

KATHMANDU UNIVERSITY  
End Semester Examination  
July/August 2024

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

11 AUG 2024

Course : BIOT 205  
Semester : I  
F. M. : 55

SECTION "D"

[3Q. × 7 = 21 marks]

Attempt *ALL* questions.

1. What is cell signaling? Give a detailed account of different cell surface receptors.
2. Describe the functional activities of the plasma membrane with the help of suitable diagrams.
3. What is the cell cycle? Give a detailed account of the molecular control of the cell cycle.

SECTION "E"

[ 34 marks]

4. Write short notes on: [6 Q. × 4 = 24]
  - a. Synaptonemal complex
  - b. Angiogenesis
  - c. C- value paradox
  - d. Chloroplast
  - e. Ageing Theories
  - f. Polytene chromosome
5. Give **TWO** major differentiates between: [2 Q. × 2 = 4]
  - a. Plant and animal cytokinesis
  - b. Diffusion and facilitated diffusion
6. Explain **WHY/HOW** for the following: [3 Q. × 2 = 6]
  - a. Lysosomes are called suicide bags of the cell.
  - b. Metaphase is the most suitable time for studying the chromosomes.
  - c. Chloroplasts have been evolved from blue green algae.





SECTION "B"  
[5Q. × 1 = 5 marks]

**Fill in the blanks.**

11. Chloroplast DNA resembles the.....DNA.
12. An octomer of four types of histone molecules, complexed with DNA is known as.....
13. Active transport is energy.....transport of molecules across a semipermeable membrane.
14. Detoxification site in the liver cell is.....
15. In Meiosis, haploid condition is reached by.....stage.

SECTION "C"  
[10Q. × 1 = 10 marks]

**Define in one sentence.**

16. MPF
17. Tight junction
18. Calmodulin
19. Tertiary lysosome
20. Glycocalyx
21. JAK/STAT
22. Metastases
23. Autocrine signaling
24. Lampbrush chromosome
25. Immunotoxin