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EEV-013

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

B.TECH.

Theory Examination (Semester-VI) 2015-16

ENVIRONMENTAL BIO-TECHNOLOGY

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

SECTION – A

1. Attempt all question parts. 10 × 2 = 20

(a) Give any 2 biodegradable plastics along with its structure
(b) Explain (i) Base pairing rule for DNA and RNA
(ii) Codons
(c) What are the harmful effects of herbicides and how to remove them ?
(d) Describe Central dogma of protein synthesis with simple diagram.
(e) Compare and summarize oxidation ponds and trickling filters.
(f) What is oxidation ditch and its use in waste water treatment ?
(g) What are the ways used to measure air quality ?
(h) How to construct lined biobeds ?
(i) What are the common pollutants in sewage sludge ?
(j) Mention the benefits of Membrane bioreactor over other pollution control methods.

SECTION – B

2. Attempt any five question parts : 10 × **5 = 50**

(a) Explain the following :
(i) Tools and techniques involved in the genetic engineering
(ii) Bio-polymers involved in DNA replication and its role
(b) Explain the reaction involved in the biogas production.
(c) Briefly explain bio-remediation and their types with suitable diagram
(d) Explain the construction of bioscrubbers with neat diagram. Discuss its application in food industries.
(e) Illustrate the biochemical reactions and microbiology involved in the degradation of Xenobiotics with examples.
(f) Explain in detail the methodology involved in the biological detoxification of Cyanide and Urea.
(g) What are the organisms involved in Vermi technology ? Explain its role.
(h) What are the different types of RNA and its role in protein synthesis ?

SECTION – C

Attempt any two questions. 1**5** × 2 = **30**

3. (a) Illustrate the mechanisms involved in bioremediation of pesticide residues and petrochemicals.
(b) Describe the various Novel methods for treating sewage and their mechanism with diagram.

4. (a) Illustrate the scheme for treating waste water from tannery industry along with the biochemical reactions involved in it. Provide flowchart.
(b) Discuss the construction and operation of upflow anaerobic sludge blanket reactor with diagram.

5. (a) Describe biotechnological approaches to reduce CO_2 emissions and role of genetically modified crops in it.
(b) Write short notes on VOC and Odour. Suggest an odour control method for dairy industry with a neat diagram.