

**Total number of printed pages – 3**      **B. Pharm**  
**PH. 8.3**

## **Eighth Semester Examination – 2008**

### **PHARMACEUTICAL BIOTECHNOLOGY**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory  
and any **five** from the rest.*

*The figures in the right-hand margin  
indicate marks.*



1. Answer the following questions :      2 × 10
  - (i) What is passive and active immunity ?
  - (ii) Write down the mechanism involved in hypersensitivity reaction.
  - (iii) Differentiate between a haptan and antigen.

- (iv) What is a hybridoma ?
- (v) Write two advantages of microbial biotransformation.
- (vi) What is plasma substitute ? Give two examples.
- (vii) Write the advantages of monoclonal antibody.
- (viii) What is immunological tolerance ?
- (ix) Differentiate between vaccine and sera.
- (x) Differentiate between enzyme and catalyst.

2. Classify immunity with examples, write the various antigen, antibody reactions and a short note on humoral immunity.      3+4+4
3. Write down the method of preparation and storage of Vaccine.      10

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**Contd.**

4. What is genetic recombination ? Write down the process involved in it with their application. 10
5. Explain the design of a fermenter and fermentation process. What are the different control parameters? 10
6. Write down the process involved in fermentation and isolation of penicillin. 10
7. Briefly discuss about the techniques involved in the immobilisation of enzymes. 10
8. Discuss about the factors affecting the Kinetics of enzyme reaction. 10

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