DP-003-1016011 Seat No. _____

Third Year B. Sc. (Sem. VI) (CBCS) (WEF-2016) Examination

March - 2022

MB-601 : Bioprocess Technology

Faculty Code : 003

Subject Code : 1016011

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 (A) Objectives : **4**

(1) Define: Screening.

(2) What is Recombinant DNA technology ?

(3) Define fermentation.

(4) Define: Protoplast.

(B) Answer in brief : (Any **one**) **2**

(1) Write down criteria for secondary screening of microbes.

(2) Why improvement of industrial microbes is important ?

(C) Answer in detail : (Any **one**) **3**

(1) Explain protoplast fusion.

(2) Range of fermentation processes.

(D) Write short note on : (Any **one**) **5**

(1) Economic aspects of fermentation technology.

(2) Isolation methods using selection of desired characters.

2 (A) Objectives : **4**

(1) Define- synthetic media.

(2) What is molasses ?

(3) What are antifoam agents ?

(4) Define: Precursor with example.

(B) Answer in brief : (Any **one**) **2**

(1) Define: Inoculum media.

(2) Which type of growth regulators used in fermentation media ?

(C) Answer in detail : (Any **one**) **3**

(1) Explain carbon sources of fermentation media.

(2) Explain nitrogen sources of fermentation media.

(D) Write short note on : (Any **one**) **5**

(1) Media optimization.

(2) Explain media and its types.

3 (A) Objectives : **4**

(1) Enlist some methods for media sterilization.

(2) What is the role of baffle in fermentor ?

(3) Define: Aeration.

(4) How to achieve steady state condition in continuous culture?

(B) Answer in brief : (Any **one**) **2**

(1) What is Del factor ?

(2) Draw a labeled diagram of bioreactor.

(C) Answer in detail : (Any **one**) **3**

(1) Basic functions of fermentor and criteria for its design.

(2) Explain: Tower fermentor.

(D) Write short note on : (Any **one**) **5**

(1) Explain continuous fermentation.

(2) Explain sterilization of fermentor, medium and air in fermentation industry.

4 (A) Objectives : **4**

(1) Which method generally used for broth conditioning ?

(2) Define: supercritical fluid.

(3) Protein can be separated from salt using _____ method.

(4) What is sedimentation ?

(B) Answer in brief : (Any **one**) **2**

(1) How Precepitatian process used for cell separation ?

(2) How centrifugation helps in cell separation ?

(C) Answer in detail : (Any **one**) **3**

(1) Solvent recovery method.

(2) Chemical Assay of fermentation product.

(D) write short note on : (Any **one**) **5**

(1) Explain biological assay of fermentation product.

(2) Methods for cell disruption.

5 (A) Objectives : **4**

(1) Which organism used to produce citric acid ?

(2) Alcohol fermentation occur under _____ condition.

(3) _____ organism used for alcohol fermentation.

(4) What is the mode of action of penicillin ?

(B) Answer in brief : (Any **one**) **2**

(1) Why industrial production of analyse is important ?

(2) Write down applications of citric acid.

(C) Answer in detail : (Any **one**) **3**

(1) Explain how Ethyl alcohol produce ?

(2) Explain production of Penicillin.

(D) Write short note on : (Any **one**) **5**

(1) Immobilization in fermentation process.

(2) Production of Riboflavin.
