

May-13

VT-F.H.Exam. May-13-29

Con. 8546-13.

GS-3643

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.

- | | |
|---|----|
| 1. (a) Explain DC sputtering. | 5 |
| (b) Explain Ion implantation. | 5 |
| (c) Compare dry and wet etching. | 5 |
| (d) Properties of silicon. | 5 |
| 2. (a) What is photolithography ? Explain all the steps of photolithography with neat sketches. | 12 |
| (b) What is Etch stop ? Explain Boron Etch stop with diagram. | 8 |
| 3. (a) What is CVD ? Give types. Explain any two techniques in detail with diagram. | 10 |
| (b) Classify biosensors based on their biosensing technique. Explain any one in detail. | 10 |
| 4. (a) What is LIGA ? Explain the process steps with suitable diagram. | 10 |
| (b) What is μ -TAS ? Explain its block diagram and any one separation technique. | 10 |
| 5. (a) What is soft lithography ? Explain Microcontact printing in detail. | 10 |
| (b) What are microneedles ? Explain fabrication of microneedle with neat diagram. | 10 |
| 6. (a) Explain Thermal Evaporation. | 5 |
| (b) Explain Microcontact printing. | 5 |
| (c) Explain MEM's packaging in detail. Also compare it with IC packaging. | 10 |
| 7. Write short notes on (any four) :- | 20 |
| (a) PCR | |
| (b) Electron beam lithography | |
| (c) Drug delivery system | |
| (d) Reactive Ion Etching | |
| (e) Compare MEM's and BIOMEM's. | |

