



DBB-003-001526

B. Sc. (Sem. V) (CBCS) Examination

April / May – 2015

Microbiology - MB - 502

(Bioprocess Technology) (New Course)

Faculty Code : 003

Subject Code : 001526

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

[Total Marks : 70

- Instructions :
- (1) Figures in the right indicate marks.
 - (2) All questions are compulsory.
 - (3) Write answers of all questions in main answer sheet
 - (4) Draw diagram wherever necessary.

SECTION - I

1 Multiple Choice Questions : 20

- (1) Classification of isolates is carried out in _____ screening programme.
 - (A) Isolation
 - (B) Primary
 - (C) Secondary
 - (D) None of above
- (2) An aqueous extract of malted bailey is known as _____
 - (A) Barley extract
 - (B) Cude banley
 - (C) Malt extract
 - (D) None

- (3) Surface active agent used in fermentation medium is acting as _____.
- (A) Reducing agent
 - (B) Foam controller
 - (C) Antifoam agent
 - (D) None
- (4) Fermentation medium must not affect the _____ of organisms.
- (A) Genetic
 - (B) Physiology
 - (C) Morphology
 - (D) Above all
- (5) _____ is an example of crude antifoam agent.
- (A) Beet extract
 - (B) Sugar syrup
 - (C) Oil
 - (D) None
- (6) CaCO_3 is a chemical indicator in primary screening of _____ products.
- (A) Organic acid
 - (B) Enzyme
 - (C) Antibiotic
 - (D) None
- (7) Production media are balanced for only _____ formation.
- (A) Growth and product
 - (B) Product
 - (C) Only product
 - (D) None

- (8) Proper mixing in Biovessel is supported by
- (A) Foam broker
 - (B) Sparger
 - (C) Both (A) and (B)
 - (D) Agitator
- (9) Aeration in Bioreactor is provided by _____
- (A) Impeller
 - (B) Fan
 - (C) Aerators
 - (D) Sparger
- (10) Cell disruption is carried out by _____ method.
- (A) Batch method
 - (B) Mechanical
 - (C) Non mechanical
 - (D) (B) and (C)
- (11) Term "fermentation" is derived from
- (A) Latin Verb
 - (B) Greek Verb
 - (C) English
 - (D) None
- (12) There are _____ component parts of fermentation process.
- (A) Four
 - (B) Six
 - (C) Eight
 - (D) None

- (13) _____ is an example of primary metabolite.
- (A) Methanol
 - (B) Antibiotic
 - (C) (A) and (B)
 - (D) None
- (14) _____ is one of the techniques for strain improvement programme
- (A) Screening
 - (B) Enrichment
 - (C) DNA recombinant technique
 - (D) None
- (15) Which of the following is correct for baffle size ?
- (A) 1/4 size bioreactor
 - (B) 1/2.5 size bioreactor
 - (C) 1/6 size of bioreactor
 - (D) None
- (16) Which fermentation is unprotected process ?
- (A) Ethanol fermentation
 - (B) Citric acid fermentation
 - (C) Acetic acid fermentation
 - (D) None
- (17) Microencapsulation is technique for immobilization of _____
- (A) Bacteria
 - (B) Spore
 - (C) Product
 - (D) Cells

- (18) Cold sterilization can be done by_____.
- (A) Filtration
 - (B) Antibiotics
 - (C) (A) and (B)
 - (D) Pasteurization in cold
- (19) Phenyl acetic acid is used as _____.
- (A) Inducer
 - (B) Stimulater
 - (C) Precursor
 - (D) None
- (20) Results of Bioassay response as _____ and stimulators.
- (A) Protector
 - (B) Inhibitor
 - (C) Inducer
 - (D) None

SECTION - II

- 2 (a) Answer in short : (any three) 6
- (i) Role of Impeller in Bioreactor,
 - (ii) Which yeast produces best alcohol ?
 - (iii) Role of precursor in fermentation process
 - (iv) Continuous fermentation
 - (v) Beet Molasses
 - (vi) Primary Metabolites

- (b) Answer specifically : (any three) 9
- (i) Give applications of amylase enzymes.
 - (ii) Protoplast fusion technique.
 - (iii) Cooling system of Bioreactor
 - (iv) Drawback of Batch fermentation
 - (v) Importance of Inoculum media
 - (vi) Role of Sporulating medium
- (c) Write short notes on : (any two) 10
- (i) Various methods for strain improvements
 - (ii) Criteria for secondary screening
 - (iii) Crude antifoam agents
 - (iv) Cold sterilization of fermentation media
 - (v) Protoplast fusion merits.
- 3 (a) Answer in short : (any three) 6
- (i) Principle of solvent recovery
 - (ii) Techniques of cell disintegration
 - (iii) Types of Bioreactor
 - (iv) Diffusion assay
 - (v) Application of citric acid
- (b) Answer specifically : (any three) 9
- (i) Methods used for estimation of fermented product.
 - (ii) Define two phase aqueous extraction system.
 - (iii) Name immobilization techniques for enzymes and cell.

- (iv) Reverse osmosis
- (v) Method of "alcohol recovery".
- (vi) Names of chemical methods for fermentation
product estimation

(c) Write short notes on : (any two) 10

- (i) Fermentation - production of Lysine.
- (ii) Fermentation - production of antibiotic - streptomycin.
- (iii) Criteria for economic aspects of fermentation industry.
- (iv) Raw materials - Crude Nitrogen sources.
- (v) Types of Bioreactors.
