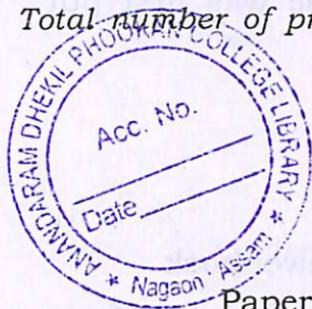


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1A (Sem-1) BOT 2/IETP

2025

**BOTANY**

Paper : BOT0100204-N

**(Microbiology)**

Full Marks : 45

Time : 2 hours

**The figures in the margin indicate full marks for the questions.**

1. Choose the correct answer : (**all are compulsory**) 1×5=5

(a) Bacteria which grow in extreme cold temperature is known as \_\_\_\_\_

- (i) Psychrophile
- (ii) Thermophile
- (iii) Halophile
- (iv) None of the above

(b) Germ theory of disease was first put forth by \_\_\_\_\_

(i) John Tyndall

(ii) Louis Pasteur

(iii) Robert Koch

(iv) Antonie Van Leeuwenhoek

(c) Which of the following cannot perform photosynthesis?

(i) Fungi

(ii) Colorless algae

(iii) Chemoheterotrophs

(iv) All of the above

(d) E-Coli is an example of \_\_\_\_\_

(i) Mesophile

(ii) Thermophile

(iii) Psychrophile

(iv) Psychrotroph

(e) When the Cocci bacteria are arranged in chains it is called \_\_\_\_\_

(i) Staphylococcus

(ii) Gaffkya

(iii) Streptococcus

(iv) Sarcinae

2. Answer the following questions in short :  
**(any five)** 2×5=10

(a) Define thermophilic bacteria with example.

(b) What is the role of Rhizobium in N<sub>2</sub> cycle?

(c) What does GMO stands for? Name *one* bacterium commonly used in genetic engineering.

(d) Name *two* antibiotics and their producing organism.

(e) Name *two* RNA virus that infects human.

(f) What is 'germ theory of disease'?

(g) Differentiate between saprotrophs and symbionts .

(h) Define biofertiliser with example.

(i) Name the major elements required in microbial nutrition.

(j) What are the symptoms and causal organism of early blight of potato?

Answer the following questions : **(any four)**  
5×4=20

(a) Write a note on host-pathogen interaction.

(b) Explain the process of making SCP by using microbes.



- (c) Give an account of different nutritional groups of microorganisms.
- (d) Explain how the doctrine of spontaneous generation was rejected.
- (e) Explain the role of soil microbes in maintaining the soil health.
- (f) Write the Baltimore classification of virus in detail.
- (g) Discuss the role of microbes in nitrogen or carbon cycle.
- (h) Give a general account on viral replication with suitable diagram.
4. Answer the following questions in brief: (**any one**) 10×1=10
- (a) Describe the source and types of microbes present in the air. Write in brief about some microbial diseases that spread through the air.
- (b) Elucidate the process of genetic recombination of bacteria with suitable diagram.
- (c) Write note on microbes used in pharmaceutical industry.
- (d) Explain in brief the lytic and lysogenic cycle with appropriate illustration.

