DEPARTMENT OF AEROSPACE ENGINEERING
19MEE304 Total Quality Management

Unit -4

Two Mark Question and Answers

1. **What is benchmarking?**

   Benchmarking is the process of comparing an organization's performance with industry leaders to identify areas for improvement.

2. **List two types of benchmarking.**
   - *Internal benchmarking (comparing within the same organization)*
   - *Competitive benchmarking (comparing with competitors)*

3. **Why do organizations use benchmarking?**

   To improve efficiency, enhance quality, reduce costs, and gain a competitive advantage.

4. **Give two examples of best practices in benchmarking.**
   - *Toyota's lean manufacturing system*
   - *Apple's product innovation strategy*

5. **What is Failure Mode and Effect Analysis (FMEA)?**

   FMEA is a systematic approach to identifying and preventing potential failures in a process or product.

6. **What are the main stages of FMEA?**
   - *Identifying failure modes*
   - *Analyzing the effects of failures*
   - *Prioritizing based on severity, occurrence, and detection*
   - *Implementing corrective actions*

7. **What are the two main types of FMEA?**
   - *Design FMEA (DFMEA) – Applied during product design*
   - *Process FMEA (PFMEA) – Applied during manufacturing processes*

8. **What is Quality Function Deployment (QFD)?**

   QFD is a structured approach to translating customer requirements into product design and manufacturing processes.

9. **Why is QFD important?**

   It ensures customer needs are systematically incorporated into the design and production processes.

10. **What is the House of Quality in QFD?**

    The House of Quality is a matrix that helps translate customer requirements into engineering specifications.

11. **List two key components of the House of Quality.**

- *Customer requirements (What the customer wants)*
- *Technical requirements (How the company will achieve it)*

12. **What is the Taguchi quality loss function?**

    It is a mathematical approach that quantifies the loss in quality due to deviations from the target value.

13. **Why is the Taguchi loss function important?**

    It emphasizes that even small deviations from the target value lead to increased costs and reduced customer satisfaction.

14. **What is Total Productive Maintenance (TPM)?**

    TPM is a maintenance approach that focuses on proactive and preventive strategies to maximize equipment efficiency.

15. **List the eight pillars of TPM.**

- *Autonomous maintenance*
- *Planned maintenance*
- *Focused improvement*
- *Early equipment management*
- *Education and training*
- *Quality maintenance*
- *Office TPM*
- *Safety, health, and environment*

16. **Why is TPM necessary for industries?**

    It reduces machine downtime, improves productivity, and enhances product quality.

17. **What are performance measures in quality management?**

    They are metrics used to evaluate the effectiveness, efficiency, and quality of processes and products.

18. **Give two performance measures used in the manufacturing industry.**

- *Overall Equipment Effectiveness (OEE)*
- *Defect per million opportunities (DPMO)*

19. **Mention two performance measures in the service industry.**

- *Customer satisfaction index (CSI)*
- *Service response time*

20. **How is performance measured in healthcare industries?**

    By monitoring patient satisfaction, treatment success rates, and hospital efficiency metrics.

21. **What is competitive benchmarking?**

    Comparing a company's performance with direct competitors in the same industry.

22. **What is functional benchmarking?**

    Comparing processes with companies outside the industry that excel in a particular function.

23. **What is a key benefit of FMEA?**

    It helps in identifying potential failures before they occur, reducing risks and costs.

24. **What is the main goal of the House of Quality?**

    To ensure customer needs are effectively converted into product specifications.

25. **How does TPM help in achieving zero defects?**

    By ensuring well-maintained equipment, reducing variability in manufacturing processes, and preventing machine-related defects.