

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

B.Tech-VI Semester (BT)

COURSE CODE: 18B11BT611

MAX. MARKS: 15

COURSE NAME: Downstream Processing

COURSE CREDITS: 04

MAX. TIME: 1 Hour

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Marks are indicated against each question in square brackets. Write your answers to the point.*

- Q1. How the initial concentration of product and its desired purity level affect the price of the final product?  
[CO1] [1.5]
- Q2. Whether solid state fermentation is more economical than the submerged fermentation? Justify your answer.  
[CO1] [1.5]
- Q3. Why reduction in the number of passes through the homogeniser is usually preferred?  
[CO2] [1.5]
- Q4. Why lysozyme is more effective in lysing gram positive bacteria compared to gram negative bacteria?  
[CO2] [1.5]
- Q5. When the particle size is reduced by one fourth while other properties of the sample is same then how the terminal settling velocity will get change?  
[CO3] [2]
- Q6. A centrifuge rotor is spinning at 5000 RPM. The top of the cell is 6 cm from the rotor's central axis and the bottom of the cell is 10 cm from the central axis. What are the g forces on a particle found at the centre of the tube?  
[CO3] [2]
- Q7. The density range for the microbial cells is 1.05- 1.15 g/cm<sup>3</sup> whereas for the nucleic acid is 1.7 – 2.00 g/cm<sup>3</sup>. Which will settle down faster, microbial cells or nucleic acid? Give the appropriate reasons for your answer.  
[CO3] [1+2]
- Q8. How the following factors affect the rate of filtration? How can you modulate these factors to improve the rate of filtration?  
[CO4] [2]
- a) Compressible Filter Cake
  - b) Fluid Viscosity