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Question Paper Code: 99D74

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2022

Open Elective

Civil Engineering

19UBT974- NANOMEDICINE FOR CANCER TREATMENT

(Common to CSE,EEE, ECE, MECH, IT , Chemical and Agriculture Engineering branches)

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the different types of cancer CO1- U
2. Comment on the mechanism of protooncogenes in cancer CO1- U
3. Elaborate the idea of Abraxane CO1- U
4. List out the barriers to nanovector delivery CO1- U
5. What are the various cellular uptake mechanisms of nanomaterials CO1- U
6. State the function of hydrogels CO1- U
7. Highlight the importance of “Pegylated streptokinase as clot buster” CO2- Ana
8. How Scaffold is used for dermal regeneration CO2- Ana
9. What are the key Ethical issues in Genetic Engineering and Transgenics CO1- U
10. Write an note on requirements of TRIPS CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Highlight the hallmarks in cancer - “Cancer is a devastating dreaded disease that projects multiple vulnerability throughout the cell”. CO2- Ana (16)
Or
(b) Suppose you are selected as a patient care taker in Cancer Department. Develop a detailed note about your experience at the hospital and how will you manage them to overcome their mental stress. Write in detail by drawing your imagination and humane quality CO2- Ana (16)

12. (a) Justify the statement “Polymeric scaffolds are used in cancer drug delivery & multi-functionalnanozymes mimic the properties of certain compounds” and Explain CO3- App (16)
- Or
- (b) Imagine that you are a Scientist working in a Nanomedicine for cancer treatment. Design and Develop a novel research idea and strategy. Write in detail by drawing your imagination and scientific temper in relevance to nanotechnology applications in cancer CO3- App (16)
13. (a) Explain the mechanism of “Photoablation and hyperthermia” and also mention how it plays a role in cancer diagnosis and treatment CO2- Ana (16)
- Or
- (b) How Biochips, Micro arrays & BioMEMs have revolutionised the modern era of medicine. Discuss in detail CO2- Ana (16)
14. (a) Prepare a case study and discuss in detail about the “Apligraf as dermal matrix for organogenesis” CO4- E (16)
- Or
- (b) A press release said the “ Pegylated streptokinase as clot buster” has been precisely engineered through decades of research. Discuss its mechanism and importance CO4- E (16)
- 15 (a) “Legality, morality and Ethics”- All these terms are commonly used in Research. What are its differences and how it is important in field of Scientific Research CO4- E (16)
- Or
- (b) Explain the several Risk assessment, Risk communication and risk management in the field of scientific research CO4- E (16)