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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **CH350** | **Duration :** | **3hrs** |
| **Sub. Name :** | **NANOCHEMISTRY** | **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. | Elaborate the synthesis of nanomaterials by chemical vapour deposition method. | CO1 | 10 |
| b. | Quote the types of Hydrogen bonding with example. | CO1 | 5 |
| c. | List out the applications of Nanomaterials. | CO1 | 5 |
| **(OR)** | | | | |
| 2. | a. | Describe the preparation of nanomaterials used in photolithography method. | CO1 | 10 |
| b. | Highlight the properties and application of thinfilms. | CO1 | 5 |
| c. | Classify the nanomaterials based on dimension. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Highlight the salient features of self assembled monolayered and multilayered. | CO1 | 10 |
| b. | Describe the principle and instrumentation method for TEM. | CO1 | 10 |
| **(OR)** | | | | |
| 4. | a. | Describe the theories and principles of soft lithography. | CO1 | 10 |
| b. | Discuss the instrumentation method of atomic force microscope. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Explain the preparation and properties of Chalcogenides. | CO2 | 8 |
| b. | Wtite short notes on bimetallic colloids and nano alloys. | CO2 | 10 |
| c. | Give four examples for metaloxides. | CO2 | 2 |
| **(OR)** | | | | |
| 6. | a. | Briefly discuss the nanorod and nanotube structure of carbon allotropy with neat diagram. | CO2 | 12 |
| b. | List out the application of carbon nano materials. | CO2 | 8 |
|  |  |  |  |  |
| 7. | a. | Discuss the preparation and properties of cyclodextrins. | CO3 | 10 |
| b. | Give the reason for better catalytic activities of mesoporous materials than microporous. | CO3 | 5 |
| c. | Write short notes on fullerenes. | CO3 | 5 |
| **(OR)** | | | | |
| 8. | a. | Explain the mesoporous materials used in drug delivery system. | CO3 | 10 |
| b. | Describe the molecular switch mechanism used in binding studies. | CO3 | 5 |
| c. | Write short notes on metalloporphyrins. | CO3 | 5 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Give the mechanism of nanomaterials used in drug delivery system. | CO3 | 10 |
| b. | Write short notes on; |  |  |
|  | i) Nanomachines. | CO3 | 5 |
|  | ii) Bioinspiration in material design. | CO3 | 5 |