

M.Sc. (ENVIRONMENT SCIENCE & TECHNOLOGY) SEM. – I (CBCS – 2019) :

Winter - 2021

SUBJECT : ENVIRONMENTAL CHEMISTRY & MICROBIOLOGY

Day : Wednesday  
Date : 05/01/2022

W-2021-21200

Time : 10:00 AM TO  
Max. Marks : 60 1:00 P.M.

N.B.

- 1) Answer any **THREE** questions from Section – I and any **THREE** questions from Section – II.
- 2) Draw neat and labelled diagrams wherever necessary.
- 3) Answer to both the sections should be written in **SEPARATE** answer book.

**SECTION – I**

- Q.1** a) Explain with the help of diagram principle, construction and working of a viscometer. (05)
- b) Illustrate how PAN is formed in a smog producing chain reaction. (05)
- Q.2** a) What is El Nino? How does it affect the global climate? (05)
- b) Explain coagulation-flocculation jar test of water effluents. (05)
- Q.3** a) Discuss with examples any five principles of green chemistry which are brought into play. (05)
- b) Explain with example ways of shifting chemical equilibria. (05)
- Q.4** Write short notes on any **TWO** of the following: (10)
- a) Nuclear winter
  - b) Common ion effect
  - c) Amphoteric hydroxides

**SECTION – II**

- Q.5** a) Explain the use of microorganisms in anaerobic digestion in waste water treatment. (05)
- b) Explain the use of microbes in Bio pesticides and disease control in crops. (05)
- Q.6** a) Explain the effect of temperature and pH on growth of microorganisms. (05)
- b) What is the role of microorganisms in waste water treatment processes? (05)
- Q.7** a) Write a note on Bio fertilizers and their role in agriculture. (05)
- b) How microorganisms are responsible for public health in a city? (05)
- Q.8** Write short notes on any **TWO** of the following: (10)
- a) Counting methods
  - b) Role of microorganisms in environment management
  - c) Drug resistance in organisms
  - d) Microbial leaching

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