A 307

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Seventh Semester

Industrial Bio-Technology

IB 046 — CANCER BIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by *Ectopic hormone production*?

2. What is Knudson postulate?

3. Define Relative Biological Effectiveness (RBE).

4. What are cycline dependent kinase inhibitors? Give one example.

5. Write any two RNA viruses that are associated with human cancer.

6. Write soil and seed hypothesis of Paget.

7. Write any two metastatsis-associated genes and its biochemical function.

8. Define Lethal dose 50 (LD_{50}) of a cancer drug.

9. List the techniques that are used to detect the mutation in cancer.

10. What is adjuvant chemotherapy?

PART B — (5 × 16 = 80 marks)

11. (i) Classify chemotherapeutic drugs for cancer therapy. (6)

    (ii) Discuss in detail about the mechanisms, dosage and adverse effects of alkylating agents in cancer treatment. (10)

12. (a) Explain in detail about the cell cycle control by cycline and cycline dependent kinase.

Or

    (b) Write the functions of P^{53} in the control of abnormal cell proliferation.

13. (a) Explain how is microsomal mono-oxygenase enzyme activates procarcinogen in to carcinogenic agent with suitable examples.

Or

(b) Describe how the growth factors and its receptors act as oncogene in the transformed cells with suitable example.

14. (a) Explain the different stages of metastatic process.

Or

(b) Describe the alterations in the surface properties of tumor cells after acquiring metastatic transformation.

15. (a) What are the stages involved in the delivery of radiation therapy? Discuss the complications of radiation therapy.

Or

(b) What are monoclonal antibodies (MAbs)? Write the applications of MAbs in the detections of cancer with suitable example.

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