

KATHMANDU UNIVERSITY  
End Semester Examination  
March, 2025

Marks Scored:

Level : B.Sc./B.Tech.

Course : BIOT 201

Year : II

Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date : 03 MAR 2025

SECTION "A"

[10Q. × 1 = 10 marks]

Choose and mark [X] encircle the most appropriate option from each set of choices

- The infectious agent causing Tobacco Mosaic Disease passed through bacteria-proof filters was discovered by  
 Antonie van Leeuwenhoek                       Dmitri Iwanowsky  
 Louis Pasteur     Robert Koch
- What approximate magnification can be obtained from a compound microscope with an oil immersion lens (100X, N.A. 0.25) and ocular lens (10X, N.A. 0.25)?  
 100X                       1000X                       1500X                       250X
- Endospores:  
 represent a dormant cell stage resistant to heat, desiccation, and many chemicals.  
 allow cells to divide, produced externally and many in number.  
 are made up predominantly of cellulose.  
 function in cellular multiplication.
- All of the following apply to the DNA of bacteria except  
 Circular DNA is found in the cytoplasm  
 DNA has multiple origins of replication  
 DNA is single, closed loop  
 DNA contains the genetic code
- An Hfr bacterium is one that contains  
 many unusual plasmids  
 F plasmid that is independent of the chromosomal DNA  
 F factor integrated into the bacterial genome  
 the ability to undergo transduction
- Which of the following is not the component of Acid fast bacterial cell wall?  
 Peptitoglycan     polypeptides     teichoic acid     arabinogalactan
- Eosin methylene blue agar are widely used for the detection of *E. coli* and related bacteria in water supplies and elsewhere that suppress the growth of Gram positive bacteria. This is an example of a  
 Basal media     Enriched media     Selective media     Transport media
- The principle mechanisms in moist heat sterilization are; except,  
 degrading nucleic acids                       denaturing enzymes  
 disrupting cell membranes                       Thymine dimer formation

9. Double stranded RNA virus that uses an RNA molecule as the template for RNA synthesis must produce an enzyme called:  
 host's DNA and RNA polymerases       RNA-dependent RNA polymerase  
 DNA-dependent RNA polymerases       RNA-dependent DNA polymerase
10. Important features of the immunological system relevant to normal host defense immunity to pathogenic microorganisms are, except;  
 Specificity       Memory  
 Tolerance       Autoimmune response

SECTION "B"

[10Q. × 1 = 10 marks]

**Fill in the blanks with appropriate answer.**

11. Most bacterial and archaeal cells reproduce by \_\_\_\_\_
12. An organism is completely dependant on atmospheric O<sub>2</sub> for growth is a(n) \_\_\_\_\_
13. Bacteria having clusters of flagella at both poles of cells are known as \_\_\_\_\_.
14. An experiment began with 4 cells and ended with 32768 cells. How many generations did the cells go through? \_\_\_\_\_
15. The transfer of genetic material between bacteria by virus is called \_\_\_\_\_.
16. \_\_\_\_\_ can best be described as small, circular DNA molecules that can exist independently of chromosomes commonly found in bacteria
17. The integrated viral DNA that gets replicated along with the host cell's chromosome and remains latent for many cellular generations is termed \_\_\_\_\_
18. The concentrations of viral suspensions measured and usually expressed in terms of \_\_\_\_\_.
19. The term \_\_\_\_\_ refers to a kind of micro-organism whose presence in water is evidence of the water polluted with fecal materials.
20. \_\_\_\_\_ is the bacterial culture in which continued growth is ensured by adding fresh medium at the same rate that used cell containing medium is removed.



