

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Describe the various types of water distribution system with four advantages and disadvantages of each.

Q.24 Explain the different forms of chlorination. What is break point chlorination and why is it important?

Q.25 A town had a population of 40,000 in 2000. Population recorded in 2010 and 2020 was 50,000 and 63,000 respectively. Estimate the population for the year 2030 using:

- a) Arithmetic Increase Method
- b) Geometric Increase method

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Roll No.

4th Semester/Civil

Subject: Water Supply & Waste Water Engineering

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which of the following is a subsurface source of water?

- a) Tube well
- b) Infiltration gallery
- c) River
- d) Artesian well

Q.2 Which test is used to measure the organic matter in sewage?

- a) BOD
- b) pH
- c) Hardness
- d) Turbidity

Q.3 The process of setting of suspended particles in water by gravity is called:

- a) Filtration
- b) Coagulation
- c) Sedimentation
- d) Chlorination

Q.4 The permissible pH of potable water as per IS 10500 is:

- a) 5.0 to 6.5
- b) 6.5 to 8.5
- c) 7.5 to 9.5
- d) 6.0 to 9.0

Q.5 Which of the following is NOT a method of sewage disposal?

- a) Land treatment b) Dilution
c) Filtration d) Oxidation pond

Q.6 Reverse osmosis is a process used to:

- a) Remove suspended solids
b) Remove dissolved salts
c) Disinfect water
d) Remove heavy metals

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Skimming tanks are used to remove _____ and _____.

Q.8 The per capita demand of water for an Indian city as per IS standards is approx _____ lpcd.

Q.9 The permissible limit of turbidity in potable water as per IS 10500 is _____ NTU.

Q.10 _____ is the process of removing air or gases from water.

Q.11 The design period for distribution pipes is generally taken as _____ years.

Q.12 The unit of measurement for BOD is _____.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 What is residual chlorine? Why is it necessary.

Q.14 Write a short note on manholes and their role in the sewerage system.

Q.15 List the sources of water and describe any one.

Q.16 Define per capita demand. Mention at least 3 factors affecting it.

Q.17 Differentiate between domestic sewage and industrial sewage. (Any four difference)

Q.18 What are the characteristics of a good source of water supply? (any four)

Q.19 Describe the purpose and working of a trickling filter.

Q.20 Describe the different types of sewerage systems.

Q.21 Differentiate between slow sand filter and rapid sand filter. (any four)

Q.22 What are the key physical tests for water? Why are they important?