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J 3080

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Sixth Semester

Biotechnology

BT 1009 — CANCER BIOLOGY

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are tumor markers? Give two examples.
2. Write the role of P⁵³ in normal cell and malignant cell.
3. Define Relative Biological Effectiveness RBE.
4. Distinguish between the modes of transformation of normal cell by DNA virus and RNA virus.
5. What are the phenotypic characters modified during metastatic process?
6. Write a note on soil and seed hypothesis.
7. Explain briefly the application of PCR in mutation.
8. What is mean by brachy therapy?
9. How is serine-therionine protein kinase involved in tumor cell progression?
10. Give any two vaccines that are used in cancer treatment.

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail how cyclin dependent kinase inhibitors control the cell cycle with neat flow diagram.

Or

- (b) Discuss the genetic and morphological differences between normal and cancer cell in detail.
12. (a) Describe the different group of chemical carcinogens and their molecular mechanism of carcinogenesis.

Or

- (b) Write in detail about the DNA damage occurred by X ray and gamma ray at molecular level.
13. (a) Discuss the mode of transformation of normal cell by growth factors and its receptors.

Or

- (b) Describe the role of primary and secondary messenger molecules in cancer development.
14. (a) How does malignant cell become metastatic cell? Explain in detail.

Or

- (b) Explain in detail the genes that are activated during metastatic development.
15. (a) Illustrate the detection techniques and modalities of therapy in cancer treatment.

Or

- (b) Describe the pharmacological and adverse effects of anti metabolites and natural products in cancer therapy.