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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- Feb 2020

B.Tech VI Semester

COURSE CODE: 16B11BT611

MAX. MARKS: 15

COURSE NAME: Downstream Processing

COURSE CREDITS: 04

MAX. TIME: 1 Hr.

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

[CO I]

1. a) How the Downstream Processing of any product impact the economy of the whole process? [1.5]
- b) How the solid state fermentation is more economical as compared to submerged fermentation. [1.5]

[CO II]

2. a) How the extracellular products purification is advantageous over the intracellular products? [2]
- b) Draw a flow chart for the downstream processing of an intracellular protein. [2]

[CO IV]

3. If a protein mixture contains two proteins A and B with pI 5.0 and 6.0. How their solubility affect with change in pH of the buffer system? [1]
4. a) How does the use of filter aid improve the filtration? [2]
- b) List at least 6 factors with their effect over the rate of filtration. [3]
5. Small food particles with diameter 10^{-2} mm and density 1.03 g cm^{-3} are suspended in liquid of density 1.00 g cm^{-3} . The viscosity of the liquid is 1.25 mPa s . A tubular-bowl centrifuge of length 70 cm and radius 11.5 cm is used to separate the particles. If the centrifuge is operated at 10,000 rpm, estimate the feed flow rate at which the food particles are just removed from the suspension. [2]