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EME055

PAPER ID : 140855

Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

SIX SIGMA METHODS & APPLICATIONS

Time : **3** Hours]   [Total Marks : **100**

1   Attempt any **four** of the following questions :   **5×4=20**

a)   What are the differences between `services' and 'products' ? How can we think of controlling quality in each of the two cases?

b)   Briefly write the Six Sigma success story of General Electric.

c)   What is inferential statistics? Define median, range, standard deviation and kurtosis.

d)   Explain Normal distribution.

e)   What is histogram? How is it constructed?

f)   A lot of some product has 2% fraction defective. What is the probability that sample drawn of 100 units will have no more than 2 defective units?

140855]   **1**   **[Contd...**

2 Attempt any TWO of the following questions : **10×2=20**
   a) Explain the concept of six sigma system, with a case study
   b) Explain the role of Master Black Belts, Black Belts and Green Belts in a six sigma organisation.
   c) 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.

3 Attempt any TWO of the following questions : **10×2=20**
   a) What is DMAIC? Explain DMAIC Team Life Cycle Phases.
   b) Explain the philosophy of DFSS, with an example.
   c) Explain three basic approaches for implementing six sigma.

4 Attempt any TWO of the following questions : **10×2=20**
   a) Why is the measurement system analysis carried out? Also explain how it is done?
   b) What are QFD (Quality function deployment) and `Failure Modes and Effects Analysis' (FMEA)? How to perform FMEA ?
   c) What is Process Map and how it is created?

5 Attempt any TWO of the following questions : **10×2=20**
   a) How to sustain six sigma improvements ?
   b) Discuss the role of communication plan in successful implementation of six sigma culture across the organisation.
   c) What are the various softwares developed for six sigma ? Explain MINITAB.