Register Number: ……..

B.TECH DEGREE EXAMINATIONS: MAY/JUNE 2013

Sixth Semester

BIOTECHNOLOGY

BTY 209**:** Cancer Biology

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. In mammalian cell cycle, CDK4 and CDK 6 will bind with……
   a) Cyclin A b) Cyclin B
   c) Cyclin D d) Cyclin E
2. CDK1 – formerly known as……...
   a) INK4 b) CIP
   c) cdc2 d) cdc28
3. Which one of the following Ionizing Radiations, have large mass and travel short distances
   a) X-Rays b) Beta Particle
   c) Alpha Particles d) Gamma Rays
4. UVA λ range from……. to…….
   a) 305 to 360 nm b) 345 to 400 nm
   c) 315 to 400 nm d) 365 to 415 nm
5. Which one of the following oncogenes is example of EGFR family?
   a) *IGF-1* b) *c-kit*
   c) c-*erbB1* d) *trk-B*
6. TGF-Beta growth factor will bind with……
   a) RTKs b) Thr/ser kinase
   c) Ser/Thr kinases d) All the above
7. Regular Exercise can lower breast cancer risk in adult up to……..
   a) 60% b) 40%
   c) 30% d) 20%
8. Pathological grading of uterine cancer is……..
   a) 3 b) 4
   c) 5 d) 2

9. Which of the following enzymes may be used as marker to identify lung cancer?

a) ACP b) AST

c) LDH d) γ – GT

10. Which of the following molecular techniques is used to identify an oncogene?

a) Transformation b) Conjugation

c) Transfection d) Biolistics

PART B (10 x 2 = 20 Marks)

11. Check points in cell-cycle regulation- Briefly explain with diagram
12. List out 3 Pathways involved in p53 activation.
13. Draw a flow chart of transfection of DNA from human tumor
14. Comment on RTKs signal transduction
15. List out any four DNA tumor viruses that cause cancer in human?
16. Src- A key regulator in signal transduction - comment it.
17. How will you distinguish Sporadic cancer from Familial Cancer?
18. Briefly explain type I and type II uterine cancer
19. Write short notes on: Immunotherapy with suitable examples
20. Briefly explain the role of tumor markers in diagnosing cancers

PART C (5 x 14 = 70 Marks)

21. a) Write detailed account on mammalian cell cycle and their regulation (With diagram)?

(OR)

b) Write short notes on:

(i) Rb in cell cycle (7)

(ii) Cellular responses of p53 (7)

22. a) Write detailed account on chemical carcinogens, classification based on source, nature, mode of action and mechanism of action (with example).

(OR)

b) How will you distinguish Ionizing radiation with non-ionizing radiation and list out different types of Ionizing radiation and their signs and symptoms of ionizing and non-ionizing radiation.

23. a) List out any FOUR techniques, that commonly practiced to detection of oncogenes in human cancer cells and briefly explain with suitable example

(OR)

b) Describe in detail on EGF/PDGF and their role in RTKs stimulation and activation.

24. a) List any five MMP and their role in ECM disruption and write short notes on role of protease in basement membrane disruption

(OR)

b) Write detailed account on: Etiology, risk factors and symptom of breast and uterus cancer

25. a) Elaborate in detail the mechanism of action of various chemotherapeutic drugs

(OR)

b) Write short notes on radio and immunotherapies with suitable examples

****