

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
 TEST -3 EXAMINATION- DECEMBER-2017
 B.Tech 3rd Semester (BT/BI)

COURSE CODE: 10B11BT313
 COURSE NAME: Microbiology
 COURSE CREDITS: 04

MAX. MARKS: 35

MAX. TIME: 2 Hrs

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

Q1: a) Describe the events that take place during conjugation (*E. coli*) between an:-
 i) Hfr Cell and an F⁻ Cell
 ii) F⁺ Cell and F⁻ Cell
 iii) F' Cell and F⁻ Cell
 iv) F⁻ Cell and Hfr Cell
 b) Describe and illustrate the process of specialized transduction. (4+3)

Q2: a) Draw a typical growth curve and label the various phases. Discuss the factors that determine the beginning and end of each phase.
 b) Explain the pattern and significance of diauxic growth in microorganisms.
 c) How the microorganisms will be affected by sub-zero temperature? (4+2+1)

Q3: a) Explain the methods of short term and long-term maintenance and preservation of microbial cultures.
 b) Design an enrichment medium to isolate nitrogen-fixing bacteria.
 c) Discuss the application of microorganisms as biofertilizers. (4+2+1)

Q4: a) "Explain the Entner-Doudoroff pathway of glucose catabolism in prokaryotes.
 b) Glucose is formed by different bacteria and by many different ways." Comment on the statement giving examples. (3.5+3.5)

Q5: a) What contributions did each of the following persons make in the field of Microbiology:-
 i) Ehrlich ii) Fleming
 b) Indicate the various toxic derivatives of oxygen and explain how aerobic organisms might protect themselves against these derivatives?
 c) How will you specifically isolate fungi from soil sample? (3+3+1)