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



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

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| **Code :** | **16NT3009** | **Duration :** | **3hrs** |
| **Sub. Name :** | **NANOTECHNOLOGY FOR CANCER DIAGNOSIS AND TREATMENT** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 × 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Certain organic compounds that were practically proved to be carcinogenic showed negative results in the Ames test for carcinogens. What could be the possible reason? | CO1 | 5 |
| b. | Give an account on the clonal evolution theory of cancer. Describe the critical test done by Bob Weinberg to explain the concept of proto-oncogenes. | CO2 | 15 |
| **(OR)** | | | | |
| 2. |  | Describe the types of mutations in the development of cancer. | CO1 | 20 |
|  | | | | |
| 3. |  | Give a detailed account on hormones and biologic response modifiers in the chemotherapy for cancer. | CO2 | 20 |
| **(OR)** | | | | |
| 4. |  | Elaborate the role of DNA binders and topoisomerase inhibitors in the treatment of cancer. | CO3 | 20 |
|  | | | | |
| 5. |  | With a neat diagram, explain the function and applications of sonography in the diagnosis of cancer. | CO3 | 20 |
| **(OR)** | | | | |
| 6. |  | Explain the working principle, mechanism, and advantages of computer tomography in the diagnosis of cancer. | CO4 | 20 |
|  | | | | |
| 7. | a. | What are quantum dots? | CO1 | 3 |
| b. | Discuss in detail the role of quantum dots in the diagnosis of cancer. | CO4 | 17 |
| **(OR)** | | | | |
| 8. | a. | What are plasmonic materials? | CO1 | 3 |
| b. | Explain the role of plasmonic materials in cancer diagnosis. | CO5 | 17 |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain the applications of magnetic nanoparticles in hyperthermia treatment of cancer. Discuss in detail the designing of nanomaterials for hyperthermia applications. | CO5 | 20 |