

4. Matching type item with multiple choice code

CO2 [K₂]

List I	List II
A. Tungsten	i. holes are majority carriers
B. P-type semiconductor	ii. silicon
C. N-type semiconductor	iii. is metal
D. intrinsic semiconductor	iv. electrons are majority carriers

- a) A-1,B-2,C-3,D-4 b) A-3,B-1,C-4,D-2
c) A-1,B-3,C-2,D-4 d) A-3,B-4,C-1,D-2

5. Techniques used in MEMs fabrication include all but which of the following?

CO3 [K₂]

- a) Wet etching b) Dry etching
c) Photolithography d) Electro discharge machining

6. Which two COTS MEMs in particular are a good candidate for use due to their maturity?

CO3 [K₂]

- a) Transducers and Accelerometers b) Pressure Sensors and Accelerometers
c) Micro Transistors and Switches d) Transducers and Transmitters

7. Assertion (A): single – crystal silicon is the most widely used substrate material for MEMS and microsystems.

CO4 [K₂]

Reason (R): It is mechanically stable and it can be integrated into electronics on the same substrate.

- a) Both A & R are true and R is correct reason for A b) Both A & R are true
c) Both A & R are true but R is not the correct reason d) Both A & R are false

8. Wafers used in MEMS and microelectronics are

CO4 [K₂]

- a) The products of single crystal silicon boule b) Synthesized from silicon compounds
c) From ores d) Is made by electrolysis

9. (i) The photolithography process involves the use of an optical image and Photosensitive film

CO5 [K₂]

(ii) The photolithography process is the only technique that is available at present to create patterns on substrates with sub micrometer resolution.

(iii) The photolithography process is used to set pattern for masks for cavity etching in bulk micro manufacturing.

29. With schematic diagram explain thermal shear stress sensor and fabrication process. CO3 [K₃]
30. Describe various steps in LIGA process with a neat block diagram. CO4 [K₃]
31. Describe in detail about application of MEMS in bio – medical. CO5 [K₃]
