Register Number:……..

KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Seventh Semester

B TECH BIOTECHNOLOGY

U18BTE0004: Cancer Biology

COURSE OUTCOMES

CO1: Comprehend role and function of genes in cell cycle regulation
CO2: Apply and evaluate mechanism of oncogenes and proto-oncogenes in cell cycle regulation in cancer
CO3: Attain the knowledge in the fundamentals of carcinogenesis and its role in cancer
CO4: Illustrate the mechanism of cancer metastasis and progression of cancer stage
CO5: Comprehend the basis of molecular diagnosis of cancer and cancer therapy

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	What is the role of telomerase in cancer progression?	CO1	[K_2]
2.	Discuss any ONE mechanism by which antioxidants may prevent cancer incidence.	CO1	[K_3]
3.	How are growth factors related to tumorigenesis? Give two examples.	CO2	[K3]
4.	What is a proto oncogene? Under what conditions do they get converted to oncogene?	CO2	[K3]
5.	Discuss the role of genes whose malfunction leads to cancer when the cells are exposed to radiation.	CO3	[K_4]
6.	How does retrovirus initiate cancer? Give example.	CO3	[K_5]
7.	Give a brief note on tumor initiation followed by basement membrane disruption	CO4	[K_4]
8.	Write a note on the molecular markers used to determine breast cancer prognosis	CO4	[K_4]
9.	List few biochemical assays used in cancer diagnosis	CO5	[K2]
10.	List the applications of stem cell therapy in cancer management	CO5	[K_3]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Elaborate the various check point controls in mammalian cell cycle and indicate the link between malfunctions in these checkpoints leading to tumor.	8	CO1	[K_4]
	b)	Discuss the mechanism of tumor suppressor genes in preventing cancer.	8	CO1	[K_3]

12.	a)	Explain how Ras is involved in cancer progression	8	CO2	[K_2]
	b)	Elaborate the extrinsic and intrinsic pathways of apoptosis	8	CO2	[K3]
13.	a)	Discuss the various classes of chemical carcinogens. Explain the molecular mechanisms by which a chemical carcinogen induce cancer.		CO3	[K2]
14.	a)	Elaborate on the events in cancer metastasis		CO4	[K_2]
15.	a)	Evaluate the use of molecular tools for early diagnosis of cancer with a case study		CO5	[K_5]
16.		Discuss the various types of chemotherapeutics used in the treatment of cancer. Explain the mode of action of any two agents targeted against a specific cancer.		CO6	[K_2]

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