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



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

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| **Code :** | **13CH201** | **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. | Explain the method of desalination by reverse osmosis with a neat diagram. | CO1 | 8 |
| b. | Write note on calgon conditioning and phosphate conditioning. | CO1 | 6 |
| c. | How is boiler corrosion caused by dissolved oxygen? Suggest any two methods to remove it. | CO1 | 6 |
| (OR) | | | | |
| 2. | a. | Describe the method of softening by zeolite process. | CO1 | 10 |
| b. | Calculate total, permanent and temporary hardness of a sample water containing  Ca(HCO3)2 = 120 ppm, CaCl2 = 100 ppm, MgCl2 = 90 ppm | CO1 | 5 |
| c. | Differentiate between temporary and permanent hardness. | CO1 | 5 |
| 3. | a. | Write the preparation, properties and uses of polyethylene. | CO2 | 8 |
|  | b. | What are the drawbacks of raw rubber? How will you prepare vulcanized rubber? | CO2 | 8 |
|  | c. | Mention the uses of nylons and bakelite. | CO2 | 4 |
| (OR) | | | | |
| 4. | a. | Differentiate between thermoplastics and thermosetting plastics. | CO2 | 7 |
|  | b. | Discuss the role of moulding ingredients. | CO2 | 8 |
|  | c. | Write the applications of rigid and plastisized polyvinyl chloride. | CO2 | 5 |
| 5. | a. | Describe the method of manufacturing water gas. Write its uses. | CO3 | 10 |
|  | b. | List out the advantages of CNG over LPG. | CO3 | 5 |
|  | c. | What are the required properties of metallurgical coke? | CO3 | 5 |
| (OR) | | | | |
| 6. | a. | Explain the method of analyzing flue gas using Orsat’s apparatus | CO3 | 10 |
|  | b. | Define octane number. How will you improve the antiknocking properties of fuel? | CO3 | 7 |
|  | c. | What are the advantages of biogas over biomass? | CO3 | 3 |
| 7. | a. | Write note on impressed current cathodic protection. | CO4 | 5 |
|  | b. | Give an account of any four factors influencing the rate of corrosion. | CO4 | 6 |
|  | c. | Construct a lead acid battery and explain its working during discharging. | CO4 | 9 |
| (OR) | | | | |
| 8. | a. | Derive Nernst equation. | CO4 | 8 |
|  | b. | Explain the working of H2-O2 fuel cell. | CO4 | 10 |
|  | c. | Write note on corrosion control using alloys. | CO4 | 2 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Mention the three types of refractories. Give an account of the manufacture of refractories. | CO5 | 10 |
|  | b. | Explain the following  i.graphite as solid lubricant ii.thermal insulators iii.calcium based grease | CO5 | 10 |

ALL THE BEST