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

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

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| **Code :** | **14NT2016** | **Duration :** | **3hrs** |
| **Sub. Name :** | **NANOMATERIALS FOR HEALTH CARE** | **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 | Can propyl alcohol be used as a monomer in polymerisation reaction? Justify your answer? | CO3 | 3 |
| b. | Give an example for the use of a metal as biomaterial in bone treatment from the ancient days? | CO1 | 1 |
| c. | Explain the polymerisation mechanism in the preparation of polyethylene? | CO3 | 16 |
| (OR) | | | | |
| 2. | a. | What is tacticity, give example? | CO1 | 4 |
| b. | Give the difference in addition and co ploymerisation? | CO2 | 4 |
| c. | List the factors affecting the implant materials and explain them with example? | CO1 | 12 |
|  |  |  |  |  |
| 3 | a. | What do you mean by biocompatibility? | CO1 | 5 |
| b. | Discuss crystal imperfections and the corresponding property changes in crystals? | CO2 | 15 |
| (OR) | | | | |
| 4 | a. | How critical surface tension of polymeric materials affect the blood clotting time? | CO2 | 5 |
| b. | Discuss in detail the application of polymeric materials in orthodontic and orthopaedic treatments? | CO1 | 15 |
|  |  |  |  |  |
| 5 | a. | Elastin is present in  i.bone,  ii.tendon, skin  iii.Intestinal wall  iv.All the above | CO2 | 2 |
| b. | NiTi is known for \_\_\_\_\_\_\_\_.? Elaborate the properties and medical application of NiTi as implant? | CO1 | 18 |
| (OR) | | | | |
| 6 | a. | Discuss the effect of corrosion on metal implant materials? | CO2 | 5 |
| b. | What is hydrogel? Give its classification , preparation and Ophthalmological application? | CO1 | 15 |
|  |  |  |  |  |
| 7. | a. | What happens when elastin , collagen decrease in our body? | CO3 | 4 |
| b. | Write the application of metal alloys such SS, Co-Cr and titanium alloys as vascular implants,cardiac pacemakers? | CO1, CO2 | 16 |
| (OR) | | | | |
| 8. | a. | IOL device stands for what? Which polymeric materials are used as IOL devices? | CO2 | 13 |
| b. | What do you mean by tissue engineering? Write its advantages and disadvantages? | CO1 | 7 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | Write the steps involved in tissue engineering? | CO1 | 4 |
| b. | Write in detail on collagen, elastins, chitin polymeric scaffold materials in tissue engineering? | CO2 | 16 |