case. Also explain the importance of having 'sigma' as a metric in denoting performance of a product, service or system.
- (c) Discuss the box-plot vis-a-vis a histogram. Can we call a Pareto chart a histogram ? Justify your answer.
- (d) A battery manufacturer was considering changing suppliers for a particular part. The purchasing manager required that the average cost of the part be less than or equal to Rs 320 in order to stay within budget. A sample of the 32 initial deliveries had a Mean of the new product upgrade price of Rs 280 with an estimated Standard Deviation of Rs 30. Based on the data provided, compute the value of Z for the data assuming a Normal Distribution.

- (e) What is DMAIC? Explain DMAIC Team Life Cycle Phases.
- (f) How to sustain six sigma improvements?
- (g) Introduce what is Project Charter? Define the role of Project Charter. Elaborate elements of Project Charter. What are the benefits of Project Charter?
- (h) Elaborate organizational culture and quality practices in Six Sigma. Give a brief review of reinforcement and control procedures

Attempt any two

(2×15=30)

- Q3.** What are QFD (Quality function deployment) and 'Failure Modes & Effects Analysis' (FMEA)? How to perform FMEA?
- Q4.** A process produces 40,000 pencils. Three type of defects can occur. The number of occurrence of each defect type are : Blurred printing (as pencil slips in the fixture) = 36
Wrong dimension (at three independent place) =118
Rolled ends (at top and/or bottom) = 11
Find out DPMO
- Q5.** Explain three basic approaches for implementing six sigma.

