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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- Oct 2018

B.Tech III Semester

COURSE CODE: 14B11BI311

MAX. MARKS: 25

COURSE NAME Microbiology and Immune System

COURSE CREDITS: 4

MAX. TIME: 1Hr 30Min

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

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Q1. Starting with 12 cells/ml in rich nutrient medium, with 2 hour lag phase and a 30 min generation time, how many cells would there be in 1 litre of the culture after i.) 2 hour ii) 4 hour iii) after 4 hour if two of the initial 10 cells were dead at zero time. [3]

Q2. Correct the following statement and give reason for your answer. [2 X 5 = 10]

- i. RNA viruses integrate their genetic material (RNA) directly into host cell DNA.
- ii. Gram Negative bacteria appear violet after treatment with alcohol during Gram Staining.
- iii. Heat sensitive culture media and antibiotic solutions are sterilized by Autoclaving.
- iv. Silver chloride is used to kill algae in pools and fish tanks.
- v. Packaged spices, meat, microbiological plastic ware and medical supplies are sterilized by X-rays.

Q3. What is meant by 'Drug Resistance'? Discuss various mechanisms of Antibiotic Resistance evolved by bacterial pathogens. [4]

Q4. Draw and describe the 'Lytic' and 'Lysogenic' cycles of viral replication. [4]

Q5. Draw labeled diagrams of Gram-negative and Gram-positive and cell walls. Give important differences between Gram Positive and Gram Negative bacteria. [4]