

B.TECH DEGREE EXAMINATIONS: NOV/ DEC 2010

Seventh Semester

BIOTECHNOLOGY

U07BTE07: Cancer Biology

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 =10 Marks)

1. In cancerous cells, the receptor molecules on the cell surface tend to diffuse more rapidly within the lipid layer because of the
 - a. Attachment to microfilaments of the plasma membrane thereby preventing the motility of the receptors.
 - b. Interlocking of the glycosaminoglycans
 - c. Change in the surface membrane
 - d. Penetration and digestion of the basal components
2. p53, tumor suppressor gene
 - a. directly act with the ligands
 - b. maintain the genetic stability and protects the cell from their damage and disorder
 - c. inhibits the mutation
 - d. helps in the genesis of cancer
3. Compounds that can act as potent cancer inducers after the introduction of electrophilic centers are referred to as
 - a. direct acting carcinogens
 - b. procarcinogen
 - c. mutagen
 - d. indirect acting carcinogens
4. Metabolic activation of carcinogens generally occur via
 - a. cyt b5
 - b. cyt P 450
 - c. NADPH linked dehydrogenase
 - d. FAD linked dehydrogenase
5. Oncogenes encode proteins
 - a. that triggers the cell proliferation
 - b. that transduces the cell proliferation
 - c. that control the cell proliferation
 - d. that amplifies the cell proliferation
6. The protein encoded by _____ is active at 35°C and denatured at 41°C
 - a. Rb
 - b. src
 - c. RSV
 - d. myc
7. Metastatic tumors secrete _____, which degrade the surrounding extra cellular matrix.
 - a. proteases
 - b. glycosylases
 - c. lipases
 - d. hormones

8. Malignancy is caused by
- repression in the DNA double strands
 - ineffective chemotherapeutic drugs
 - interference in blood supply to tumors
 - inability of tumor cells to maintain genomic integrity
9. Tumor markers are
- hormones
 - lipid components
 - proteins
 - vitamins
10. When normal cell turn into cancerous, the antigen located on the cellular surface
- changes
 - vanishes
 - gets amplified
 - remain unaltered.

PART B (10 x 2 =20 Marks)

- What are tumor suppressor genes?
- How do RB gene mutation is correlated to cancer?
- What are carcinogens? Give examples
- Explain linear energy transfer?.
- What is oncogene and proto oncogene?
- Mention the role of RSV in carcinogenesis.
- Explain the phenomenon of metastasis.
- What are the key steps involved in the theory of invasion?
- What are tumor markers?
- How do radiation therapy is used in the treatment of cancer?

PART C (5 x 14 = 70 Marks)

21. a) Elaborate in detail on the role of defensive endogenous antioxidants.
(OR)
b) How does cell cycle control is related to cancer?
22. a) Write a detailed account on the direct acting carcinogens.
(OR)
b) Give a detailed account on the role of ionizing radiation in cancer.
23. a) Discuss on the telomerase activity in carcinogenesis.
(OR)
b) How are proto-oncogene activated? Give its significance.
24. a) Discuss on the various forms of cancer?
(OR)
b) Describe on the properties of Cancer cells.
25. a) Discuss on the various biochemical assays in the detection of cancer.
(OR)
b). Explain the different forms of cancer therapy.
