

TM154680A

Reg. No: .....

Name: .....

**M. Sc. DEGREE (C.S.S.) EXAMINATION, MARCH 2017**  
**SEMESTER IV - ZOOLOGY**  
**ZY4EA03TM - CANCER BIOLOGY**

**Time: Three Hours**

**Maximum Marks: 75**

**PART A**

**I. Answer any five questions. Each question carries 3 marks.**

1. What is meant by contact inhibition?
2. Briefly explain TNF-alpha signaling.
3. Comment on two common chemical carcinogens.
4. What are retroviruses?
5. What is angiogenesis? How it affects tumour growth?
6. What are the hallmarks of apoptosis?
7. Why PSA is used as a marker for prostate cancer?

**(5x3=15)**

**PART B**

**II. Answer any six questions. Each question carries 5 marks.**

7. What are caspases? Mention its role in Apoptosis.
8. What are proto-oncogenes? How are they activated?
9. What is meant by Paraneoplastic syndrome?
10. Give a brief note on the anti oxidant system of cell.
11. What is meant by radiation? How does it affect living systems?
12. What is metastases? How is it formed?
13. Describe the role BRCA1/2 as tumor suppressor genes.
14. What are the advantages and disadvantages of Radiotherapy?
15. What is pap smear test? How is it used in cancer diagnosis?

**(6x5=30)**

**PART C**

**III. Answer any two questions. Each question carries 15 marks.**

16. What are transcription factors? Illustrate the major signal transduction pathways that activate different transcription factors.
17. Comment on the viral etiology of cancer. Add a brief note on the major DNA and RNA viruses causing cancer in humans.
18. Discuss the process of cell cycle giving the importance of p53 and Rb proteins.
19. Elaborate screening methods for breast, cervical, lung, prostate and stomach cancers.

**(2x15=30)**