



BC-219

Seat No. _____

B. Sc. (Sem. VI) Examination

March/April – 2014

CC - I - 13 : Biotechnology : Paper - XIII
(Environmental Biotechnology)

Time : 3 Hours]

[Total Marks : 70

1 Answers the following : **10**

- (i) Azotobacter and Bacillus polymyxa are
- (a) Decomposers
 - (b) Nonsymbiotic nitrogen fixers
 - (c) Symbiotic nitrogen fixers
 - (d) pathogenic bacteria
- (ii) High value of B O D (Biochemical Oxygen Demand) shows
- (a) water is normal
 - (b) water is highly polluted
 - (c) water is less polluted
 - (d) none of these
- (iii) Biogas is produced by
- (a) aeobic breakdown of biomass
 - (b) anaerobic break down of biomass
 - (c) with the help of methanogenic bacteria
 - (d) both (b) and (c)
- (iv) Biogas is
- (a) Methane rich fuel
 - (b) ecofriendly and pollution free source
 - (c) Propane rich fuel
 - (d) Both (a) and (c)

- (v) Which is true for DDT ? It is
- (a) not a pollutant
 - (b) an antibiotic
 - (c) an antiseptic agent
 - (d) a non degradable pollutant
- (vi) Which is an indicator organism used for drinking water quality?
- (a) Rhizobium sp.
 - (b) E.coli
 - (c) Enterobacter
 - (d) Bacillus subtilis
- (vii) Organisms associated with sorghum and cotton, which provide nutrition to them are
- (a) Azospirillum, Azotobacter
 - (b) Azotobacter, Azospirillum
 - (c) Anabaena, Rhizobium
 - (d) Rhizobium, Azotobacter
- (viii) 'Fast growing rhizobia' called as...?
- (a) Bradyrhizobium
 - (b) Rhizobium
 - (c) (a) and (b) both
 - (d) None of above
- (ix) The Blue-green algae are small organisms and can be seen under ?
- (a) naked eye
 - (b) microscope
 - (c) (a) and (b) both
 - (d) none of above

- (x) Which of the following is considered to be the best chemical method of fixing atmospheric nitrogen?
- (a) Fisher method
 - (b) Decan method
 - (c) Haber-Bosch method
 - (d) Paranas-Meyerhoff method

2 Answer the following : (any five) **10**

- (i) Write the various techniques name for microbiological analysis of drinking water.
- (ii) Draw the chart of municipal waste water treatment technique.
- (iii) Define pollution write the name of pollutants
- (iv) Define contamination and give the name of contaminant in water
- (v) Draw the trickling filter device
- (vi) Write the name of microorganisms used in Bioleaching process
- (vii) What is Recalcitrant compound?

3 Answer the following : (any five) **30**

- (i) Explain the source of pollution
- (ii) What is biomagnifications process? Explain with example
- (iii) Explain the physical and chemical properties of waste water.
- (iv) Explain the solid waste treatment – Composting
- (v) Explain the aromatic compound degradation by microbes
- (vi) Write a microbiology and biochemistry of Bioleaching
- (vii) Explain the process of PHA production

4 Answer the following : (any two) **20**

- (i) Explain Biodegradation process in environment
 - (ii) Write the Biodegradation of Alkenes and Cyclohexan.
 - (iii) Summarize the tertiary treatment of waste water treatment techniques
 - (iv) Write a note on Biofertilizer
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