

Day: Friday
Date: 24/05/2019

S-2019-2715

Time: 2.30 P.M. To 5.30 P.M.
Max Marks. 60

N.B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks
- 3) Assume suitable data, if necessary.

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- Q.1 a) What are the various demands of water in a city? Explain in detail. (05)
- b) What are the impurities present in raw water? Explain with its effects. (05)
- OR**
- Q.1 Draw a flow sheet of water treatment plant with river water as a source of water. Explain the functions of each unit. (10)
- Q.2 a) What is the necessity of aeration of water? Enlist methods of aeration. (05)
- b) What are principles of sedimentation? Explain plain sedimentation. (05)
- OR**
- Q.2 a) What are the types of aerator? Explain gravity aerator. (05)
- b) What is the necessity of coagulant addition for removal of turbidity? Explain chemical assisted sedimentation. (05)
- Q.3 a) What is the necessity of filtration of water? Explain mechanisms of filtration. (05)
- b) What are different methods of disinfection? Explain chlorination. (05)
- OR**
- Q.3 a) Explain with sketch details of rapid sand filter. (05)
- b) What is the necessity of softening of water? Explain ion exchange method of softening. (05)
- Q.4 a) What are sources of air pollution? Explain. (05)
- b) What are methods of removal of gaseous pollutants? Explain any one method. (05)
- OR**
- Q.4 a) What are the effects of SPM on human health? (05)
- b) Explain gravity settling chamber. (05)
- Q.5 a) What are the elements of integrated solid waste management? Explain. (05)
- b) What are the methods of solid waste treatment? Explain any one method. (05)
- OR**
- Q.5 a) Explain with sketch sanitary landfill. (05)
- b) What is the importance of labeling and handling of hazardous waste? Explain. (05)
- Q.6 a) What is the principle of environment management? Explain. (05)
- b) Explain ISO 14000 and its series. (05)
- OR**
- Q.6 a) What is the importance of life cycle assessment in environment management? Explain. (05)
- b) Write a note on Environment Protection Act. (05)