


VIT

Vellore Institute of Technology

Final Assessment Test – April 2025

Course: TBIT309L - Medical Biotechnology

Class NBR(s): 2337

Time: Three Hours

Slot: G1+TG1

Max. Marks: 100

- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER

 Answer ALL Questions

(10 X 10 = 100 Marks)

- 1.a) This hormone was the first human recombinant product developed and approved in 1980s for therapeutic use. Sketch its production and product recovery using *E.coli*.

OR

- 1.b) This is the smallest microprocessor device which can be used for different tasks, from tracking to sensing. Write a detailed note on the components and working principle of this device.

- 2.a) This is one of the leading causes of cancer death worldwide in women. List out the pre disposing risk factors associated with this cancer.

OR

- 2.b) This progressive neurodegenerative disease is the common cause of dementia in elderly people. Describe the pathogenesis of this disease.
3. This type of hypersensitivity reaction involves deposition immune complexes on the basement membrane. Sketch the pathological mechanism of this allergic reaction.
4. Write a detailed note on the mechanisms of auto immune diseases with appropriate examples.
5. a) Explore the steps involved in the pathogenesis of microbial disease with an example. [5]
- b) Tabulate the differences between bacterial exotoxins and endo toxins. [5]
6. Add a note on the following. Provide example if necessary.
- Commensals
 - Fomites
 - Glycoprotein spikes
 - Lipopolysaccharide
 - Capsular polysaccharide
7. Explore the steps of DNA micro array technique and add a note on its applications.
8. Compare and contrast indirect and sandwich ELISA techniques.
9. Tabulate appropriate gene therapy protocols approved for the treatment of certain gene disorders/diseases worldwide.
10. Explore the current recombinant, RNA and cancer vaccines.

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