

6. Describe the application of bioreactors in the treatment of industrial wastewater. Provide a step-by-step explanation of their operation and benefits.

(15)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1078

I

Unique Paper Code : 2182012301

Name of the Paper : Environmental Chemistry
(DSCC-7)

Name of the Course : B.Sc. Hons. Environmental
Sciences – Core

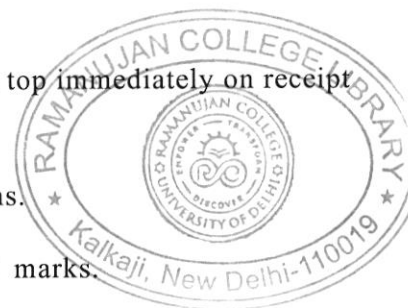
Semester : III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **four** questions.
3. **All** Questions carry equal marks.



1. (a) Explain the structural forms of DNA and their biological significance. (8)

- (b) Define post-translational modifications, list their types, and briefly describe their significance in protein functionality. (7)

2. Write short notes on the following (**any three**):

(5×3=15)

(a) Nernst equation and its relevance to electrochemical cells.

(b) Restriction enzymes and their types.

(c) Composting as a solid waste treatment method.

(d) Bio-control of plant pathogens.

3. Differentiate between the following (**any three**):

(5×3=15)

(a) Euchromatin and Heterochromatin

(b) Genomic and cDNA libraries

(c) Bioventing and Biosparging

(d) Aliphatic hydrocarbons and Substituted hydrocarbons

4. (a) What do you understand by bioremediation?

Discuss its potential and limitations in the treatment of heavy metal contamination. (8)

(b) List the steps involved in using plants or microbes for environmental remediation and mention precautions required. (7)

5. (a) Elaborate on the role of microbial transformations in copper extraction. (8)

(b) Discuss the relationship between PGPR bacteria and biofertilizers in enhancing soil fertility. (7)