Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **17NT2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INTRODUCTORY NANOTECHNOLOGY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Give a brief account on the history of Nanotechnology. | CO1 | 10 |
| b. | Elaborate the role of Eric Drexler and Richard Feynman in the development of Nanotechnology. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | Give a detailed account of bottom-up and top-down approaches in Nanotechnology. | CO2 | 20 |
|  | | | | |
| 3. |  | Explain the methods involved in photolithography. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Explain molecular and materials self-assembly. | CO3 | 20 |
|  | | | | |
| 5. |  | Describe mechanical and physical properties of carbon nanomaterials. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Explain the applications of carbon nanotubes. | CO4 | 20 |
|  | | | | |
| 7. |  | Describe Hummer’s method, sol-gel method, and copreciptation in the synthesis of nanomaterials. | CO4 | 20 |
| (OR) | | | | |
| 8. |  | Give a detailed account of electric arc, ion-beam method and high energy ball milling. | CO5 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain the construction and working of scanning electron microscope. | CO5 | 20 |