3007M127

Candidate's Seat No : _____

B.Sc. Sem.-6 Examination

CC - 309

Bio-Technology

July 2021

Time : 2-00 Hours] [Max. Marks : 50

1. (A) Describe culture media ingredients and formulation used for industrial fermentation. 7
   (B) Explain process for sterilization of Air for fermentation process. 7
2. (A) Explain selection and screening of industrially important organisms. 7
   (B) Describe the methods used in strain improvement of industrial cultures. 7
3. (A) Describe medium, process and recovery for the production of SCP. 7
   (B) Write note on cultivation of common edible mushrooms. 7
4. (A) Describe the fermentative production of Bacillus thuringiensis. 7
   (B) Explain medium and fermentation process of yeasts biomass. 7
5. (A) Describe overproduction of amino acids by physiological manipulation limiting biotin concentration. 7
   (B) Describe the fermentative production of Vitamin B12. 7
6. (A) Explain overproduction of amino acids using auxotrophic mutants. 7
   (B) Explain two-stage process for the fermentative production of Alcohol. 7
7. (A) What is secondary metabolism ? Explain production and genetic control of secondary metabolism. 7
   (B) Explain uses of ergot alkaloids and its microbial production. 7
8. (A) Discuss in detail the fermentative production of Xanthan gum. 7
   (B) Describe the fermentative production of Cephalosporin. 7

9. Answer the followings (Any Eight) 8

Q-1 Select the one that is not a fermentation product:

A Antibiotics
B Citric Acid
C Alcohol
D Sucrose

Q-2 Which of the following is/are the substrate/s used as a carbon source in fermentation Industry?

A Molasses
B Malt Extract
C Methanol
D All of the above

Q-3 What is the role of antifoaming agent in fermentation technology?

A They are used to control oxygen level of the medium
B They are used to maintain the temperature of the medium
C They are used to lower the surface tension of the medium
D All the above

Q-4 Sterilization of the media is most commonly achieved by:

A Lyophillization
B Heat sterilization
C Incineration
D Boiling

Q-5 The most common method used for citric acid production is----------.

(P.T.O)

M127-2

A Surface fermentation
B Submerged fermentation
C Both A & B
D None

Q-6 Which of the following is a good source of nitrogen as well as growth factors?
A Urea
B Ethanol
C Yeast extract
D Dextrin

Q-7 Baker's yeast production is carried out by:
A An aerobic fed-batch process
B ICI pressure cycle fermenter
C Both (A) and (B)
D None of the above

Q-8 Which of the following organisms is not used for the production of citric acid?
A Aspergillus wentii
B Candida oleophila
C Saccharomyces cerevisiae
D Candida oleophila

Q-9 Whey is rich in which carbohydrate?
A Glucose
B Lactose
C Fructose
D Sucrose

Q-10 ---------- the analogue of valine used in the repression of Salmonella sp.
A Leucine
B Isoleucine
C Trifluoroleucine
D Cephamycin

Q-11 Microbial biomass or protein extract used as food or feed additive
A Yeast Extract
B Single cell protein
C Peptone
D All the above

Q-12 Identify the RNA synthesis inhibitor from the following:
A Tetracyclins
B Cephalosporins
C Rifamycin
D Puromycin

M127-3

Q-13 A novel technology developed to produce SCP by utilizing starchy wastes by yeasts is known as:

A Symba process
B ICI pressure cycle fermenter
C Subterminal oxidation
D None of the above

Q-14 The term used for the mushroom inoculum containing spores and/or small pieces of fruiting body is:

A Compost
B Agaricus bisporus
C Phallin and muscarine
D Spawn

Q-15 Overproduction of secondary metabolites based on genetic engineering are

A Mutation
B Recombination
C Molecular genetic improvement
D All of these

Q-16 What is Sulfite waste liquor?

A It is a by-product of corn wet-milling
B It is a finely ground, yellow flour made from the embryo of cottonseed
C It is the spent sulfite liquor from pulp and paper industry
D All the above

Q-17 Sterols are :

A Organic molecules
B Occur naturally
C Cholesterol
D All of these

Q-18 The terminology used to describe the type of algal culture is:

A Indoor/Outdoor
B Batch, continuous and semi-continuous
C Axemic/Xenic
D All the above

Q-19 Xanthan is commercially produced by----------

A Pseudononas aeruginosa
B Xanthomonas campestris
C Pseudomonas elodea
D Leuconostoc mesenteroides

Q-20 Optimum growth of Rhizobia occurs at _____temperature.

A 15 to 20 ^{0}C
B 28 to 30 ^{0}C
C 35 to 37 ^{0}C
D 10 to 15 ^{0}C