



PAP-003-1015033 Seat No. _____

B. Sc. (Sem. V) (CBCS) (W.I.F.2016) Examination

October / November - 2018

BT - 501 : Bioprocess & Biochemical Engineering

(New Course)

Faculty Code : 003

Subject Code : 1015033

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

[Total Marks : 70

- 1 (A) Objective type questions : 4
- (1) In transition which nitrogenous base pair are exchanged.
 - (2) Adenine analogue 2 aminopurine is bind with _____
 - (3) Lyophilisation technique is also called _____
 - (4) Amino acid is _____ metabolites.
- (B) Answer in brief : (any **one** out of two) 2
- (1) Define primary and secondary metabolites.
 - (2) Explain mis sense mutation
- (C) Answer in detail : (any **one** out of two) 3
- (1) Explain any one preservation technique
 - (2) Explain crowded plate method.
- (D) Write a note on : (any **one** out of two) 5
- (1) Write down the application of R-DNA technology.
 - (2) Explain spontaneous mutation.
- 2 (A) Objective type questions : 4
- (1) Which scientist developed the cyclone column particularly for growth of filamentous cultures.
 - (2) _____ is used in fermentor to prevent vortex formation.

- (3) Which antifoaming agent used in fermentation process ?
- (4) An artificial mean to mix medium is called _____.
- (B) Answer in brief : (any **one** out of two) **2**
- (1) What is diauxy?
- (2) Draw and enlist the part of typical fermentor.
- (C) Answer in detail : (any **one** out of two) **3**
- (1) Explain the kinetics of product formation in batch fermentation.
- (2) Write down the note on agitation.
- (D) Write a note on : (any **one** out of two) **5**
- (1) Explain tower fermentor.
- (2) Enlist and explain the method used for the determination of KLa.
- 3** (A) Objective type questions : **4**
- (1) Which chelator we will used in media preparation?
- (2) Peptone is source for _____.
- (3) Which raw materials used for 'C' source?
- (4) Direct heat exchanger is also called _____.
- (B) Answer in brief : (any **one** out of two) **2**
- (1) Write down the need of sterilization.
- (2) Explain crude and synthetic media.
- (C) Answer in detail : (any **one** out of two) **3**
- (1) Define filtration and give its types.
- (2) Explain nitrogen source.
- (D) Write a note on : (any **one** out of two) **5**
- (1) Explain media optimization.
- (2) Write down the note on automation.

- 4 (A) Objective type questions : 4
- (1) Give the full form of HPLC.
 - (2) Polytetra fluoro ethylene (PTFE) is also known as _____
 - (3) Fixed pore filter is called _____ filter.
 - (4) Write down the name of non mechanical cell disruption method.
- (B) Answer in brief : (any **one** out of two) 2
- (1) Define crystallization.
 - (2) Explain flotation and flocculation.
- (C) Answer in detail : (any **one** out of two) 3
- (1) Explain centrifugation.
 - (2) Give the overview of downstream process.
- (D) Write a note on : (any **one** out of two) 5
- (1) Write down the note on fermentation economics.
 - (2) Explain distillation method.
- 5 (A) Objective type questions : 4
- (1) Expand SSF.
 - (2) _____ strain is used for production of citric acid.
 - (3) Cabbage is most important in _____ production.
 - (4) The sodium alginate is provide matrix for cell immobilization. TRUE/FALSE.
- (B) Answer in brief : (any **one** out of two) 2
- (1) Write down the commercial use of citric acid.
 - (2) Write down the ingredient of bread fermentation.

- (C) Answer in detail : (any **one** out of two) **3**
- (1) Explain the properties of supporting matrix used in immobilization.
 - (2) Explain product recovery of ca-gluconate fermentation.
- (D) Write a note on : (any **one** out of two) **5**
- (1) Explain the fermentation of alcohol.
 - (2) Explain the fermentation of L-lysine.
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