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Question Paper Code: UC303

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Biotechnology

21BTV303-NANOMEDICINE FOR THERANOTICS

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. List out the mutagens and carcinogens CO1-U
2. Why p53 is considered as a tumor suppressor gene ? CO2-App
3. Articulate the various applications of nanotechnology in the field of medicine CO1-U
4. Define Blood Brain Barrier 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” CO1-U
8. How Scaffold is used for dermal regeneration? CO1-U
9. How biosafety is different from bioethics? CO1-U
10. Give out the key points related to Adoption and diffusion CO1-U

PART – B (5 x 16= 80 Marks)

11. (a) “Cancer is a devastating disease that projects multiple vulnerability throughout the cell”. Elucidate the hallmarks in cancer in detail CO1-U (16)

Or

- (b) Explain the chromothrypsis mechanism in cancer and mention how the proto-oncogenes and oncogenes lead to the formation of cancer. CO1-U (16)

12. (a) Explain blood brain barrier in detail? CO1-U (16)

Or

- (b) Write a detailed note on subcellular localization in drug delivery? CO1-U (16)
13. (a) Write a detail note on Nanoparticles deployed for diagnostic purposes? CO1-U (16)
- Or
- (b) Explain the detail about DNA micro array technique? CO1-U (16)
14. (a) Pegylated streptokinase as a clot buster” has been precisely engineered through decades of research. Discuss its mechanism and importance CO3-App (16)
- Or
- (b) Biosilicon in drug delivery vehicle have gained new insights of cancer nanomedicine. Discuss in detail CO3-App (16)
15. (a) Explain in detail about the biosafety level followed in cancer research laboratory? CO1-U (16)
- Or
- (b) Describe the role of TRIPS and WTO in research? CO1-U (16)