Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 9004

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Eighth Semester
Biotechnology
U19BTE21– CANCER BIOLOGY
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Draw a typical Cell cycle pattern.	2	K1	CO1
2.	What modifications are called signal switches and why?	2	K1	CO1
3.	What happens to DNA upon exposure to any carcinogens?	2	K2	CO2
4.	When was the natural history of carcinogenesis first observed?	2	K2	CO2
5.	What are growth factors? Give an example.	2	K1	CO3
6.	Define Proto-Oncogene with an example.	2	K1	CO3
7.	What is meant by MET to EMT transition?	2	K2	CO4
8.	Infer the function of proteinases.	2	K1	CO4
9.	PET-CT expand and state its role.	2	K1	CO5
10.	Indicate the importance of Immunotherapy in cancer treatment.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Classify the different types of mutations that cause change in signaling molecule with suitable examples.	13	K3	CO1
		(OR)			

	b)	Elaborate the role of tumor suppressor genes in cancer with a typical example.	13	K3	CO1
12.	a)	Tabulate the different chemical carcinogens. Elaborate metabolism of carcinogenesis with each carcinogen.	5+8	K2	CO2
		(OR)			
	b)	State the principle of physical carcinogenesis and exemplify the detailed mechanism with respect to radiation carcinogenesis.	13	K2	CO2
13.	a)	Discuss in detail about ANY one growth factor and its receptor signaling mechanism that acts as an Oncogene.	13	K2	CO3
		(OR)			
	b)	Write in detail about HPV induced cancer with typical examples.	13	K2	CO3
14.	a)	Narrate the different steps involved in Metastatic cascade with a labelled diagram.	13	K2	CO4
		(OR)			
	b)	Summarize the various molecules involved in basement membrane disruption in cancer progression.	13	K2	CO4
15.	a)	Portray the principle and mechanism involved in Chemotherapy and Radiotherapy in Cancer treatment.	7+6	K2	CO5
		(OR)			
	b)	Outline the various recent advancements made in diagnostic modalities for cancer.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Analyze the molecular mechanism of action of any THREE chemotherapeutic drugs in cancer therapy.	15	K5	CO5
		(OR)			
	b)	Deduce the various Hallmarks of Cancer and explain each with examples.	15	K4	CO3