

# MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. HEALTH SCIENCE DEGREE EXAMINATION - JUNE 2023  
SUBJECT: BHS-208 - MICROBIOLOGY AND GENETICS

Marks: 75

Duration: 180 mins.

## SECTION A – MICROBIOLOGY

1. Answer the following questions briefly.

- 1A) Name any TWO enriched media. (2)
- 1B) Enumerate the functions of mesosomes in bacteria. (2)
- 1C) Explain the process of conjugation in bacteria. (2)
- 1D) List any TWO serological tests used in diagnosis of infectious diseases. (2)
- 1E) Name any FOUR microorganisms that can be seen as normal flora in human body. (2)
- 1F) Explain the working principle of an autoclave. (2)
- 1G) List any FOUR species of Plasmodium. (2)

2. Answer the following questions.

- 2A) List any THREE differences between bacterial exotoxin and endotoxin. (3)
- 2B) List the steps involved in viral replication. (3)

3 Answer the following question.

- Describe the laboratory diagnosis of enteric fever. (5)

## SECTION B - GENETICS

4. Answer the following questions briefly.

- 4A) What are the various blood groups of children possible when a "B" blood group man marries an "O" blood group woman? (2)
- 4B) Describe endosymbiotic hypothesis. (2)
- 4C) What is gene interaction? What is the difference between an epistatic gene and a hypostatic gene? (2)
- 4D) Write a short note on Active immunity. (2)
- 4E) Write a short note on somatic cloning. (2)
- 4F) Write a short note on the restriction mapping approach utilized in the mapping of the genome. (2)
- 4G) Explain the effect of epigenetic changes that may lead to oncogenic transformation. (2)

5. Answer the following questions.

- 5A) Describe any TWO techniques used to study bacteria. (3)
- 5B) Describe Aneuploidy with an example. How is it caused? (3)

6.. Answer the following question.

- With the help of the threshold liability model, explain the basic principles of inheritance exhibited by multifactorial traits. (5)

