

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2143904

Date:20/05/2019

Subject Name: Synthesis of Nanomaterials-II

Time:02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

| | | MARKS | |
|------------|--|--------------|--|
| Q.1 | (a) Define Resist and give example of EBL resist. | 03 | |
| | (b) Write applications of E-beam Lithography. | 04 | |
| | (c) Describe the Electron beam lithography. | 07 | |
| Q.2 | (a) Write basic principles of PLD technique. | 03 | |
| | (b) Give Applications of PLD technique. | 04 | |
| | (c) Explain pulse laser deposition technique. | 07 | |
| OR | | | |
| Q.3 | (c) Describe advantages and disadvantages of PLD. | 07 | |
| | (a) Write basic principle of E-beam lithography. | 03 | |
| | (b) Describe Vector Scan and Roaster Scan. | 04 | |
| Q.3 | (c) Explain proximity effect in E-beam lithography. | 07 | |
| | OR | | |
| | (a) What are secondary electrons in E-Beam Lithography? | 03 | |
| Q.4 | (b) Explain beam focusing and alignment in EBL. | 04 | |
| | (c) Explain advantages and disadvantages of EBL. | 07 | |
| | (a) Differentiate between positive and negative resist. | 03 | |
| Q.4 | (b) Write note on alignment of nano elements in hybrid nanostructures. | 04 | |
| | (c) Explain RF Plasma Chemical Method. | 07 | |
| | OR | | |
| Q.4 | (a) Give the basic principles of RF plasma chemical method. | 03 | |
| | (b) Describe Ion-beam for deposition. | 04 | |
| | (c) Write note on application of RF Plasma method. | 07 | |
| Q.5 | (a) Write basic principle of CVD techniques. | 03 | |
| | (b) Give applications of CVD technique. | 04 | |
| | (c) Describe any one CVD technique. | 07 | |
| OR | | | |
| Q.5 | (a) Write basic principle of PVD techniques. | 03 | |
| | (b) Give applications of PVD technique. | 04 | |
| | (c) Describe any one PVD techniques. | 07 | |
