

Seat No. : \_\_\_\_\_

# MO-135

March-2019

B.Sc., Sem.-VI

## CC-309 : Biotechnology (Microbial)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) List criteria for selection of industrial organisms and discuss methods for screening. 14

OR

- (1) Explain source and content of raw materials used for fermentation process. 7  
(2) Differentiate media used in industries from laboratory media with examples. 7

- (B) Answer any **four** of the following in brief : 4

- (1) Which method is used for sterilization of industrial bioreactor ?  
(2) Give examples of antifoam agents used in fermentation process.  
(3) Which ingredients serve as source of protein and vitamins in nutrient broth ?  
(4) Name the method used to sterilize Antibiotics and Vitamins.  
(5) Manipulating microbial strains in order to enhance metabolic capabilities is known as  
(a) Strain inoculation  
(b) Strain improvement  
(c) Strain selection  
(d) None  
(6) What is containment in bioprocess ?

2. (A) Write note on edible uses of Fungi and Yeasts and citing their nutritional importance. 14

OR

- (1) Describe production of Bakers yeasts and its uses. 7  
(2) Discuss process for production of legume inoculant. 7

- (B) Answer any **four** of the following in brief : 4

- (1) Give one application of *Chaetoceros* aglae.  
(2) Name each of free-living and symbiotic nitrogen fixing bacteria.  
(3) Name two microbes used as bioinsecticides.  
(4) Which mushroom species is regarded highly poisonous ?  
(5) Name the media is used for the production of *Bacillus thuringiensis*.  
(6) Which biochemical process makes dough to rise during bread-making ?

3. (A) Define primary metabolites and explain production of any one commercially important primary metabolite. 14

**OR**

- (1) Discuss how genetic manipulation helps overproducing amino acids with examples. 7
- (2) Explain two-stage process for production of alcohol with diagram. 7

- (B) Answer any **three** of the following in brief : 3

- (1) Chemically, Acetone is
- (a) Alcohol
  - (b) Ketone
  - (c) Aldehyde
  - (d) Ester
- (2) Which disease is caused by Vitamin B12 deficiency ?
- (3) Name microbes widely used for production of acetone butanol.
- (4) Essential amino acids are secondary metabolites. (True/False)
- (5) What are deregulatory mutants ?

4. (A) 'Wide potential exists for the production of secondary metabolites by Strain improvement.' Discuss. 14

**OR**

- (1) Describe process and significance of fermentative production of Polyester. 7
- (2) Discuss biosynthetic reactions and mode of action of any one antibiotic. 7

- (B) Answer any **three** of the following in brief : 3

- (1) Xanthane gum is produced from which microbes ?
- (2) Name medicinally important chemicals found as Ergot alkaloid.
- (3) List two fungal secondary metabolites of economic importance.
- (4) Which microbes are used to produce Cephalosporin and Rifamycin ?
- (5) Give example of bacteria which synthesizes Sterol.
-