Exam. Code : 107406
Subject Code : 1880

B.Sc. (Biotechnology) 6th Semester

BT-5 BIOPROCESS ENGINEERING-B

Time Allowed—3 Hours] [Maximum Marks—40

SECTION—A

(**All** questions are compulsory)

1. Define & Explain the following :

   (i) Geometric ratio of fermentor

   (ii) Aspect ratio of fermentor

   (iii) Control unit of fermentor

   (iv) Measurement unit of fermentor

   (v) Product recovery

   (vi) Down stream processing

   (vii) Aerobic slug

   (viii) Anaerobic slug. 1×8=8

SECTION—B

(Attempt any **five** questions)

2. Discuss how plug flow bioreactor behaves as batch bioreactor.

3. Discuss how plug flow bioreactor behaves as CSTBR bioreactor.

4. Discuss the pH probe of a bioreactor.

5. Explain how pH is standardized in bioreactor.

6. Discuss the industrial centrifugation kinetics.

7. Discuss the industrial centrifugation process.

8. Discuss the multistage UNOX system.

9. Discuss the UASB. 5×4=20

SECTION—C

(Attempt any **two** questions)

10. Discuss the steady state condition and its kinetics in CSTBR.

11. How will you measure the pH in the fermentation ? Explain. Write down the chemical reactions that take place at electrodes in pH probes.

12. By taking an example discuss and explain the supercritical fluid extraction processes.

13. Discuss the BAFS. 6×2=12