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

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

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| **Code : 14BT2044** |  | **Duration :** | **3hrs** |
| **Sub. Name: CANCER BIOLOGY** |  | **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. | Distinguish benign tumor from cancerous tumor with illustration. | CO1 | 6 |
| b. | Indicate the differences between CIN and invasive cancer. | CO1 | 4 |
| c. | Discuss about the common causes and TNM grading system of cancers. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Draw the cell cycle and mark the changes that happens in cancer. | CO1 | 6 |
| b. | List out the characteristics of cancer. | CO3 | 4 |
| c. | Justify the principle of carcinogenesis through multistage theory of carcinogenesis with illustrations. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Give the classification of cancers and explain the causes, symptoms, diagnosis, therapy and prevention of any three types of cancers. | CO1 | 20 |
| (OR) | | | | |
| 4. | a. | What are the different types of carcinogens? Give an example for each. | CO3 | 6 |
| b. | Discuss in detail about the different chemical carcinogens and their role in the event of carcinogenesis. | CO3 | 14 |
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| 5. | a. | Compare the tumour specific and tumour associated antigens. | CO2 | 5 |
| b. | Contrast oncogene from protooncogene and explain the oncogene activation in Ras-MAP Kinase pathway with illustration. | CO2 | 15 |
| (OR) | | | | |
| 6. | a. | Comment on angiogenesis and its role in cancer. | CO3 | 5 |
| b. | Describe the steps involved in cancer metastasis with a neat diagram. | CO3 | 15 |
|  |  |  |  |  |
| 7. | a. | Evaluate the role of tumor suppressors in cancer and explain it with an example. | CO2 | 10 |
| b. | Analyze and write the role of different growth factors in cancers. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | What are the methods available for cancer detection? Detail them. | CO1 | 15 |
| b. | Criticize on the early detection of cervical cancer by screening. | CO1 | 5 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Summarize the methods of cancer therapy with highlights on the advantages and disadvantages of each therapeutic mode. | CO1 | 20 |