

NKT/KS/17/6583

**B.Pharm (Eight Semester) (C.B.S.) Examination**  
**PHARMACEUTICAL BIOTECHNOLOGY AND MOLECULAR BIOLOGY**  
**Paper—2**

Time : Three Hours]

[Maximum Marks : 80

- N.B. :—** (1) Question No. **1** is compulsory.  
(2) Solve any **four** questions from the remaining.  
(3) Draw neat labeled diagram wherever necessary.  
(4) Assume suitable data wherever necessary.  
(5) Discuss the reaction, mechanism wherever necessary.  
(6) Use of electronic calculator is permitted.

1. Solve any **five** : 5×4=20
  - (a) Explain cellular totipotency.
  - (b) Explain the Southern blotting.
  - (c) Write on Primary culture.
  - (d) Give an account on fermentation medium.
  - (e) Explain cross-linking.
  - (f) Give applications of immobilized cell.
  - (g) Write on Growth Hormones.
2. Define immobilization. Describe various methods of immobilization and discuss its Advantages and Disadvantages. 15
3. Explain in detail isolation of penicillin. 15
4. What is recombinant DNA Technology and enlist the tools for r-DNA Technology. 15
5. (a) Write about the different plant cell culture techniques. 10  
(b) Explain somatic cell fusion. 5
6. Define fermenter. Explain in detail construction, working and types of fermenter. 15
7. Write short notes (any **three**) :
  - (a) Polymerase chain reaction
  - (b) Cloning vector
  - (c) Insulin
  - (d) Colony Hybridization. 5×3=15