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RO-003-001526 Seat No. _____

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

February - 2019

MB - 502 : Bio-process Technology

(Old Course)

Faculty Code : 003

Subject Code : 001526

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

Instructions : (1) All Questions are compulsory

(2) Figures at the right side indicate total marks

(3) Draw the figure wherever necessary

(4) All the answers must be written in the main answer sheet only.

1 Answer following questions in short : **20**

(1) What is Protoplast?

(2) Give the function of Impeller.

(3) Define: Secondary screening

(4) What is Strain improvement?

(5) What is the function of antifoam agent in Fermentation process?

(6) What is Media Optimization?

(7) Write the example of Growth regulators used in fermentation process.

(8) What is Inoculum?

(9) Write the function of agitator in fermentation process.

(10) What is sparger?

(11) Define : Bioreactor

(12) List the component of Bioreactor

(13) What is Bioassay?

(14) Which are the methods used for the separation of cell from fermentation?

(15) What is Scale up?

(16) What is Downstream Processing?

(17) _____ organism used as a starter culture in citric acid fermentation.

(18) Riboflavin is also known as _____

(19) What is Lysine?

(20) Define: Immobilization.

2 (A) Answer briefly : (Any **Three**) **6**

(1) How to isolate the industrially important microorganism?

(2) Which are nitrogen sources of media used in fermentation?

(3) What is Agitator?

(4) Write need of cell disruption.

(5) What is two-phase aqueous extraction?

(6) Which organisms are used as a starter culture in penicillin fermentation?

(B) Write following answer in brief : (Any **Three**) **9**

(1) Write a note on History of fermentation

(2) Discus Media formulation

(3) How to sterilize the media used in fermentation process?

(4) Explain any one cell separation method

(5) Discuss physical assay of fermentation process

(6) Write advantages of immobilization of cell.

(C) Write Note on following : (Any **Two**) **10**

(1) Explain primary screening in detail.

(2) Explain in detail media formulation.

(3) Explain in detail types of Bioreactors.

(4) Explain in detail mechanical method of cell disruption.

(5) Discuss in detail Citric acid fermentation.

3 (A) Answer briefly : (Any **Three**) **6**

(1) What is range of fermentation?

(2) Write application of Amylase?

(3) Draw the labeled diagram of design of fermentor.

(4) What is downstream processing?

(5) What is distillation technique?

(6) What is batch fermentation?

(B) Write following answer in brief : (Any **Three**) **9**

(1) Discuss component part of fermentation process.

(2) Write differences between batch fermentation and continuous fermentation

(3) Which are the types of sparger?

(4) Explain super critical fluid extraction.

(5) Discuss preparation of Inoculum.

(6) Write note on chemical assay of fermentation product.

(C) Answer briefly : (Any **Two**) **10**

(1) Explain in detail Strain improvement technique

(2) Discuss in detail types of media used in fermentation.

(3) Explain in detail medium sterilization.

(4) Explain in detail Bioassay of fermentation product.

(5) Explain in detail antibiotic fermentation with suitable example.
