Register Number:……..

KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Seventh Semester

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
CO6 Apply techniques in the field of cancer diagnosis and forms of 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.	Infer the role of cyclins and CDKs in cell cycle regulation.	CO1	[K_2]
2.	p53 is regarded as the guardian of the genome. Justify.	CO1	[K_5]
3.	Relate the role of RTK in signal transduction.	CO2	[K_2]
4.	Differentiate intrinsic and extrinsic pathway of apoptosis.	CO2	[K_3]
5.	Name any two compounds of naturally occurring carcinogens and synthetic chemical carcinogens.	CO3	[K_1]
6.	Why is ultraviolet radiation more carcinogenic than ionizing radiation? Substantiate with your answer.	CO3	[K_4]
7.	Mention three step theory of invasion of cancer cells.	CO4	[K_2]
8.	How will you distinguish sporadic cancer with familial cancer?	CO4	[K_3]
9.	Immunotherapy is a modern tool for diagnosing cancers – Justify.	CO5	[K_5]
10.	Comment on the role of tumor markers in diagnosing cancers.	CO6	[K_2]

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

11.	a)	Cell cycle regulation is essential for normal functioning of mammalian cells. Describe various check points and inspect the fate of these control mechanisms	10	CO1	[K_2]

		in cancer.			
	b)	Summarize various types of mutations that cause the change in signal molecules.	6	CO1	[K_2]
12.	a)	Illustrate with a neat sketch on the mechanism of oncogene activation.	12	CO2	[K_2]
	b)	Analyze the extrinsic pathway of apoptosis in normal cells.	4	CO2	[K_4]
13.	a)	Describe the different stages for the development of neoplasia with suitable illustrations.	10	CO3	[K_3]
	b)	Discuss the role of retrovirus in cancer.	6	CO3	[K_2]
14.	a)	Explain the different stages of metastatic process with suitable diagrams.	12	CO4	[K2]
	b)	Outline the role of proteases in basement membrane disruption.	4	CO4	[K_2]
15.	a)	How will you predict the aggressiveness of cancer? Explain.	8	CO5	[K_2]
	b)	Examine the biochemical assays for the diagnosis of cancer.	8	CO5	[K_4]
16.	a)	Demonstrate the molecular tools employed for the early diagnosis of cancer.	10	CO6	[K_2]
	b)	Enumerate the mechanism of action of any two chemotherapeutic drugs.	6	CO6	[K_2]

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