

B.Tech Sem – VI (2007 Course) (Civil Engg.) : WINTER - 2018
SUBJECT: ENVIRONMENTAL SYSTEMS IN WATER & WASTE WATER TREATMENT

Day: Thursday
Date: 15/11/2018

W-2018-2844

Time: 10.00 AM TO 01.00 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.
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SECTION – I

- Q.1** a) Draw a flow sheet of water treatment plant. Explain functions of each unit. (05)
b) Explain the necessity of aeration of water. (05)
c) What is filtration? Explain theory of filtration. (04)
- Q.2** a) Explain in detail the procedure for determination of water demand for a city? (07)
b) What are the factors affecting water demand? Explain. (06)
- Q.3** a) Explain principle of coagulation and flocculation. (07)
b) Write a note: Tube settler (06)
- Q.4** a) Explain with sketch working of rapid sand filter. (07)
b) Write a note: water softening. (06)

SECTION – II

- Q.5** a) Explain variations in sewage flow. (05)
b) Write a note: Treatability index. (05)
c) What is the necessity of primary sedimentation tank? (04)
- Q.6** a) What is the necessity of sewer appurtenances? Explain manhole. (07)
b) What is the importance of different velocities in design of sewers? (06)
- Q.7** a) Define BOD. Explain its significance in design of STP. (07)
b) What are different microorganisms which help in treatment of sewage? (06)
- Q.8** a) What is self-purification of streams? What are factors affecting self-purification of streams? (07)
b) Explain with sketch functioning of grit chamber. (06)

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