

Total No. of Questions : 4 ]

SEAT No. :

**PB298**

**[6270]-87**

[Total No. of Pages :1

**B.E. (E&TC) (Insem)**

**NANO ELECTRONICS**

**(2019 Pattern) (Semester-VIII) (Elective-VI) (404192B)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Answers Q.1 or Q.2, Q.3 or Q.4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) What are different tools used for measuring nanostructures? Explain principle & working of scanning Tunneling Microscope. [7]
- b) Explain in detail the fundamental science behind nanotechnology. [8]

OR

- Q2)** a) Describe the different tools used to make nanostructures. [7]
- b) Discuss the advantages & limitations of silicon material. [8]

- Q3)** a) Describe scanning probe instrument with neat diagram. [5]
- b) List different nano crystal non-volatile memories. Explain any one. [5]
- c) Draw & explain functioning of AFM. [5]

OR

- Q4)** a) What are different lithography techniques? Explain any one. [5]
- b) Explain different novel dielectric materials for future transistors. [5]
- c) Write short notes on : Nano CMOS devices [5]

