

M.Tech II Semester Supplementary Examinations January/February 2019

MEMS & ITS APPLICATIONS

(Common to DSCE, ES, VLSI&ES, ES&VLSI and VLSI&ESD)

(For students admitted in 2017 only)

Time: 3 hours

Max. Marks: 60

Answer all the questions

- 1 Discuss about broad response of micro electromechanical system to mechanical and thermal point of view.

OR

- 2 Explain the following:

- (a) Power dissipation in MEMS.
- (b) Importance of cantilever beam.

- 3 (a) Write a note on deflection curves for cantilevers and fixed beams.
(b) Give an account on approximate solutions.

OR

- 4 (a) Draw deflection Vs voltage curve for MEMS.
(b) Give the physical significance of electro-static excitation.

- 5 (a) Write the applications of variable capacitors.
(b) Explain two terminal MEM structure.

OR

- 6 (a) Draw capacitance Vs voltage curve for MEMS.
(b) Write the applications of MEMS.

- 7 (a) Write the advantages of optical MEMS.
(b) Discuss about triggering application to counters and converters.

OR

- 8 Draw the basic MEM circuits and structures for OR, NOR and Exclusive OR gates.

- 9 (a) Give the importance of metal based MEMS.
(b) Write the applications of silicon based MEMS.

OR

- 10 Explain the following:

- (a) Etching technologies.
- (b) Thick film technology for MEMS.
