

M. Tech.-III (Mechanical CAD/CAM) (CBCS – 2015 Course) :
SUMMER - 2019

SUBJECT: ELECTIVE-I: MICRO- ELECTRO MECHANICAL SYSTEMS

Day: Friday
Date: 17/05/2019

Time: 11.00 AM TO 02.00 PM
Max Marks. 60

S-2019-3520

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks
 - 3) Answer to both the sections should be written in **SAME** Answer book.
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SECTION-I

Q.1 List the properties of magnetic materials for MEMS. Explain Micro-fluidic systems. (10)

OR

Explain advantages and disadvantages of radio frequency (RF) MEMS based communication system. (10)

Q.2 Describe silicon piezoresistors and Gallium arsenide. (10)

OR

Explain construction and working of chemical vapour deposition process (CVD) and write its advantages, disadvantages. (10)

Q.3 Explain how each of the chemical and optical sensors is used for different applications in the industry. (10)

OR

Define actuator? Explain the kinds of fluid actuation method used in micro fluidic systems. (10)

SECTION-II

Q.4 Write in detail over view of mechanical packaging of micro electronics. (10)

OR

Explain in detail selection of signal transduction technique. (10)

Q.5 From the everyday examples of microscopic objects similar to tubes, such as iron pipes, suggest a few properties of nanotubes which could be investigated. (10)

OR

What are principle challenges in understanding the chemistry of fullerenes? (10)

Q.6 Describe briefly magnetic abrasive finishing process and its advantages. (10)

OR

Describe abrasive flow machining and magneto-rheological finishing process. (10)

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