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

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

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| **Code :** | **16CH2003** | **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. | Explain the quantum theory of radiation. | CO1 | 10 |
| b. | Calculate the frequency and wave number of green light having wavelength equal to 7350 A0? | CO1 | 8 |
| c. | Define the term Wave length. | CO1 | 2 |
| (OR) | | | | |
| 2. | a. | Explain Ruther Ford’s Gold foil experiment with neat sketch. | CO1 | 10 |
| b. | Describe the different concept of atomic orbital and explain the differences between orbit and orbital with suitable examples. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Discuss J. J. Thomson’s Model of the atom with neat diagram. | CO1 | 10 |
| b. | Explain the photoelectric effect with a neat diagram. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Describe the following terms.  i)Isobaric ii) Steam Point iii) Intensive property iv) Endothermic process v) Isochroic Process. | CO2 | 10 |
| b. | State the first law of thermodynamics. Explain it. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Derive Gibbs Duhem equation. | CO2 | 10 |
| b. | Explain the relationship between pressure, volume and work. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Describe the construction of lithium battery with advantages. | CO2 | 10 |
| b. | Explain the roles of various inhibitors in controlling the correction . | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Give the description of Lead storage batteries and its functioning during discharging and recharging. | CO2 | 10 |
| b. | Explain the construction of H2-O2 battery with advantages. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | Derive Nernst equation and give its application. | CO2 | 10 |
| b. | Explain the oxidation corrosion with neat diagram. | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | How does modification of the environment help in inhibiting corrosion control? | CO2 | 10 |
| b. | Explain the phase diagram of water. | CO3 | 10 |