



JA-003-1016011

Seat No. _____

**Third Year B. Sc. (Sem. VI) (CBCS)
(W.I.F. 2016) Examination**

August – 2019

**Microbiology : MB - 601
(Bioprocess Technology) (New Course)**

Faculty Code : 003

Subject Code : 1016011

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

[Total Marks : 70

1 (A) Answer specifically :

- (1) Which chemical is added in media for screening of organic acid producer bacteria?
- (2) Give two uses of Yeast at industrial scale.
- (3) Enlist any four transformation processes carried out by bacteria.
- (4) In which phase of growth Primary Metabolites are produced?

(B) Answer in brief : (Any **One** out of Two)

- (1) Define Primary screening with example.
- (2) What is protoplast?

(C) Answer in detail : (Any **One** out of Two)

- (1) What is Secondary Screening ?
- (2) Give Component parts of fermentation process.

(D) Write note on : (Any **One** out of Two)

- (1) Range of Fermentation
- (2) Improvement of Industrially important microbes by Recombinant RNA Technology

- 2 (A) Answer specifically :
- (1) Give two examples of chelators.
 - (2) Organic Nitrogen can be supplied in fermentation media as _____
 - (3) What are Antifoam agents?
 - (4) The production of Streptomycin by Streptomyces griseus can be induced by _____ to produce Beta mannosidase which will convert mannosidostreptomycin into Streptomycin.
- (B) Answer in brief : (Any **One** out of Two)
- (1) What is Inoculum medium ?
 - (2) What is Synthetic media?
- (C) Answer in detail : (Any **One** out of Two)
- (1) Discuss Oils and fats as substrate in fermentation.
 - (2) What are Buffers? Give their role in fermentation process.
- (D) Write note on : (Any **One** out of Two)
- (1) Crude carbon and Nitrogen sources in fermentation
 - (2) Media formulation
- 3 (A) Answer specifically :
- (1) Give example of any two types of impellers.
 - (2) What is Containmentment ?
 - (3) Define : del factor
 - (4) What is Fermenter ?
- (B) Answer in brief : (Any **One** out of Two)
- (1) What is Agitation ? Which device is used for it ?
 - (2) What is Air Sterilization ?

- (C) Answer in detail : (Any **One** out of Two)
- (1) Air Lift Fermenter
 - (2) Tower Fermenter
- (D) Write note on : (Any **One** out of Two)
- (1) Basic functions of a fermenter
 - (2) Batch And Continuous Fermentation
- 4 (A) Answer specifically :
- (1) Enlist types of Chromatography used in purification of fermentation products.
 - (2) Give two examples of centrifuges.
 - (3) Enlist mechanical methods of cell disruption.
 - (4) Give three stages of Distillation.
- (B) Answer in brief : (Any **One** out of Two)
- (1) What is ultra sonication ?
 - (2) What is Super critical fluid extraction ?
- (C) Answer in detail : (Any **One** out of Two)
- (1) Discuss types of centrifuges
 - (2) Enlist chemical methods of purification of fermentation products. Discuss any one in detail.
- (D) Write note on: (Any **One** out of Two)
- (1) Filtration in Fermentation process
 - (2) Biological assay in fermentation
- 5 (A) Answer specifically :
- (1) What is Immobilization ?
 - (2) What are Alcoholic Beverages ?
 - (3) Enlist Bacteria producing Organic acids.
 - (4) Enlist Protease producer fungi.

(B) Answer in brief : (Any **One** out of Two)

- (1) Give Major steps of Streptomycin fermentation.
- (2) How Lysine is produced ?

(C) Answer in detail : (Any **One** out of Two)

- (1) Discuss any three Techniques of Immobilization.
- (2) Discuss production of Citric acid.

(D) Write note on : (Any **One** out of Two)

- (1) Alcohol fermentation
 - (2) Penicillin fermentation.
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