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

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

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| **Code :** | **18CH1003** | Duration : | **3hrs** |
| **Sub. Name :** | **ENGINEERING CHEMISTRY** | Max. marks : | **100** |

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| **Q. No.** | **Questions** | | **Course**  **Outcome** | **Marks** |
|  | | **PART-A(10X1=10 MARKS)** | | |
| 1. | Sharing of electron leads to form \_\_\_\_\_\_\_\_\_\_ bond | | CO 1 | 1 |
| 2. | The maximum number of hydrogen bond in water molecule is \_\_\_\_\_\_\_ | | CO 1 | 1 |
| 3. | Write any two examples for natural polymers | | CO 2 | 1 |
| 4. | The compound added to rubber during vulcanization is \_\_\_\_\_\_ | | CO 2 | 1 |
| 5. | Nano materials possess a grain size of \_\_\_\_\_. | | CO 3 | 1 |
| 6. | State any two methods to characterize nanomaterials. | | CO 3 | 1 |
| 7. | Calorific value of a fuel expressed in \_\_\_\_\_\_\_\_ | | CO 4 | 1 |
| 8. | The electrolyte used in dry cell is \_\_\_\_\_ | | CO 5 | 1 |
| 9. | The electrode potential of saturated calomel electrode is \_\_\_\_\_\_ | | CO 5 | 1 |
| 10. | Adsorption is a \_\_\_\_ reaction. | | CO 6 | 1 |

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| **PART B (6 X 3= 18 MARKS)** | |  |  |
| 11. | Write any three characteristics of ionic bond. | CO 1 | 3 |
| 12. | Differentiate between thermoplastic and thermosetting polymers | CO 2 | 3 |
| 13. | What is Solgel method? | CO 3 | 3 |
| 14. | How knocking canbe reduced in petrol engines? | CO 4 | 3 |
| 15. | Write any three significance of electrochemical series. | CO 5 | 3 |
| 16. | What are colloids? Give examples. | CO 6 | 3 |

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| **PART C(6 X 12= 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | |  | **Marks** |
| 17. | a. | Discuss the different types of Vaderwalls forces. | CO 1 | 6 |
| b. | Write a note on hydrogen bonding. | CO 1 | 6 |
| 18. |  | Explain the preparation properties and applications of polyvinyl chloride. | CO 2 | 12 |
| 19. | a. | Write a note on top down approach in nanomaterial preparation. | CO 3 | 6 |
| b. | Discuss the applications of nano materials. | CO 3 | 6 |
| 20. |  | Describe proximate analysis of coal and its significance. | CO 4 | 12 |
| 21. |  | Derive Nernst Equation for electrode potential and give its applications. | CO 5 | 12 |
| 22. |  | Explain the analysis of flue gas by Orsat method. | CO 4 | 12 |
| 23. |  | Describe the working of lead acid battery with charging and discharging reactions. | CO 5 | 12 |
| **Compulsory:** | | | |  |
| 24. |  | Derive Langmuir’s adsorption isotherm. | CO 6 | 12 |