Roll No. ☐☐☐☐☐☐☐☐☐☐☐          Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech (Ind. Engg. & Mgt.) (Spl. in TQM)   (Sem.–7)**
## SIX SIGMA
### Subject Code : IEM-701
### Paper ID : [71695]

Time : 3 Hrs.          Max. Marks : 40

**INSTRUCTIONS TO CANDIDATES :**

1. **Attempt All EIGHT questions from SECTION-A carrying TWO marks each.**
2. **Attempt any SIX questions out of EIGHT from SECTION-B carrying FOUR marks each.**

### SECTION-A

1. **Answer briefly :**

   a)  Define six sigma. How does six sigma address quality control issues in manufacturing organizations?

   b)  Give brief account of six sigma organization giving details of apex council, project champion, and process owner.

   c)  Describe the basis for establishing baseline performance with an appropriate example.

   d)  Discuss the FMEA method for analysis of root causes of defects.

   e)  Describe the importance of finalizing process documentation and updating project storyboard for implementing improvements.

   f)  What is tollgate review? Explain the process documentation made by the organization to assess adequacy of risk mitigation plans.

   g)  Write short note on TRIZ.

   h)  Write short note on pitfalls to be avoided in six sigma implementation.

## SECTION-B

2. Explain DMAIC methodology of six sigma implementation in an industrial enterprise.

3. How do organizations identify customer requirement? What is Critical to Quality Tree? How do organizations identify CTQ parameters?

4. Explain the steps involved in data collection in measure phase of six sigma implementation.

5. How do organizations evolve corrective actions to be taken after evaluating causes of variations?

6. Discuss the procedure adopted by organizations to generate and rank solutions for addressing problems.

7. How do organizations monitor and control improvements in the system performance?

8. What is DFSS? Explain phases of DFSS methodology.

9. How six sigma initiatives can be integrated with other lean initiatives like ISO 9000 series and TQM? Explain.