DRR-1691

M. Sc. (Sem. VI) Integrated Biotechnology (CBCS) Examination
March/April – 2016

Environmental Biotechnology (Cpre-1, Course-4) (New Course)

Time : 2 Hours] [Total Marks : 50

Instructions :

(1) Fill up strictly the details of signs on your answer book.

(2) Figures to the right indicate full marks.

(3) Draw neat and labelled diagrams wherever necessary.

1 Answer the following : 8

(1) What is the most appealing attribute of Deenbandhu Biogas Plant that makes it more preferable than other designs ?

(2) Differentiate ‘Phytoextraction’ from ‘Phytostabilization’.

(3) Define ‘Hyper-accumulator’.

(4) Explain how the pH of an acidic soil can be raised for bioremediation.

(5) What is U.A.S.B. ? Why it is named so ?

(6) Elaborate the terms : M.L.V.S.S. and S.V.I.

(7) Define ‘Static Pile’. How this process is advantageous in compare to other methods ?

(8) Give the scientific binominal name of worms used for commercial vermicomposting.

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2 Explain in detail of the following: (any two)

(1) Explain step-wise process of producing ethanol from cellulosic biomass.

(2) Describe two major approaches for the microbial production of hydrogen.

(3) What is Phyto extraction? Write a note on the operational aspects of phytoextraction. Bioremediation strategies: In situ.

3 Answer the following: (any two)

(1) Explain design and working of anaerobic baffled reactors with appropriate diagram.

(2) Define 'Composting'. Explain alternative types of composting processes.

(3) Enlist major physiochemical properties of P.H.As and Possible applications of P.H.A.

4 Explain in detail of the following: (any two)

(1) Describe techniques for the treatment of polluted gaseous waste.

(2) What is 'biohydrometallurgy'? Describe any two approaches for the metal bioleaching from low-grade ores.

(3) What is metal precipitation? Describe the process of metal precipitation.