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REVE-003

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Ph.D. ENVIRONMENTAL SCIENCE (PHDEV)

Term-End Examination

December, 2018

REVE-003 : ENVIRONMENTAL BIOTECHNOLOGY

Time : 3 hours *Maximum Marks : 100*

Note : *(i) Attempt **any five** questions.*

*(ii) **All** questions carry **equal** marks.*

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1. Give an overview of Environmental Biotechnology. Discuss its application and scope in : **20**

(a) Pollution abatement

(b) Environmental Monitoring

2. Write short notes on **any four** of the following : **5x4=20**

(a) Activated sludge

(b) Composting

(c) Bioreactors

(d) Constructed wetlands

(e) Bioleaching

3. What are Xenobiotic compounds ? Discuss various *insitu* bio-remediation techniques for the treatment of xenobiotic compounds. Analyse the advantages and limitations of each technique. **20**

4. Write short notes on **any four** of the following : **5x4=20**
   (a) Biofertilizers
   (b) Bioplastic
   (c) Hazardous waste and its treatment
   (d) Microbial metabolism
   (e) Green house gas mitigation

5. What is bioenergy ? Give an overview of bioenergy technologies. Discuss the potential of waste as a source of energy for future. **20**

6. Discuss various sources and components of waste. Analyse various biological methods of waste treatment with their advantages and limitations. **20**

7. Write notes on **any two** of the following : **10x2=20**
   (a) Microbial insecticides and pesticides
   (b) Land farming
   (c) Value added products from waste

8. Develop a research proposal selecting a suitable research topic from the course content. Discuss its methodology operational plan and significance in detail. **20**