



Date: 27-04-2016

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART – A (20 Marks)

Answer ALL the questions

I. Choose the correct answer

(5 x 1 = 5 Marks)

- Which of the following is a benign neoplasm?
a) Carcinoma b) Leukemia c) Sarcoma d) Meningioma
- Receptor tyrosine kinases are activated by
a) Dimerization b) Phosphorylation
c) Raptor d) Janus kinase
- Primate probe which is used in expression of cellular *onc* gene examined during embryonic and fetal development of mouse
a) *v-sis* b) *v-erb* c) *v-myc* d) *v-fes*
- CA 19-9 is a tumor marker used for
a) Pancreatic cancer b) Medullary thyroid cancer
c) Breast cancer d) Colorectal cancer
- Which of the following are useful for staging lung cancer and assessing operability?
a) CT scan b) Nuchal translucency scan
c) Mammography d) Pap test

II. State whether the following are true or false, if false give reason

(5 x 1 = 5 Marks)

- Human papilloma virus infection can lead to cervical cancer.
- TGF is a tumor growth factor capable of causing growth in cells.
- Osteogenic carcinoma is an example of hereditary cancer.
- p53 prevents cells from triggering apoptosis.
- Tamoxifen increases the risk for heart attack in humans.

III. Complete the following:

(5 x 1 = 5 Marks)

- Entrance of foreign matter into a vessel of the body and especially a blood vessel is called _____.
- Rapamycin is an antibiotic produced by the soil bacterium _____.
- _____ causes mutations which can lead to cancer.
- _____ is a non-coding tandemly repetitive sequence of DNA.
- PSA stands for _____.

IV. Answer the following, each within 50 words

(5 x 1 = 5 Marks)

- What is a neuroma?
- Which signalling pathway is connected to breast cancer?
- Name any 2 oncogenic viruses.
- Describe the role of a tumor suppressor gene.
- What are the benefits of stem cell therapy in cancer treatment?

PART – B

(5×8 = 40 Marks)

Answer the following, each within 500 words. Draw diagrams wherever necessary

21(a) Mention the differences between benign and malignant tumors.

OR

(b) Briefly explain the etiology, causes and treatment of lung cancer.

22(a) What are the strategies and therapies targeting cancer stem cells.

OR

(b) Give a brief note on mTOR pathway.

23(a) Write briefly about cancers induced by radiation.

OR

(b) Explain the role of oxidative stress in cancer.

24(a) How do cell surface and nucleic acid markers play a role in cancer biology?

OR

(b) What is the importance of DNA methylation in cancer?

25(a) Write briefly on cancer prevention methods.

OR

(b) Describe how chemotherapy is done for cancer treatment in India.

PART – C

(2×20 = 40 Marks)

Answer any TWO of the following, each within 1500 words. Draw diagrams wherever necessary

26. Explain the multistep tumorigenesis process with the help of a diagram.

27. Write a detailed answer on the different growth factors and their role in cancer.

28. Explain the cytogenetic and molecular diagnosis of cancer.

29. What is the importance of tumor suppressor genes in cancer?

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