

QP Code: 625006

Reg. No.....

**Sixth Semester B. Pharm Degree Supplementary Examinations
March 2026**

Pharmaceutical Biotechnology

(2017 Scheme)

Time: 3 Hours

Max. Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw diagrams wherever necessary*

Essays

(2x10=20)

1. Explain fermentative production and purification of penicillin
2. Define biosensors. Discuss the different types of biosensors in pharmaceutical industries

Short Notes

(7x5=35)

3. Describe the steps involved in amplifying the fragment of DNA by Polymerase Chain Reaction
4. Explain the cells/proteins involved and the mechanisms of our second line of immune defence against antigens
5. Explain the production of Oral Polio Vaccines
6. Explain the aeration and agitation systems used in fermenters
7. Explain frame shift mutation with examples
8. Explain the process of ELISA
9. How does protein Engineering help in design of novel proteins

Answer Briefly

(10x2=20)

10. Define transduction
11. Explain innate immunity
12. Applications of plasma substitutes
13. Monoclonal antibodies
14. Southern blotting
15. Restriction endonuclease
16. Vitamin B₁₂ production
17. Fed batch fermentation
18. Difference between submerged and solid state fermentation
19. Lipase
