



## M.Sc. II Semester Degree Examination, October - 2023

### BIOTECHNOLOGY

#### DSC7 : Bioprocess Engineering and Technology

#### (NEP)

Time : 3 Hours

Maximum Marks : 70

#### Instructions :

- (i) Answer **any five** of the following questions with Question No. **1** is **compulsory**, each question carries equal marks.
- (ii) Draw neat diagrams wherever necessary.

1. Give an account on process flow of penicillin production and purification. **14**
2. Discuss the industrial utilization of mixed cultures in biological waste water treatment. **14**
3. Give an account on physical and chemical sterilization methods. **14**
4. Write a detailed account on different operation and control of bioreactor system. **14**
5. Give an account on high performance liquid chromatography. **14**
6. (a) Give an account on environmental factors affecting growth kinetics. **7**  
(b) Give an account on media requirements for fermentation process. **7**
7. (a) Give an account on cell immobilization and its types. **7**  
(b) Discuss the advantages and disadvantages of filtration process. **7**
8. (a) Give an account on importance of mammalian cell culture in biopharmaceutical processes. **5**  
(b) Describe a photobioreactor with a diagram and explain its working. **5**  
(c) Give an account on agarose electrophoresis and add note on its applications. **4**

