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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T2 Examinations- April 2018

BTDD

COURSE CODE: 14I11BT811

MAX. MARKS:25

COURSE NAME: Bioprocess Plant Design

COURSE CREDITS: 3

MAX. TIME: 1.5 h

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

1. Write about the different complexities which impact scaling of bioreactors? What are the different characteristic time constants used for conversion and transport processes during scale-up? (5 M)
2. Discussed about the three procedures enforced by WHO to ensure the Prions-free conditions in case of sterilizing the heat-resistant medical devices? Mention the equations used to get the approximation of probability of unsuccessful fermentation? (5 M)
3. Write about the consequences of "Foaming" in case of Bioreactor operation? Discuss about the main types of impellers used in CSTR's? (5 M)
4. Write the relationship between the circulation time and mixing time in case of CSTR, Internal-. External- loop or lift reactors? Mention the relationship between K_{LaL} AND K_{LaD} in case of designing bioreactors for plant cells? (5 M)
5. What are the familiar problems encountered during culturing of plant cells in Bioreactors? Mention the names of models used to describe the non-Newtonian fluids with equations? (5 M)

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