19. (a) Enumerate the classification of nano particles.

Or

(b) Write about the principles of targeted drug delivery system.

20. (a) Explain briefly about laser based bio printing.

Or

(b) Account on droplet based bio painting.

PART C — (3 × 10 = 30)

Answer any THREE questions.

21. Elaborate the strategies for site specific drug delivery.

22. How will you perform apoptosis by flow cytometer?

23. Write in detail about the principle procedure and applications of High Intensity Focused Ultra Sound. (HIFU).

24. Account on the applications of magnetic nanoparticles in drug delivery.

25. Give a detailed account on 3D modeling softwares.

———————



**S.No. 6084** **P 22 BCE 1 B**

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Biochemistry — Elective

NANOTECHNOLOGY

Time : Three hours Maximum : 75 marks

PART A — (20 marks)

I. (A) Multiple choice questions. (5 × 1 = 5)

1. Liposome consists of a bilayer of ————————

(a) Hydrophilic molecules

(b) Hydrophobic molecules

(c) Both (a) and (b)

(d) None of the above

2. This is an extracellular messenger of apoptosis

(a) Tumor necrosis factor

(b) Seaine

(c) Translation inhibitor

(d) Rebozyme

3. Cancer is caused by ————

(a) Uncontrolled mitosis

(b) Uncontrolled meiosis

(c) Rupturing of cells

(d) Loss of immunity of the cells

4. Which of the following can be used as nanocarriers

(a) Liposomes, quantumdote

(b) Micelles, dendumers

(c) Microcapsules

(d) All the above

5. What is a potential benefit that could be achieved one day with 3D bio printing?

(a) To help patients who are in need of new tissues

(b) To aid in testing of new drug

(c) To reduce the risk of transplant rejection

(d) All of the above

(B) Fill in the blanks: (5 × 1 = 5)

6. Drugs with ———— therapeutic index are unsuitable for incorporation in controlled release formulation

7. Full form of MTT is ————

8. Expansion of PTI is ————

9. Particles used as pharmaceutical delivery systems are called as ————

10. ———— is the method of printing biomedical structure.



II. Answer the following : (5 × 2 = 10)

11. Define ADME

12. Define SCGE. Write about its uses.

13. What is chromotherapy? Add a note on its uses.

14. How will you define Bioconjugation? Give its importance.

15. Can you give some examples of Bioinks.

PART B — (5 × 5 = 25)

Answer the following, choosing either (a) or (b).

16. (a) Enumerate the different modes of drug delivery.

Or

(b) What are the sources of drugs?

17. (a) Write short notes on LDH release.

Or

(b) Explain in brief about cell viability. Write its clinical significance.

18. (a) Define cellular trafficking and add a note on its clinical significance.

Or

(b) Explain in brief about photodynamic therapy along with its applications.