

B. Sc. DEGREE EXAMINATION APRIL 2015
BRANCH VIA. ADVANCED ZOOLOGY & BIOTECHNOLOGY
SIXTH SEMESTER

COURSE : MAJOR CORE
PAPER : ENVIRONMENTAL BIOTECHNOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS : **(10 X 3 = 30)**

1. Expand a. MBR b. B.O.D c. PHB

2. Define

a. Biopiles

b. Bioaccumulation

c. wet milling

3. Comment on Organic fertilizer.

4. Briefly write about Phytoremediation.

5. Comment on Biosensors.

6. **MATCH THE FOLLOWING**

a. Removal of petroleum products

Biopolymer

b. Biodegradation of contaminants in soil

Methanogenesis

c. Cellulose acetate

Treat fecal and industrial waste

d. *Jatropha curcas*

Bioslurping

e. Anaerobic Digestion

Bioventing

f. Activated sludge system

Bio fules

7. **FILL IN THE BLANKS**

a. The abnormal increase in growth of water plants due to inflow of nutrients is called
-----.

b. In Ex-situ bioremediation, the ----- system involves the treatment
of soild- liquid suspension in bioreactors.

c. The Microbial products prepared from microorganisms to kill insect pests are called
-----.

d. A domestically produced renewable fuel that can be manufactured from vegetable
oil, animal fat for use in vehicle is -----.

e. The most commonly used microorganism in bioleaching is-----.

f. ----- is a biologically degradable plastics, that is non toxic and enhances
wound healing.

8. STATE TRUE OR FALSE

- a. Bacteria usually are the dominant hydrocarbon degraders in aquatic systems.
 - b. Bioaugmentation involves application of specifically selected bacteria into waste water treatment system.
 - c. Nitrogen and Phosphorus in waste waters is removed during primary treatment process.
 - d. The ore commonly used in bioleaching of copper is pyrite.
 - e. The growth of Water hyacinth, a weed is controlled by an insect *Neochetina eichhorniae*.
 - f. The process of extraction of metallic and organic constituents from soil by plants is called Phyto extraction.
9. Write any 3 advantages of Biogas.
10. List the substances released from industries into the water bodies.

SECTION – B**ANSWER ANY FIVE QUESTIONS :****(5 X 6 = 30)**

11. What are Bioindicators? Explain the role of indicator species.
12. Acid mine Drains in Yellow stone National park – Discuss its insight on bioremediation.
13. Write a note on Genetically manipulated organisms.
14. Comment on Gaseous Bioremediation.
15. Briefly explain the types of biofertilizers.
16. Explain Bioethanol production from starch and cellulose.
17. Explain microbial enhanced oil recovery.

SECTION – C**ANSWER ANY TWO QUESTIONS :****(2 X 20 = 40)**

18. Write an essay on Ex situ and In situ Bioremediation techniques.
19. Explain in detail various sewage treatment methods.
20. Write an account on Biopolymers.
- 21 List the microbes commonly used in Bioleaching. Explain how metals such as Copper, Uranium and Gold are recovered by Bioleaching.
