

**B.TECH SEM – VI (2007 COURSE) (CIVIL ENGG.) : SUMMER  
2018**

**SUBJECT : ENVIRONMENTAL SYSTEMS IN WATER & WASTE WATER  
TREATMENT**

Day: **Wednesday**  
Date: **06/06/2018**

**S-2018-2706**

Time: **02.30 PM TO 05.30 PM**  
Max. Marks. 80

**N.B.**

- 1) Question No. 1 and Question No. 5 are **COMPULSORY**. Out of remaining attempt **ANY TWO** questions from each section
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if **necessary**.
- 4) Use of non-programmable **Calculator** is allowed.
- 5) Answers to **both** the sections should be written in the **SEPARATE** answer books.

**SECTION – I**

- Q.1**
- a) Explain – sources and conveyance of water. (05)
  - b) What are types of aerators? Explain gravity aerators. (05)
  - c) What are different mechanisms of filtration? Explain. (04)
- Q.2**
- a) What are various demands of water in a city? Explain. (07)
  - b) What are the factors affecting water demand? Explain (06)
- Q.3**
- a) Draw a flow sheet of water treatment plant. Explain functions of each unit. (07)
  - b) Write a note – Coagulation and flocculation process. (06)
- Q.4**
- a) Explain working and washing of rapid sand filter. (07)
  - b) What are different methods of disinfection of water? Explain chlorination. (06)

**SECTION – II**

- Q.5**
- a) What is the necessity of self - cleansing velocity? (05)
  - b) Write a note: Microorganisms in sewage treatment. (05)
  - c) Explain – Oxygen sag curve. (04)
- Q.6**
- a) Explain design procedure for sewer. (07)
  - b) What is the necessity of sewer appurtenances? (06)
- Q.7**
- a) What is the importance of sewage characteristics in design of STP? (07)
  - b) What is treatability index? Explain. (06)
- Q.8**
- a) Write a note on: self - purification of natural streams. (07)
  - b) What is the importance of effluent standards? Explain (06)

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