

**MASTER'S DEGREE (C.S.S) EXAMINATION, MARCH 2025**  
**2020, 2021, 2022 ADMISSIONS SUPPLEMENTARY**  
**ZOOLOGY SEMESTER IV - ELECTIVE COURSE**  
**ZO4E03TM20 - Cancer Biology**

**Time : 3 Hours****Maximum Weight : 30****Part A****I. Answer any Eight questions. Each question carries 1 weight****(8x1=8)**

1. What are the basic properties of cancer cells?
2. Write notes on stages of tumor development.
3. List the potential uses and limitations of tumor markers.
4. Write an account on TGFR.
5. Write an account on HIV and cancer.
6. Write an account on endocrine cancer.
7. Elaborate on adherens.
8. Discuss briefly on death receptor pathway.
9. Elaborate on the action of immunotherapy against cancer.
10. Comment on mammography.

**Part B****II. Answer any Six questions. Each question carries 2 weight****(6x2=12)**

11. What are the morphological changes observed in the microscopic appearance of cancer cells?
12. Elaborate on external beam radiation therapy and internal radiation therapy.
13. Describe the current molecular strategies in cancer gene therapy.
14. Describe Human herpes virus and cancer induction.
15. Discuss the importance of antioxidants in cancer.
16. Explain tumor suppressor gene with special reference to Rb.
17. Give a detailed account on integrins.
18. Write a note on neurological disorders associated with paraneoplastic syndromes.

**Part C****III. Answer any Two questions. Each question carries 5 weight****(2x5=10)**

19. Describe the ways in which normal cells can be transformed into cancer cells.
20. Write an essay on signal transduction in cancer.
21. Summarize the major types, symptoms and treatment measures of thyroid cancer.
22. Explain various pathways involved in VEGF signaling with suitable diagrams.