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MPS 453

**Second Semester M.Sc. Degree Examination, September/October 2022
(CBCS)**

**MEDICAL PHYSICS
Fundamentals of Cancer Biology**

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Number the answers **properly**.
2) Give illustrations **wherever** necessary.

PART – I

Answer **any five** of the following questions. **(5×4=20)**

1. Describe the altered metabolism in cancer cells.
2. Explain the importance of special staining in breast cancer diagnosis and treatment.
3. Brief about the role of p53 and Apoptosis.
4. Write a note on cancer marker for prostate cancer.
5. Describe the importance of cancer clinical trials.
6. Enlist side effects of chemotherapeutic drug.

PART – II

Answer **all** the **five** questions following internal choice.

7. a) Elaborate on molecular basis of cancer and the role of DNA repair and cancer genes. **10**

OR

- b) Describe energetic of cell proliferation and the role of Warburg's hypothesis in the process of carcinogenesis and treatment. **10**

8. a) Write in detail about DNA and RNA viruses and their role in site specific carcinogenesis. **10**

OR

- b) Explain how chemical carcinogenesis differs from radiation carcinogenesis. **10**

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9. a) Explain the importance of apoptosis in the process of carcinogenesis and in cancer treatment. **10**

OR

- b) Explain the role of mutations in cancer genetics and in triggering genomic instability. **10**

10. a) Write in detail about the Integrated Model of Metastasis. **10**

OR

- b) Write in detail about the systemic effects of Neoplasia and its importance in cancer. **10**

11. a) How do you develop and evaluate a cancer screening programme ? Explain systematically the steps involved. **10**

OR

- b) Write in detail on patient management on radiation – induced side effects. **10**
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