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



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

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| **Code :** | **17BT2052** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BIOMATERIALS AND ARTIFICIAL ORGANS** | **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 ceramic implant materials and their significance. | CO1 | 10 |
| b. | How is Biocompatibility an important pre-requisite for any biomaterial? | CO1 | 6 |
| c. | Comment on the creep properties of polymer. | CO1 | 4 |
| **(OR)** | | | | |
| 2. | a. | Elaborate on Polymeric Implant Materials and their significance. | CO1 | 10 |
| b. | Write in detail the Properties of Biomaterials. | CO1 | 7 |
| c. | Sketch the structure of a polymer. | CO1 | 3 |
|  |  |  |  |  |
| 3. | a. | Illustrate the process of Phagocytosis and state its importance in Implantation and corresponding Immune response. | CO2 | 10 |
| b. | Explain the significance of Langmuir–Blodgett film. | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Elucidate the process of Wound Healing in detail. | CO2 | 12 |
| b. | Describe the self assembled monolayers. | CO2 | 8 |
|  |  |  |  |  |
| 5. |  | Explain in detail:  i) Histopathology evaluation laboratory.  ii) Physiochemical evaluation laboratory. | CO3 | 10  10 |
| **(OR)** | | | | |
| 6. | a. | Elaborate in detail the tests carried out in cytocompatibility evaluation laboratory. | CO3 | 12 |
| b. | Describe the process of toxicolocy. | CO3 | 8 |
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| 7. | a. | Elaborate the characteristic features of an Artificial Heart showing the difference by drawing a neat labelled diagram of a Human Heart. | CO5 | 10 |
| b. | Portray the functional block diagram of an audiometer and explain its significance. | CO5 | 10 |
| **(OR)** | | | | |
| 8. | a. | Elucidate the need of oxygenators in hospitals. | CO5 | 10 |
| b. | Elucidate in detail the need of dialysis equipment and describe the principle of flat type and coil type hemodialysis. | CO5 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | Describe the follwing:  i) Tissue interfacing materials.  ii) Blood interfacing materials.  iii) Soft and Hard interfacing materials. | CO4 | 6  6  8 |