29. a.	Discuss about VEGF signal transduction pathway.	10	2	5	2,3	
	(OR)					
b.	Describe non-pharmacological therapy of neuropathic cancer pain.	10	2	5	2,3	
30. a.	Explain how X-ray computerized tomography and magnetic resonance imaging is used for cancer treatment.	10	2	5	2,3	
	(OR)					
b.	Describe dendritic cell based therapy for cancer.	10	2	6	3,4 ,5	

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2022

Seventh Semester

18BTE401T – CANCER BIOLOGY

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

PART – A (25 × 1 = 25 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
1.	Cancer of epithelial origin is called _____ (A) Carcinoma (B) Sarcoma (C) Lymphoma (D) Myeloma	1	1	1	3
2.	One of the following is NOT a hallmark of cancer. (A) Growth signal autonomy (B) Evasion of apoptosis (C) Unlimited replicative potential (D) Inhibition of angiogenesis	1	1	1	3
3.	Cancer of mesoderm origin is called _____ (A) Carcinoma (B) Sarcoma (C) Lymphoma (D) Myeloma	1	1	1	2
4.	Cancer of glandular tissues is called _____ (A) Adenocarcinoma (B) Sarcoma (C) Lymphoma (D) Myeloma	1	1	1	3
5.	Transformed (cancer) cell acquires all of the following phenotypes except ONE (A) Fails to exhibit contact inhibition and instead grow as piles of cells (B) Can grow in conditions of low serum (C) Adopts a round morphology rather than a flat or extended one (D) Exhibits contact inhibition	1	1	1	2
6.	One of the following is an example of mono functional alkylating agent (A) Cisplatin (B) Cyclophosphamide (C) Carboplatin (D) Adriamycin	1	1	2	3
7.	Corrector of damaged DNA bases or single-strand DNA breaks is called _____ (A) Base excision repair (BER) (B) Nucleotide excision repair (NER) (C) Mismatch repair (MMR) (D) Homologous recombination (HR)	1	1	2	3

8. One of the following repair mechanism correct double-strand breaks caused by reactive oxygen species, ionizing radiation and neoplastic drugs — 1 1 2 4
(A) Base excision repair (BER) (B) Nucleotide excision repair (NER)
(C) Mismatch repair (MMR) (D) Homologous recombination (HR)

9. Which one of the following is NOT a molecular 'sensor' of DNA damage? — 1 1 2 3
(A) ATM (B) ATR
(C) RAS (D) DNA-PK

10. _____removes the acetyl groups reestablishing the positive charge in the histones. — 1 1 2 4
(A) Histone acetylase (B) Histone deacetylase
(C) DNA methylase (D) Phosphorylase

11. Inactive form of RAS is converted in to active RAS by — 1 1 3 2
(A) GNEF (B) GAP
(C) GEP (D) DEP

12. One of the following is NOT a member of RAS family. — 1 1 3 3
(A) K-Ras (B) H-Ras
(C) N-Ras (D) D-Ras

13. Upon activation, Akt translocates from cytosol to _____to induce anti-apoptotic and survival signals. — 1 1 3 4
(A) Nucleus (B) Mitochondria
(C) Endoplasmic reticulum (D) Sarcoplasmic reticulum

14. Mutated form of proto-oncogene is termed as _____ — 1 1 3 3
(A) Gene (B) Promoter
(C) Oncogene (D) Neogene

15. STAT dimerization is mediated by _____upon binding of cytokine to its receptor. — 1 1 3 2
(A) TGF (B) TNF
(C) MAPK (D) JAK

16. Soil and seed hypothesis was proposed by _____ — 1 1 4,5 3
(A) Paged (B) Pagct
(C) William (D) John

17. Formation of new blood vessels from angioblasts or progenitor stem cells is called _____ — 1 1 4 3
(A) Metastasis (B) Vasculogenesis
(C) Angiogenesis (D) Neoplasia

18. Non-specific Angiogenic inducers include all EXCEPT one of the following. — 1 1 5 3
(A) EGF (B) FGF
(C) VEGF (D) HGF

19. First VEGFR inhibitor that went to phase III trials but was withdrawn due to toxicity and poor responses is _____ — 1 1 4,5 3
(A) Sunitinib (B) Sorafenib
(C) Vastinib (D) Semaxanib

20. _____is a humanized Mab against $\alpha v\beta 3$. — 1 1 4,5 3
(A) Vitaxin (B) Mitaxin
(C) Citaxin (D) Digitaxin

21. Systemic treatment for cancer includes all EXCEPT one of the following. — 1 1 6 2
(A) Chemotherapy (B) Hormonal therapy
(C) Monoclonal antibodies (D) Surgery

22. The first patient treated with the linear accelerator (radiation therapy) for retinoblastoma in 1957 is — 1 1 6 2
(A) Gordon Isaacs (B) Gordon John
(C) Gordon Mathew (D) Gordon Isaacs

23. _____includes depolymerization of the microtubules resulting in mitotic arrest at metaphase, dissolution of the mitotic spindle, and interference with chromosome segregation. — 1 1 6 2
(A) Doxorubicin (B) Methotrexate
(C) 5-Flurouracil (D) Vinblastine

24. Molecular imaging techniques which involve using molecular imaging probes to detect biologic molecules in living subjects includes all of the following except ONE — 1 1 6 3
(A) PET (B) SPECT
(C) X-ray (D) MRI

25. Chemotherapy drug tamoxifen affects _____phase of the cell cycle. — 1 1 6 3
(A) S (B) G1
(C) G2 (D) M

PART – B (5 × 10 = 50 Marks) — Marks BL CO PO
Answer **ALL** Questions

26. a. Explain the metabolic changes in tumor cells. — 10 2 1 3,4

(OR)

b. Explain the structure, function and regulation of p53. — 10 2 1 3,4

27. a. Enumerate the major DNA repair pathways. — 10 2 2 2,3,4

(OR)

b. Explain the role of microRNA and how it regulate mRNA expression. — 10 2 2 2,3,4

28. a. Comment about current strategies in experimental immunotherapy. — 10 2 3,4 3,4,5

(OR)

b. Explain about prolactin-R signaling and pathway cross-talk in cancer. — 10 2 3,4 3,4,5