Q.P. Code : **24147**

(2½ Hours) [Total Marks :60

N.B. : (1) All question are compulsory.
(2) Figure to the right indicate full marks.
(3) Draw neat labelled diagrams wherever necessary.

1. Answer the following (Any **two**):-
   (a) Describe the structure of DNA as proposed by Watson and Crick. 6
   (b) Distinguish between bioremediation & phytoremediation. 6
   (c) What is recombinant DNA technology? Write a note on the tools used in rDNA technology. 6

2. Answer the following (Any **two**):-
   (a) What is biocomposting? Give benefits of the same. 6
   (b) What is bioleaching? Explain the role of Thiobacillus ferrodoxicant in bioleaching. 6
   (c) Write a note on biopolymers & bioplastics. 6

3. Answer the following (Any **two**):-
   (a) What are insecticides? Comment on the effects of overapplication of insecticides on the environment. 6
   (b) What is nitrogen fixation? Explain the role of bacteria in the process of nitrogen fixation. 6
   (c) What are plant incorporated protectants? Explain with suitable examples. 6

4. Answer the following (Any **two**):-
   (a) Discuss the role of nanotechnology in environmental remediation. 6
   (b) What are the application of nanotechnology in food and agriculture industry? 6
   (c) Describe how nanotechnology can be used for treatment of wastes. 6

5. Write short notes on (Any **four**)
   (a) Factors affecting phytoremediation. 3
   (b) Molecular probes in environmental monitoring . 3
   (c) Carbon to nitrogen ratio in biocomposting. 3
   (d) Entomopathogenic fungi. 3
   (e) Mycorrhiza. 3
   (f) Carbon nanotubes. 3
