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

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

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| **Code :** | **14CH1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **APPLIED CHEMISTRY** | **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. | Describe the method of softening by zeolite process with a neat diagram. | CO1 | 10 |
| b. | Calculate total, permanent and temporary hardness of a sample water containing.  Ca(HCO3)2 = 162 ppm, CaCl2 = 100 ppm, MgCl2 = 95 ppm | CO1 | 5 |
| c. | Differentiate between temporary and permanent hardness. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Explain the method of desalination by reverse osmosis with a neat diagram and list out its advantages. | CO1 | 10 |
| b. | Write note on phosphate conditioning. | CO1 | 5 |
| c. | How is water disinfected by break point chlorination? | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Write the preparation, properties and uses of polyethylene. | CO2 | 10 |
| b. | Differentiate between thermoplastics and thermosetting plastics. | CO2 | 5 |
| c. | Mention the uses of nylons and bakelite. | CO2 | 5 |
| (OR) | | | | | (OR) |
| 4. | a. | Discuss the role of moulding ingredients with example. | CO2 | 10 |
| b. | Mention the drawbacks of raw rubber. | CO2 | 5 |
| c. | Write the applications of polyvinyl chloride. | CO2 | 5 |
|  |  |  |  |  |
| 5. | a. | Describe the method of manufacturing water gas. Write its uses. | CO2 | 10 |
| b. | List out the advantages of CNG over LPG. | CO2 | 5 |
| c. | What are the required properties of metallurgical coke? | CO2 | 5 |
| (OR) | | | | |  | (OR) |
| 6. | a. | Explain the method of analyzing flue gas using Orsat’s apparatus. | CO2 | 10 |
| b. | Discuss the significances of proximate analysis. | CO2 | 5 |
| c. | What are the advantages of biogas over biomass? | CO2 | 5 |
|  |  |  |  |  |
| 7. | a. | What is electrode potential? Derive Nernst equation. | CO3 | 10 |
| b. | Give an account of the factors influencing the rate of corrosion. | CO3 | 10 |
| (OR) | | | | |  | (OR) |
| 8. | a. | Explain the working of H2-O2 fuel cell with a neat sketch. | CO3 | 10 |
| b. | Write note on any two significances of electrochemical series. | CO3 | 5 |
| c. | How is corrosion controlled by sacrificial anodic protection method? | CO3 | 5 |
|  | | **Compulsory**: |  |  |
| 9. | a. | How are refractories classified? Give an account of the manufacture of refractories. | CO3 | 10 |
| b. | Explain the following:  i.graphite as solid lubricant ii.thermal insulators | CO3 | 10 |