

Total No. of Questions : 8]

SEAT No. :

P4253

[4860]-1047

[Total No. of Pages :1

M.E. (Civil) (Water Resource and Environmental Engg.)
ENVIRONMENTAL CHEMISTRY AND MICROBIOLOGY
(2013 Credit Pattern) (Semester - I)

Time :3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Attempt any Five Questions.*
- 2) Figure to the right indicate full marks.*
- 3) Neat diagrams must be drawn wherever necessary.*

Q1) Differentiate between organic and inorganic compounds by considering various factors. Also comment on interaction of water with organic and inorganic species from the environment. **[10]**

Q2) Mention various Physico chemical parameters. What are the techniques for estimation of various elements at major, minor, trace and ultra-trace level concentration? Mention merits and demerits of these techniques. **[10]**

Q3) Discuss physical and chemical properties of lead and its compounds. Also highlight on Aflatoxin occurrence, chemical composition and properties of metabolism, acute toxicity and carcinogenicity of these compounds. **[10]**

Q4) Conscript various enzymes and elucidate their role in the field of environmental microbiology. **[10]**

Q5) Discuss in detail classification and characteristics of bacteria. Also describe cultural techniques. **[10]**

Q6) Write notes on: **[10]**

- a) Gene Transfer & Recombinant DNA Technology.
- b) Cell Morphology.

Q7) Discuss types and metabolic classification of microorganism. Also highlight on microbial metabolism. **[10]**

Q8) Explain Electro analytical techniques EEM-608 and GCMS technique for pollutant analysis. **[10]**

