

R09**Code: 9A23707**

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

CANCER BIOLOGY

(Biotechnology)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) Explain how point mutation in RAS activates the signal transduction pathway leading to carcinogenesis.
(b) What are the various mutations involved in conversion of proto-oncogene to oncogene?
- 2 (a) What are tumor suppressor genes? Explain the three distinct mechanisms by which p53 contribute to tumor suppression?
(b) Mention the role of dietary factors insignificantly elevating the risk of cancer with mechanism of action.
- 3 (a) Define chemical carcinogens. Write a detailed account on the metabolism of carcinogenesis.
(b) Describe in detail about the chemical carcinogenesis and their targets.
- 4 (a) What are physical carcinogens? Write an account on the characteristics of physical carcinogens that help in their classification?
(b) What are the effects of X-ray radiation? How can you relate to cancer?
- 5 (a) Define oncogenes. Explain the various techniques employed in detection of oncogenes.
(b) What are growth factors and growth factor receptors that are oncogenes? Explain with one example from each category.
- 6 (a) Give an overview on the concept of cancer metastasis.
(b) How are proteinases related to tumor cell invasion? Give a detailed explanation.
- 7 (a) What are the significant advances that took place in the detection of cancers?
(b) How is aggressiveness of cancer predicted?
- 8 (a) What is chemotherapy? Explain how chemotherapeutics works on cancer cells.
(b) What are advantages and limitations of radiation therapy?
