



AH-638

Seat No. _____

B. Sc. (Sem. VI) Examination

April - 2019

Biotechnology : Paper - 13

(Environmental Biotechnology)

Time : 3 Hours]

[Total Marks : 70

- Instructions :** (1) All the sections are compulsory.
(2) Draw diagrams / flowcharts wherever necessary.
(3) Figures to the right indicate marks.

1 Do as directed : 15

- (1) Accumulation of DDT in environment is known as.
- (a) Bioaugmentation
 - (b) Biomagnification
 - (c) Bioremediation
 - (d) Bioremediation
- (2) Which of the following is not a tertiary treatment?
- (a) Trickling Filters
 - (b) UV Treatment
 - (c) Reverse Osmosis
 - (d) Chlorination
- (3) Which of the following is considered as Bioplastic?
- | | |
|---------|---------|
| (a) PEP | (b) PVC |
| (c) PEG | (d) PHA |

- (4) Which of the following organisms is NOT helpful as Biofertilizer ?
- (a) Cyanobacteria
 - (b) Pseudomonas Spp
 - (c) Azotobacter
 - (d) Rhizobium
- (5) Which test is performed to analyse microbial contamination in water?
- (a) MPN
 - (b) Viable Count
 - (c) BOD
 - (d) None of the above
- (6) Compounds which are non biodegradable are known as :
- (a) Recalcitrant Compound
 - (b) Xenobiotic Compound
 - (c) Abiotic Compound
 - (d) All of the above
- (7) Which of the following processes are microbial treatment processes during waste water treatment ?
- (a) Primary
 - (b) Secondary
 - (c) Tertiary
 - (d) Both (B) & (C)
- (8) Which of the following microorganism is important agent for Bioleaching process?
- (a) Thiobacillus thiooxidans.
 - (b) Thiobacillus ferrooxidans.
 - (c) Pseudomonas putida.
 - (d) All of the above.

- (9) Reclaiming the natural condition of polluted / contaminated site is known as.
- Biodegradation.
 - Bioaugmentation.
 - Bioremediation.
 - Biobleaching.
- (10) Which of the following treatment process is proving economical rewards with the main objective of pollution control ?
- Primary treatment.
 - Composting.
 - Oxidation Pond.
 - All of the above.
- (11) Define : Xenobiotic Compound.
- (12) Define : BOD
- (13) Define : Biofertilizer.
- (14) Define : Biomagnification.
- (15) Expand : MEOR.

2 Write short notes on following : (any five)

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- Types and sources of pollution.
- Biobleaching of any one metal.
- Isolation and Screening of MOs degrading pollutants.
- Oxidative & reductive biodegradation of Nitro aromatic compounds.
- Transport and fate of contaminants in environment.
- Treatment of solid wastes.
- General account on Biodegradation.

3 Answer following in detail : (any **three**)

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- (1) Waste water treatment with schematic layout of waste water treatment plant.
 - (2) Write detailed account on types, application and importance of Biofertilizers.
 - (3) Write short notes on following :
 - (a) Bioplastics.
 - (b) Reductive dechlorination of Petroleum Hydrocarbons.
 - (4) Concept of Biomagnification and Transformation of DDT.
 - (5) Define wastewater. Explain physical, chemical, and biological properties of waste water. Add a brief account on indicator organisms in study of wastewater.
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