Printed Pages: 4 **NEV-013**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 121663	**Roll No.**

B.TECH.

Theory Examination (Semester-VI) 2015-16

ENVIRONMENTAL BIOTECHNOLOGY

Time : 3 Hours ***Max. Marks : 100***

Section-A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10=20)

(a) List the enzymes involved in the DNA replication and transcription.

(b) What is codon and anti-codon?

(c) Give short notes on rotating biological contractors.

(d) State the functions of degradative plasmids.

(e) What is the role of earthworms in vermitechnology?

(f) Write about DNA structure and base pairing.

(g) Which parameters influences the bioavailability of xenobiotics

(h) Classify biofilters.

(i) Are biodegradable plastics beneficial to the environment?

(j) Mention the pros and cons of using air lift bioreactor.

Section-B

2. Attempt any five parts of the following. (10×5=50)

(a) Explain the steps employed to treat effluent water from antibiotic industry with the biochemical reactions and a simple flow chart.

(b) Describe the microbiology and processes involved in the bioremediation of hydrocarbons.

(c) Illustrate the process of treating sewage and industrial wastewater using oxidation ditches with a simple diagram.

(d) Explain the process of using bioscrubber to treat contaminated air. Show the key components of Bioscrubber with labelled illustration.

(e) Discuss in detail the steps in root zone wastewater treatment with a simple diagram and list its advantages over conventional water treatment processes.

(f) Elaborate how trickling filters can be used to treat wastewater with simple diagram.

(g) What are the various possible ways to utilize biotechnology to reduce CO2emmissions?

(h) How would you solve the air pollution issues in an industrial zone?

Section-C

Note: Attempt any two parts of the following. (15×2=30)

3. (a) Explain the chief concepts in environmental biotechnology and mention its significance.

(b) Describe about a typical oxidation ditch activate sludge system with simple diagram.

4. (a) Define the term xenobiotics with examples. (3)

(b) Explain the role of microorganisms and ways to degrade xenbiotics in the environment. (12)

5. Describe the process of biological detoxification of the following compounds with reactions:

(a) Cyanide

(b) Urea