LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2015

BT 2956 - CANCER BIOLOGY

Date : 25/04/2015   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)

(1) Schwannomas are tumors arising from
    (a) Epithelial tissue   (b) Vertebra
    (c) Nerve   (d) Pulmonary artery

(2) Chemical substance that encourages a cell to commence cell division is
    (a) Tuberculin   (b) Mitogen
    (c) Transforming growth factor   (d) Nocodazole

(3) A type of herpes virus and that is best known for causing kissing disease is
    (a) Kaposi sarcoma   (b) Epstein–Barr virus
    (c) Human papilloma virus   (d) Merkel cell polyomavirus

(4) Malignant tumours which exhibit telomerase activity are
    (a) Neurofibroma   (b) Sarcoma
    (c) Breast cancer   (d) Osteochondroma

(5) p53 is a
    (a) Growth factor   (b) Anticancer drug
    (c) Tumor protein   (d) Angiogenesis inhibitor

II. State whether the following are true or false, if false give reason   (5 x 1= 5 marks)
(6) Micro metastasis is the entrance of foreign matter into a blood vessel of the body.
(7) Growth factors promote wound healing.
(8) People who are overweight or obese have much higher levels of hormones.
(9) Telomeric repeat amplification protocol is used to detect the level of telomerase activity in tissue samples.
(10) Bone marrow biopsy is a confirmatory test for blood cancer.

III. Complete the following: (5 x 1 = 5 marks)
(11) The term leukemia was coined by_____.
(12) _____ is the thin membrane supporting the capillary loops in renal glomeruli.
(13) BER stands for_____.
(14) _____are proteins involved in cell adhesion to prevent tumor cells from dispersing and they inhibit metastasis.
(15) _____ is a condition in which people wake up frequently during the night to urinate.

IV. Answer the following, each within 50 words only   **(5 x 1 = 5marks)**

(16) Mention the different types of cancer?

(17) Where are epidermal growth factors found?

(18) Expand RNS and explain about it.

(19) Write a note on Ataxia telangiectasia?

(20) How are tumors diagnosed by urine analysis?

PART – B

Answer the following questions, each in about 500 words only.   **(5×8 = 40 marks)**
Draw diagrams wherever necessary.

21(a) Describe the process of cancer metastasis with diagram.

OR

 (b) Give the Gleason's pattern scale and explain how tumor can be graded.

22(a) Write a short note on the phospholipase C mediated pathway.
OR
 (b) Discuss the tyrosine kinase pathway.

23(a) Give a short note on any 2 types of hereditary cancers.
OR
 (b) What is the role of oxidative stress in carcinogenesis?

24(a) Explain the role of tumor markers in oncology.
OR
 (b) Write about the DNA methylation inhibitors in cancer.

25(a) Can embryonic stem cells be used in curing cancer? Justify your answer.
OR
 (b) What methods can be used in the diagnosis of cancer?

PART – C

Answer any TWO of the following questions, each in about 1500 words;   **(2×20 = 40 marks)**
Draw diagrams wherever necessary.

(26) Give a detailed account of skin cancer and its treatment.

(27) Write elaborately on JAK-STAT pathway and its clinical significance.

(28) Describe the following (i) Oncogenic viruses (ii) Chemical carcinogens and its classes.

(29) How is cancer treated by using radiation therapy?

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