

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (CE) (2012 to 2017) (Sem.-6)
ENVIRONMENTAL ENGINEERING-II
Subject Code : BTCE-606
M.Code : 71087

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**Answer briefly :**

1. What is meant by Dry Weather Flow (DWF)? How is it important in sewer design?
2. What is 'Time of Concentration'? How does it affect the design of storm sewers?
3. What is a Grit Chamber?
4. Define Sewage and Sullage.
5. Discuss the main function of Activated sludge process.
6. What is meant by self-cleansing velocity in sewers? How is it important?
7. Differentiate between separate sewer and combined sewer.
8. State the advantages of VASB reactors.
9. What is meant by high rate trickling filter?
10. What is meant by relative stability?

SECTION-B

11. Differentiate between Septic tank and Imhoff tank.
12. If the 3-day 25°C BOD of sample of sewage is 225 mg/l, what will be its 5-day 30°C BOD? $K_{20} = 0.1 \text{ d}^{-1}$, temperature coefficient = 1.047.
13. Sketch and explain the construction and working of inverted siphons.
14. Define BOD. Derive expression for first stage BOD.
15. Distinguish between an oxidation ditch and oxidation pond.

SECTION-C

16. A grit chamber is designed to remove particles with a diameter of 0.2 mm, specific gravity is 2.65, settling velocity for these particles has been found to range from 0.016 to 0.022 m/sec, depending on their shape factor. A flow through velocity of 0.3 m/sec will be maintained by proportioning weir. Determine the channel dimensions for a maximum waste water flow of 10,000 cum/day.
17. Enumerate the various methods that can be used to dispose of the digested sludge. Discuss in details the working, of any of these two important methods, which are useful in Indian conditions.
18. Write short notes on the following :
 - a) One pipe system and single stack system of plumbing.
 - b) Grease trap and skimming tank.
 - c) Septic Tank and Imhoff tank.
 - d) LRTF and HRTF.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.