

KATHMANDU UNIVERSITY
End Semester Examination [C]
May/June, 2019

Marks Scored:

Level : B. Tech.

Year : IV

Exam Roll No. :

Time: 30 mins.

Course : BIOT 410

Semester: I

F. M. : 20

Date 02 JUN 2019

Registration No.:

SECTION "A"

[10 Q. × 1 = 10 marks]

Mark "X" in the most appropriate box.

- 1) Cancer of β lymphocytes is called?
 Sarcoma Melanoma Myeloma Carcinoma
- 2) In the production of monoclonal antibodies, antibody-producing lymphocytes were isolated from
 Bone marrow Spleen White blood cells Liver
- 3) MHC molecules carried by D122 line of lung cancer is
 H-2K H-2D D-2K K-2H
- 4) The carbohydrate binding site present in lectin molecule is
 zero one two variable
- 5) In Ames test bacteria were grown on growth medium lacking
 leucine tryptophan isoleucine histidine
- 6) In Wnt Signaling pathway the destruction complex does not consists of
 β -catenin Axin GSK3 APC
- 7) High risk human papillomavirus (HPV) that is detected in roughly half of all cervical cancers
 HPV 16 HPV 18 HPV 31 HPV 45
- 8) Protein that regulates the activity of a specific group of genes during embryonic development
 KiSS1 Twist Mad Myc
- 9) Drug used in cancer chemotherapy which bind to and inhibit dihydrofolate reductase
 Fluorouracil Methotrexate Cisplatin Taxol
- 10) The surgery technique commonly used for the treatment of skin and mouth cancer
 Laser surgery Electrosurgery Cryosurgery Mastectomy

SECTION "B"

[10 Q. × 1 = 10 marks]

Fill in the blanks:

- 11) _____ is the first anti-angiogenic drug to be approved for routine medical use in cancer patients.
- 12) _____ is a term used to refer to any alteration in gene expression that does not involve mutating the structure of a gene itself.
- 13) The six-base telomeric sequence that is repeated about 2500 times in a row at the ends of each chromosomal DNA molecule at birth is _____.
- 14) The enzyme that detects deaminated bases in DNA is called _____.
- 15) _____ is the starting material that was used for the synthesis of synthetic dye aniline purple by Perkin.
- 16) The tumor suppressor gene that codes for p16 and ARF protein is _____.
- 17) _____ are chromosome regions that stain homogeneously rather than exhibiting the alternating pattern of light and dark bands that is typical of normal chromosomes.
- 18) The cancer that results from gain of function mutation of RET receptor is _____.
- 19) When one copy of the p53 gene undergoes mutation, it produces an abnormal protein chain that may assemble with normal p53 chain in a way that it prevents protein from functioning. This mutation is called _____ mutation.
- 20) Henry Harris reported that cell fusion can be artificially induced by treating cells with inactivated forms of virus called _____ virus.

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02 JUN 2019

Level : B.Tech.
Year : IV
Time : 2 hrs. 30 mins.

Course : BIOT 410
Semester: I
F.M. : 55

SECTION "C"

[3 Q. × 7 = 21 marks]
(Long answer questions)

Attempt *ANY THREE* questions:

1. "Immunotherapies exploit the ability of immune system to recognize cancer cells". Do you agree with the statement? Give reasons in support of your answer.
2. Describe the six hallmark traits of a cancer cell.
3. What are the main classes of chemical carcinogens? Elaborate with examples for each class.
4. Describe briefly different mechanisms by which infectious agents can lead to the development of cancer.

SECTION "D"

(Short answer questions)

5. Write short notes on (*ANY FOUR*): [4 Q. × 3.5 = 14]
 - a) Oncotype DX and breast cancer.
 - b) Role of Cytochrome P 450 in carcinogen activation.
 - c) Control points in the cell cycle.
 - d) Wnt signaling pathway.
 - e) Chromosomal translocation and cancer.
6. Write down **TWO** differences between (*ANY FOUR*): [4 Q. × 2 = 8]
 - a) Non-homologous end joining and Homologous recombination.
 - b) Schistosomiasis and Cholangiocarcinoma
 - c) Invasion and Metastasis.
 - d) Bloom syndrome and Xeroderma pigmentosum.
 - e) Proto-oncogene and oncogene.
7. Give reasons why/ how? (*ANY FOUR*): [4 Q. × 3 = 12]
 - a) Pathologists do tumor grading for cancers arising in the same site and involving the same cell type.
 - b) Viruses are designed to kill cancer cells.
 - c) Regulation of Mitotic Cdk-Cyclin complex is brought by phosphorylation and de-phosphorylation.
 - d) Blood flow pattern often dictate where cancer cells will metastasize.
 - e) Stem cell transplantation is generally done after high dose chemotherapy.

