

June 2019

**ENVIRONMENTAL ENGINEERING***Time Allowed: 3 Hours**Full Marks: 70*

**Answer to Question No.1 is compulsory and to be answered first.**

**This answer is to be made in separate loose script(s) provided for the purpose.**

**Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for answering the remaining part of the question will be provided.**

**On early submission of answer scripts of Question No.1,  
a student will get the remaining script earlier.**

**Answer any five questions from Group-A & B, taking at least two from each group.**

1. A. Fill in the blanks: 1x10
- i) EIA stands for \_\_\_\_\_.
  - ii) DWF stands for \_\_\_\_\_.
  - iii) Bacteria which can survive with or without oxygen are known as \_\_\_\_\_.
  - iv) Septic tank is an \_\_\_\_\_ unit.
  - v) WHO stands for \_\_\_\_\_.
  - vi) The pH value in drinking water should be between \_\_\_\_\_ to \_\_\_\_\_.
  - vii) Thermal Power Plant may emit high \_\_\_\_\_.
  - viii) The unit of measurement of sound is \_\_\_\_\_.
  - ix) The lowest layer of atmosphere is called \_\_\_\_\_.
  - x) Hard water is \_\_\_\_\_ suitable for boiler.
- B. Answer the following questions: 2x5
- i) Name a disease that is transmitted through soil.
  - ii) What can protect the city life from pollution?
  - iii) Name some arsenic affected districts in West Bengal.
  - iv) Name any two water pollutants.
  - v) Define sound and noise.

**Group-A**

2. What is acid rain? What are the effects of acid rain? How acid rain can be minimized? 2+4+5
3. What are the different types of air pollutants? Discuss its effects on plants and animals. 2+(5+3)
4. What is the necessity of low cost water treatment in rural areas? 10
5.
  - a) What is Green House effect?
  - b) Name all the Green House Gases.
  - c) Write down names of ODS and explain how these make Ozone holes.
  - d) What are the effects of CO on human? 2+3+2+3
6. Describe the pollution problem in a metro city and explain the control management strategies. 10

**Group-B**

7. What are hazardous wastes? What are the types of hazardous wastes? Describe briefly the treatment and disposal of hazardous wastes. 2+3+5

8. What are the origins of waste water? Explain the most significant components of municipal waste water. 4+6
  9. Describe the detail procedure of sewage treatment. Describe the process of trickling filter. 5+5
  10. Write short notes on (a) Rural Sanitation, (b) Environmental impact assessment (EIA). 5+5
  11. Write short notes on – (a) Air (Prevention and Control of Pollution) Act, 1981, (b) Functions of State Pollution Control Board. 5+5
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