

**B.Sc. 3rd Semester (Honours) Examination, 2021**

**ENVIRONMENTAL SCIENCE**

**Course ID: 31812**

**Course Code: SH/ENV/302/C-6**

**Course Title: Environmental Biotechnology**

**Time: 1 hr 15 min.**

**Full Marks: 25**

*The figures in the right hand side margin indicate full marks.  
Candidates are required to give their answers in their own words as far as practicable.*

**1. Answer any five questions from the following:**

**1 × 5 = 5**

- a) Differentiate between constitutive and facultative heterochromatin.
- b) Give example of one essential and one non essential amino acid.
- c) What is Vermiculture?
- d) What do you mean by DNA Supercoiling?
- e) What is nucleoid?
- f) Name some biological procedures which are associated with hazardous waste treatment.
- g) What is biofuel ?
- h) What do you mean by stress tolerant plant?

**2. Answer any two questions from the following:**

**5 × 2 = 10**

- a) Differentiate between A, B and Z DNA on the basis of characteristic features.
- b) Briefly describe the cloverleaf model of tRNA with suitable diagram. (3+2=5)
- c) Define waste water. Write a note on primary, secondary and tertiary waste water treatment. (1+4=5)
- d) What is Biological control? Describe some examples which are associated with bio-control of plant pathogen briefly. (1+4=5)

**3. Answer any one question from the following:**

**10 × 1 = 10**

- a) Write some characteristic features of Enzyme? Differentiate between co-enzyme and prosthetic group. Describe Induced Fit model of enzyme action. Add a note on splicing mechanism. (1+2+2+5=10)
- b) Make notes on the followings:
  - i) Bio-remediation technology and its application.
  - ii) Integrated Pest Management technique. (5+5=10)