



**HDV-003-1193002** Seat No. \_\_\_\_\_

**M. Sc. (Microbiology) (Sem. III) (CBCS) Examination**

November / December – 2017

**MICRO-314 : Fermentation Technology - I**

**Faculty Code : 003**

**Subject Code : 1193002**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

1 Answer the following : (Any **seven** out of Ten, each of 14  
02 marks)

- (1) What is perfusion culture?
- (2) Give advantages of disposable bioreactor.
- (3) Enlist advantages of continuous sterilization process.
- (4) What are qualities of an ideal biosensor?
- (5) What are molasses?
- (6) What is protoplast fusion?
- (7) What is Master Cell Bank?
- (8) What is turbidostate?
- (9) Why cryopreservation is important?
- (10) What consequences happen if contaminants enters in a fermentation vessel?

2 Answer the following : (Any **two** out of Three, each of 14  
07 marks)

- (a) What is Secondary Screening? Describe in detail.
- (b) How would you preserve industrially important microbes?
- (c) Write a note on "Aeration".

- 3** Answer the following : (Each of 7 marks) **14**
- (a) Define the term biosensor? Enlist its type and describe its applications.
  - (b) Describe components of an ideal bioreactor with its functions.

**OR**

- 3** Answer the following : (Each of 7 marks) **14**
- (a) Write a short note on batch fermentation process
  - (b) Discuss on "viral safety of biotechnological products".

- 4** Answer the following : (Each of 7 marks) **14**
- (a) What is agitation? Enlist types of agitators and describe any one in detail.
  - (b) Write a note on "Placket Burman design experiment for medium optimization".

- 5** Answer the following : (Any **two** out of four, each of 07 marks) **14**
- (a) What are aims and objectives of quality control test for preserved cultures?
  - (b) Describe crude carbon sources in detail.
  - (c) What are antifoam agents? How does anti foam work? Give examples of antifoam agents useful in fermentation industries.
  - (d) What is containment categorization and aseptic operation? Describe.