

Exam. Code : 107406

Subject Code : 2274

B.Sc. (Bio-Technology) 6th Semester

BIOPROCESS ENGINEERING—B

Paper—BT-5

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

Note :— Attempt *all* the questions.

1×8=8

1. Write short notes in about 50 words each :

(i) Geometrical ratio of fermenter

(ii) Containment levels

(iii) Biosafety levels

(iv) Sensors

(v) D.O. Probe

(vi) Sedimentation

(vii) BOD

(viii) COD.

SECTION—B

Note :— Attempt any *five* questions.

4×5=20

2. Discuss the temperature control of bioreactors.

3. Discuss the aeration of bioreactors.

4. Discuss the online sensors.

5. Discuss the safety valves used in bioreactors.
6. Discuss the precipitation methods of bioproducts in bioprocesses.
7. Discuss the industrial centrifugations.
8. Discuss the oxygen sag curves in downstream processing.
9. Discuss the disposal of effluents.

SECTION—C

Note :— Attempt any *two* questions. 2×6=12

10. Discuss the stirrer glands and bearings used in bioreactors designing.
11. Discuss the different types of sensors used in bioreactors.
12. Discuss the tangential filtration.
13. Discuss the different factors involved in effluent treatments.