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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17CH3023** | **Duration :** | **3hrs** |
| **Sub. Name :** | **POLYMER 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. | How the polymers are classified based on tacticity and based on their sources? | CO1 | 10 |
| b. | Discuss in detail on naturally occurring polymers with examples. | CO1 | 10 |
| **(OR)** | | | | |
| 2. |  | Write a note on the following.   1. Ladder Polymers 2. Star comb Polymers 3. Natural Polymers 4. Polymer resins | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Explain any two principle and mechanism of polymerization with suitable examples. | CO1 | 10 |
| b. | Differentiate between addition and condensation polymerization with suitable examples. | CO1 | 10 |
| **(OR)** | | | | |
| 4. | a. | Describe the effect of inhibitors and Q-e Scheme. | CO1 | 10 |
| b. | What is meant by coordination polymerization? Explain it with an example. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | If a polymer sample has population as:  10 molecules of molecular mass each = 5000  20 molecules of molecular mass each = 7500  20 molecules of molecular mass each = 10000  25 molecules of molecular mass each = 15000  20 molecules of molecular mass each = 20000  05 molecules of molecular mass each = 25000  Calculate its number average and weight average molecule mass of polymer. | CO2 | 10 |
| b. | Enumerate glass transition temperature and melting temperature. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | A polymer sample contains:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Polymer of DP | 400 | 500 | 600 | 800 | 1000 | | % | 10 | 15 | 35 | 15 | 25 |   Calculate its average degree of polymerization. | CO3 | 10 |
| b. | Compare and contrast thermosetting with thermo polymers with examples. | CO3 | 10 |
|  |  |  |  |  |
| 7. | a. | Give the preparation, properties and uses of Nylon 6,6 and Polyethylene. | CO4 | 10 |
| b. | What are the important ingredients to be added in the polymers? Explain it. | CO4 | 10 |
| **(OR)** | | | | |
| 8. | a. | Explain the following moulding techniques with neat diagram.   1. Compression Moulding. 2. Injection Moulding. | CO4 | 10 |
| b. | How the natural rubbers can be vulcanized with sulphur? Explain it. | CO4 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Describe the conducting polymers with suitable examples. | CO5 | 10 |
| b. | Discuss briefly the application of polymers in industry. | CO6 | 10 |