

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

M.Tech-II Semester (BT)

COURSE CODE (CREDITS): 14M11BT211 (03)

MAX. MARKS: 15

COURSE NAME: INDUSTRIAL BIOTECHNOLOGY

COURSE INSTRUCTORS: Dr. Garlapati Vijay Kumar

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

1. The history of industrial Biotechnology roots from ancient times and some of the discoveries boosted the industrial biotechnology to greater heights. Write the briefly the happened events in the discovery/invention of "Penicillin", "Pasteurization" and "Fed-batch Fermentation" along with the names of credited scientists? (3 M)
2. What are the characteristics of microbial production of pharmacological agents / secondary metabolites? Give any two examples for "antibiotics", "enzyme inhibitors" and "Immunosuppressants"? (3 M)
3. The bioprocess products will get from the cultivation of animal cell, plant cell and microbial cell cultivations. Discuss briefly how microbial cell cultivation characteristics differ with the plant cell and animal cell cultivations? (3 M)
4. Which microbes prefer submerged fermentation and solid state fermentations? Give a note on comparative characteristics of SSF and SmF in a tabular form & Biotechnological advantages and its consequences of SSF over SmF? (3 M)
5. Write about the following ones about enzymes utilization in (3 M)
 - (a) Biopulping and biobleaching industries (1.5 M)
 - (b) Medical sector as therapeutic agents (1.5 M)

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