

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MSC.
BRANCH: BIOTECH.

SEMESTER : I
SESSION : MO/18

SUBJECT: BT409 INDUSTRIAL BIOTECHNOLOGY

TIME: 3 hrs.

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
-

- Q.1(a) Describe the process parameters for growth of a bacterium in batch mode. [2]
Q.1(b) Define $Y_{x/s}$; $Y_{p/x}$ and $Y_{p/s}$. [4]
Q.1(c) Analyze various techniques for improvement of microbes responsible for biochemical productions. [4]
- Q.2(a) Evaluate the production process in fed batch culture of reactor operation. [5]
Q.2(b) Analyze the process variables in SmF and SSF. [5]
- Q.3(a) Discuss the process of synthesis of citric acid. [5]
Q.3(b) What are the prominent characteristics for production of penicillin-G? [5]
- Q.4(a) What are primary metabolites? Illustrates schematically production of butanol? [5]
Q.4(b) Explain the production process of vitamin -A. [5]
- Q.5(a) Comments on significance of utilization of biomass for ethanol production. [2]
Q.5(b) Evaluate the significance of biogas cycle for production of methane. [4]
Q.5(c) Propose a method for degradation of environmental pollutant. [4]

:::::07/12/2018 M:::::