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

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

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| **Code :** | **17CH2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ATOMIC STRUCTURE, THERMODYNAMICS AND ELECTROCHEMISTRY** | **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 Bohr’s atomic model with specific example? | CO1 | 10 |
| b. | Write short notes on Dual nature of electron? | CO1 | 6 |
| c. | Define the term Wave length. | CO1 | 4 |
| (OR) | | | | |
| 2. | a. | Explain Ruther Ford’s Gold foil experiment with neat sketch. | CO1 | 10 |
| b. | Briefly discuss the Quantum model of atomic structure with schematic diagram? | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Derive Gibbs – Helmholtz equation. | CO2 | 10 |
| b. | Explain the relationship between pressure, volume and work. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Describe the following terms.  i) Isobaric process ii) Isolated system iii) Endothermic process  iv) Isochroic Process. | CO3 | 10 |
| b. | State the first law of thermodynamics and explain it. | CO2 | 10 |
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| 5. | a. | Briefly discuss the Anodic and cathodic reactions of electrochemical cell with neat diagram? | CO5 | 10 |
| b. | Derive Nernst equation and give its application. | CO4 | 10 |
| (OR) | | | | |
| 6. | a. | Describe the construction of lithium ion battery with advantages. | CO5 | 10 |
| b. | Write short notes on concentration cell with neat diagram? | CO5 | 10 |
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| 7. | a. | Illustrate the rusting of iron with a help of Electrochemical theory of corrosion? | CO6 | 10 |
| b. | Explain the oxidation corrosion with a neat diagram. | CO6 | 10 |
| (OR) | | | | |
| 8. | a. | Explain the roles of various inhibitors in controlling the corrosion | CO6 | 10 |
| b. | Briefly discuss the factors influence the rate of corrosion. | CO6 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | How to calculate Energy and Wave function of a particle in One Dimensional Box. | CO1 | 10 |
| b. | Write short notes on types quantum numbers with suitable example? | CO1 | 10 |