

M.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2013)

Third Semester

CAD/CAM

P13CCTE44: Micro Electro Mechanical Systems Design

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. State the purpose of micro pump and micro motors.
2. List the applications of the micro grippers.
3. Mention the general procedure of photolithography.
4. What is meant by etching process?
5. Distinguish between the resonant vibration and mechanical vibration.
6. Define the fracture mechanics.
7. Name the different materials used for LIGA process.
8. List the level packaging techniques.
9. Describe the thermo mechanical stress analysis in micro system design.
10. Define the bulk micromachining process.

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

Q.No:11 is Compulsory

11. Illustrate the design considerations of the micro system design.
12. Describe the working principle of micro valves with a neat sketch.
13. Explain in detail the working principle of CVD with a neat sketch.
14. Draw and explain the working principle of micro accelerometers.

15. Discuss the working principle of the SLIGA process in detail.

16. (i) List the applications of micro system in automotive industry (8)

(ii) Differentiate between the surface bonding and wire bonding in micro system. (8)
