

Bs/EVS/C-11T

2025

(FYUGP)

(5th Semester)



ENVIRONMENTAL SCIENCE

(MAJOR)

Paper Code : EVS/C-11T

(Environmental Biotechnology)

Full Marks : 75
Pass Marks : 40%

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Describe the structure of DNA in detail.
Explain the physical and chemical
characteristics of DNA. 5+5+5=15

Or

- (b) Describe the structure of RNA in detail.
Explain the physical and chemical
characteristics of RNA. 5+5+5=15

(2)

2. (a) What are DNA modifying enzymes? With suitable examples, describe the different DNA modifying enzymes and their functions. 15

Or

- (b) Define recombinant DNA and explain its significance in biotechnology. Mention some applications of recombinant DNA technology. 8+7=15

3. (a) Explain the role of microorganisms in wastewater treatment. Differentiate between aerobic and anaerobic treatment processes with suitable examples. 5+10=15

Or

- (b) What are the major sources of solid waste in urban and rural areas? Explain the different methods of solid waste treatment and management. 5+10=15

4. (a) What are plant growth promoting rhizobacteria (PGPR)? Discuss their major characteristics and explain how they are applied in agriculture. 15

(3)

Or

(b) Define Integrated Pest Management. Outline the various methods used in IPM with suitable examples. Give the advantages of IPM over conventional pest control methods. $2+8+5=15$

5. (a) Define mobile DNA and describe the main types of mobile DNA elements. Write a note on the structure and organization of genetic material in prokaryotes. $8+7=15$

Or

(b) What are stress tolerant plants? Discuss the different strategies used for developing stress tolerant plants. $5+10=15$

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