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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **16NT2001** | **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. | Explain in detail about the various applications of CNT | CO2 | 20 |
| (OR) | | | | |
| 2. | a. | Name the compound synthesized using modified Hummer’s method. Represent the preparation method by a flow chart | CO1 | 15 |
|  | b. | List the unique properties of nanomaterials | CO1 | 5 |
| c | Write a note on Isolated Pentagon Rule (IPR) | CO1 | 5 |
| 3. | a. | Diagrammatically explain the working principle of Scanning Electron Microscope (SEM) | CO2 | 10 |
| b. | Schematically explain the working principle of Transmission Electron Microscope (TEM) | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Graphically represent various DOS with an example each | CO1 | 5 |
| b. | Briefly write about the applications and properties of 2D nanomaterial | CO2 | 15 |
| 5. | a. | What are the criteria required for the construction of a clean room? | CO2 | 10 |
|  | b | How the automobiles industries are benifited by nanotechnology? | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | What is the role of nanotechnology in spintronics? | CO2 | 15 |
| b. | Define molecular biotechnology | CO1 | 2 |
| c | Write a short note on superamolecular chemistry | CO1 | 3 |
| 7. | a. | Justify the statement “Quantum Confinement” | CO1 | 20 |
| (OR) | | | | |
| 8. | a. | Discuss the role of nanotechnology in the field of medicine | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Name the various scientists and their contribution in evolution of nanotechnology | CO1 | 10 |
| b | Explain in detail about top-down and bottom-up approach with an example | CO1 | 10 |

ALL THE BEST