

B.E. / B.TECH. Degree examinations, December 2020

Third Semester

**BT18303 – Basic Industrial Biotechnology**

(Regulation 2018)

Time: Three Hours

Maximum : 80 Marks

Answer **ALL** questions

**PART A - (8 X 2 = 16 Marks)**

1. Yield coefficient represents
  - a) Production time of biomass or product
  - b) Rate of product formation
  - c) Conversion rate of a substrate into biomass or product
  - d) Conversion efficiency of a substrate into product
2. For the recovery of citric acid after fermentation,  $\text{Ca}(\text{OH})_2$  is added to the slurry to
  - a) Precipitate calcium carbonate
  - b) Precipitate calcium sulphate
  - c) Precipitate calcium citrate
  - d) Precipitate calcium phosphate
3. Most biopolymers produced by micro-organisms are
  - a) Exopolysaccharides
  - b) Histones
  - c) Nucleic acids
  - d) Cell wall constituents
4. The hybridomas are made by
  - a) Fusing T cells with myeloma cells
  - b) Fusing B cells with myeloma cells
  - c) Fusing T helper cells with myeloma cells
  - d) Fusing B memory cells with myeloma cells
5. Define 'Trophophase' with illustration of Growth Curve.
6. What is the difference between Quinolone and Quinoline.
7. What is the importance of Quality Control in production of pharmaceutically important enzymes?
8. Analyse the different ways by which rDNA could be used in the medical field.

**PART B - (4 X16 = 64 Marks)**

9. (a) Write a detailed note on Flow Charts & Block diagram used in Process industry with suitable example. (16)

**(OR)**

- (b) Explain the advantage of modern biotechnology over traditional biotechnology. Discuss the production of any one modern biological product using rDNA technology. (16)

- 10 (a) Elaborate the industrial production of citric acid with pictorial representation of the upstream and downstream steps involved in production. (16)

**(OR)**

- (b) Name the enzymes play a major role in leather industry and Elaborate the industrial production of any one of the enzymes with process flow diagram. (16)

- 11 (a) What are the steps involved in the discovery of new antibiotic. Explain in detail the upstream and downstream processing of penicillin with the help of flow sheet. (16)

**(OR)**

- (b) Describe the biochemistry and microbiology of alkaloids production. (16)

- 12 (a) Discuss the advantages of bio pesticides over inorganic pesticides and also describe the steps involved in the production and formulation of Bt spores. (16)

**(OR)**

- (b) What are the strategies followed for bioprocessing of plant cell culture mass production? (16)