

KATHMANDU UNIVERSITY
End Semester Examination [C]
April/May, 2023

Level : B.Tech.
Year : I
Time : 2 hrs. 30 mins.

Course : BIOT 101
Semester : II
F.M. : 55

SECTION "B"
[4Q × 7 = 28 marks]

Attempt ALL questions.

1. Describe the similarities and differences between the cell walls of acid fast and Gram-negative bacteria with figure.
2. Explain bacterial transformation with emphasis Griffith's experiment.
3. What is growth curve? Compare and contrast the growth curve of batch culture and continuous culture.
4. Define immunity. Explain different types of non-specific defense mechanism of our body.

OR

What is immune response? Describe the different types of immunity with examples.

SECTION "C"
[27 marks]

Attempt ALL questions.

5. Briefly describe the nature and function of plasmid. [3]
6. Define the given media with their uses: semi solid media, transport media and differential media. [3]
7. Draw graphs showing the relationship between temperature and growth rate for each of the following types of bacteria: psychrophilic, mesophilic, thermophilic. [3]
8. Give the possible outcomes of mating between the following strains of *E. coli*. [2×2=4]
 - a. Hfr X F-
 - b. F+ X F-
9. Distinguish between : [2×2=4]
 - a. Exotoxin and endotoxin
 - b. Thermal death time and thermal death point
10. Give the significance of choice of an organism in a fermentation process. [3]
11. You make 1/10,000 dilutions of an unknown concentration. If you spread 1/10 ml of the dilution onto a plate, and 60 colonies grow after incubation. Find the original concentration of bacteria? [3]
12. Short notes on ANY TWO. [2×2=4]
 - a. Virulence factor
 - b. Yeast
 - c. Binomial nomenclature

