

KATHMANDU UNIVERSITY
End Semester Examination [C]
June/July 2024

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

09 JUL 2024

Course : BIOL 103
Semester : I
F.M. : 55

SECTION "C"
[3Q × 7 = 21 marks]

Attempt *ANY THREE* questions.

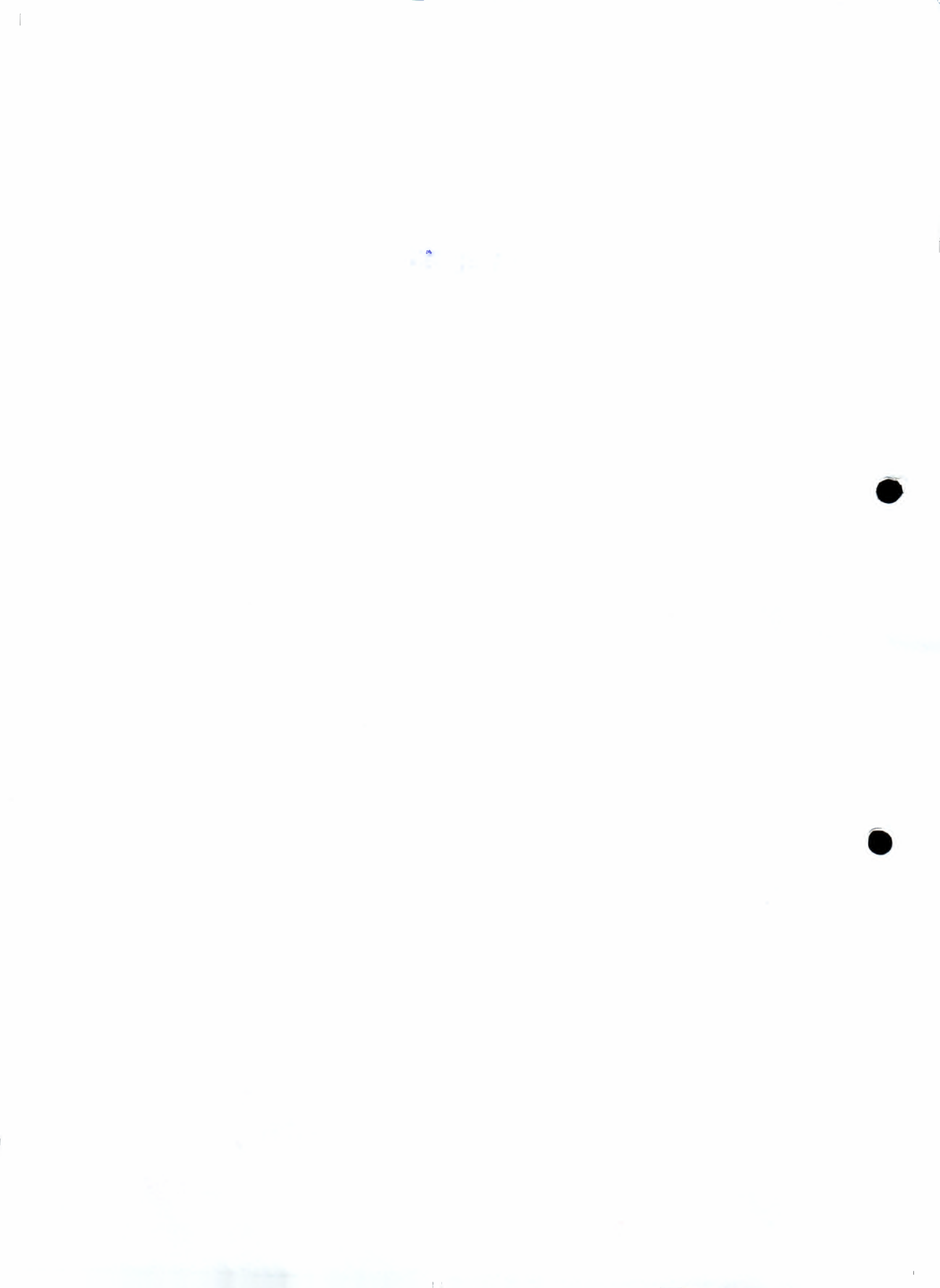
1. Illustrate and explain secondary growth in dicot stem.
2. Explain the process of digestion of food in humans with a labelled diagram.
3. Describe the embryonic development of frog up to gastrula stage.
4. Define biological community. Discuss the various types of species interaction in a biological community.

SECTION "D"
[6Q × 4 = 24 marks]

Attempt *ANY THREE* questions.

5. Write the complete equation for photosynthesis reaction in green plants. Differentiate between C₃ and C₄ plants.
6. What are the Mendel's laws of inheritance? Explain any one of them with example.
7. What is embryo sac? Describe double fertilization in angiosperms.
8. Differentiate between mitosis and meiosis cell division.
9. Write short note on herbarium, its preparation and importance.
10. What are the different types of connective tissues found in animals? Write their features and functions.
11. Briefly explain evolutionary theories proposed by Lamarck and Darwin.
12. Discuss the applications of biology in medicine and agriculture.
13. Write a short notes on (*ANY FIVE*).
a. Botanical garden
b. Cellular totipotency
c. Meristematic tissues
d. Epistasis
e. Endocrine glands
f. Macroevolution
g. Conservation biology

[5Q × 2 = 10 marks]



10. During which period, dinosaurs were supposed to have gone extinct
[] Cretaceous [] Triassic [] Permian [] Jurassic

SECTION "B"
[10Q. × 1 = 10 marks]

Fill in the blanks.

11. The cell wall of fungi is made up of _____.
12. _____ tissue is also called surface tissue as it lines the external surface and cavities of body.
13. The cells that control the opening and closing of stomata in plants are called _____ cells.
14. Pyruvate oxidation is a biochemical reaction that involves the oxidation of pyruvate to create _____.
15. The transfer of pollen grains from anther to stigma is called _____.
16. _____ is the process by which a fruit develops without fertilization. As a result the fruit is seedless.
17. The pattern of inheritance in which both alleles are visible in the phenotype and neither allele masks another. _____.
18. A _____ is a group of individuals of the same species that lives in the same area at the same time.
19. The evolutionary process by which populations evolve to become distinct species is _____.
20. _____ are fuels derived from biomass, that is, plant or algae or animal waste.