Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 41188

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Sixth/Seventh/Eighth Semester

Mechanical Engineering

GE 6757 – TOTAL QUALITY MANAGEMENT

(Common to : Aeronautical Engineering/Automobile Engineering/ Biomedical Engineering/Civil Engineering/Computer Science and Engineering/ Electrical and Electronics Engineering/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Environmental Engineering/Industrial Engineering/Industrial Engineering and Management/ Instrumentation and Control Engineering/Manufacturing Engineering/Materials Science and Engineering/Mechanical and Automation Engineering/Mechatronics Engineering/Medical Electronics/Petrochemical Engineering/Production Engineering/Chemical Engineering/Fashion Technology/Food Technology/ Information Technology/Petrochemical Technology/Petroleum Engineering/ Pharmaceutical Technology/Plastic Technology/Polymer Technology)

(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

PART – A **(10×2=20 Marks)**

1. Differentiate 'Quality of Conformance' and 'Quality of Performance'.
2. Name any 4 methods of receiving customer complaints.
3. List the common barriers to team progress.
4. What are the objectives of supplier rating ?
5. What is the purpose of constructing PDPC ?
6. Define risk priority number.
7. Distinguish between variables and attributes.

8. What is house of quality ?

9. Define quality auditing.

10. What is the need for documentation ?

PART – B (5×13=65 Marks)

11. a) i) Describe Joseph M. Juran's contribution towards TQM. (8)
ii) What are quality statements ? Give example. (5)

(OR)

b) What is quality cost ? Explain the different categories and elements of COQ. How it is useful as a performance measure ? (13)

12. a) What is PDCA (PDSA) cycle ? Illustrate PDSA cycle as an effective tool for continuous improvement with an example. (13)

(OR)

b) i) List the five levels in Maslow's hierarchy of needs. Describe each level and how it motivates employee. (6)
ii) What is 5S ? How it will be useful in continuous improvement ? (7)

13. a) Explain the three main types of bench marking with example. Also, discuss the various steps involved in bench marking process. (13)

(OR)

b) i) Construct a flow diagram for the manufacture of a product or providing a services. (7)
ii) Develop a tree diagram for the customer requirements for a product or service. (6)

14. a) Construct a p-chart with the following data, if the size of the sample was 300 and number of samples inspected was 20. Determine the control limits. What do you infer about the process ? (13)

3, 6, 4, 6, 20, 2, 6, 7, 3, 0, 6, 9, 5, 6, 7, 4, 5, 7, 5 and 0.

(OR)

b) i) What is total productive maintenance ? Discuss the objectives, principle and steps in introduction of TPM in an organisation. (9)
ii) Compute the average loss in thousands for a process that produces steel shafts. The target valve is 6.40 mm and the Taguchic coefficient is 9500. Eight samples give 6.36, 6.40, 6.38, 6.39, 6.43, 6.39, 6.46 and 6.42. (4)

15. a) i) What are the requirements and benefits of TQM implementation in manufacturing sector ? (7)

ii) Describe the four tiers of quality documentation. (6)

(OR)

b) Explain in detail the concept and requirements of IS 14000. (13)

PART – C (1×15=15 Marks)

16. a) Explain the procedural steps in conducting a Failure Mode Effect Analysis with a suitable case study. (15)

(OR)

b) Discuss the procedural steps in constructing a house of quality with a suitable example. (15)

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