

**ST JOSEPH’S UNIVERSITY, BENGALURU-27**

**M.Sc. ENVIRONMENTAL SCIENCE AND SUSTAINABILITY - II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

(Examination conducted in May 2023)

**ES 8222: ENVIRONMENTAL MICROBIOLOGY AND ENVIRONMENTAL BIOTECHNOLOGY**

(For current batch students only)

**Time - 2 Hours Max Marks - 50**

**This question paper contains one printed page and three parts**

**Part A**

**Answer any five of the following 2m X 5q = 10m**

1. State the 5R policy.
2. Define metagenomics. Cite one example.
3. List the types of bioremediation.
4. What are the functions of DNA polymerases.
5. What is the process of Gasification?
6. Mention any two bio-indicator species.
7. Cite any two disadvantages of GMOs.

**Part B**

**Answer any four of the following 5m X 4q = 20m**

1. Explain the structure of RNA.
2. Nanotechnology can open new avenues in Environmental Science. Justify.
3. Explain the biosafety levels to be practiced in laboratories.
4. How do biomaterials aid in the creation of sustainable systems?
5. Discuss the Algae as a source of biofuel.
6. Write a short note on bio-pesticides and their role in crop improvement.

**Part C**

**Answer the following 10m X 2q = 20m**

1. a. Describe the structure and functions of Aspergillus.

**OR**

b. Comment on the role of biotechnology in the conservation of biodiversity.

1. a. Describe the process of biomethanisation with help of neat labeled diagram.

**OR**

b. Define Bioremediation. Explain the process of bioremediation of pesticides with an example (2+8).