

Total No. of Questions : 12]

SEAT No. :

P3381

[4959]-120

[Total No. of Pages : 3

B.E. (Electronics)

SYSTEM ON CHIP (SOC)

(2008 Course) (Elective - II) (404205) (Semester - I)

Time : 3 Hours]

[Max. Marks : 100

Instructions to candidates:

- 1) Answer any 3 questions from each section.*
- 2) Answers to the two sections should be written in separate books.*
- 3) Neat diagram must be drawn whenever necessary.*
- 4) Figures to the right side indicate full marks.*

SECTION - I

Q1) a) Explain the concept of MEMS with an example in detail. **[8]**

b) What are the various issues in scaling of a design. **[8]**

OR

Q2) a) With a flow diagram explain the micromachining processes. **[8]**

b) What is the importance of pressure sensor and actuator in a typical MEMS. Explain with a case study. **[8]**

Q3) a) Explain in detail the various sliding control of MEMS. **[8]**

b) What are the various digital controls of MEMS. **[8]**

OR

P.T.O.

Q4) a) How do the choice of material for MEMS plays a role in design of a typical MEMS. [8]

b) Write short note on Gallium Arsenide and silicon with respect to micromachining characteristics [8]

Q5) a) Write a short note on various biological transducers. [9]

b) Explain the basic concept of electrophoresis. [9]

OR

Q6) a) Explain the working principle of molecule based biosensors. [9]

b) Write a short note on thermal transducers, explain with a case study. [9]

SECTION - II

Q7) a) How the design flow of SOC differs from that of VLSI design. [8]

b) What are the various compilation techniques associated with core architecture design. [8]

OR

Q8) a) Explain in detail the concept of microsystem technology. [8]

b) Elaborate the various applications of microsystem technology. [8]

Q9) a) What is testability? Why it is important in ASIC design. [8]

b) If the lithographic process is not done properly, How it will affect the design process. [8]

OR

Q10) a) What do you mean by behavioral synthesis explain in detail. [8]

b) What is photolithography. Explain it's importance in the ASIC micromachining process. [8]

Q11)a) What is Boundary scan? When it is carried out in a design explain with an example. [9]

b) Explain the concept of testability? When it is carried out in a design. [9]

OR

Q12)a) Write short note on microsystem packaging. [9]

b) What are the various strategies in embedded core based SOC. [9]

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