

4th Sem. / Civil  
Sub. Water Supply and Waste Water Engineering

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)**

Q.1 The fresh sewage is \_\_\_\_\_ in nature.

- a) Alkaline
- c) Neutral
- b) Acidic
- d) None of these

Q.2 For drinking water, iron content is usually restricted to \_\_\_\_\_.

- a) 0.01 mg per litre
- c) 1mg per litre
- b) 0.3 mg per litre
- d) 0.1 mg per litre

Q.3 Fine suspended particles are removed by \_\_\_\_\_.

- a) Filtration
- c) Bleaching
- b) Aeration
- d) Agitation

Q.4 Dead end method of distributing water is also called \_\_\_\_\_.

- a) Grid iron system
- c) Radial system
- b) Ring system
- d) Three system

Q.5 \_\_\_\_\_ sludge is a sludge which remains for a longer period in the tank before removal.

- a) Raw
- c) Stale
- b) Septic
- d) Activated

Q.6 The suitable method for forecasting population for a young and rapidly developing city is \_\_\_\_\_.

- a) Arithmetic mean method
- b) Geometric mean method
- c) Comparative graphical method
- d) None of these

**SECTION-B**

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

Q.7 The velocity by which solid matters, oil, greases, industrial waste may be removed is called \_\_\_\_\_ (Limiting velocity / Escape velocity)

Q.8 Raw sludge contains \_\_\_\_\_ percent of mixture content. (50% / 95%)

Q.9 The ratio of the maximum daily consumption to the average daily demands is \_\_\_\_\_ (1.0 x 1.8)

Q.10 The method of analysis of distribution system in which domestic supply is neglected and fire demand is considered is known as \_\_\_\_\_ (Equivalent method / Circle method)

Q.11 The water which is not chemically pure but does not contain any harmful to human health is known as \_\_\_\_\_ (Wholesome water / Impure water)

Q.12 Filtration and sewage forming are methods of \_\_\_\_\_ (Land treatmen/ Self purification)

### SECTION-C

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

Q.13 Describe the process of water treatment by “Flocculation Method”.

Q.14 Enlist any Five functions of “Grit Chambers” used for sewage treatment.

Q.15 Write the standards for quality of potable water in India.

Q.16 Write any five purpose of sanitation.

Q.17 Write a short note on water treatment using “Reverse Osmosis” System.

Q.18 Describe the incremental increase method of population forecasting.

Q.19 Explain the process of “Aerobic Digestion” used for activated sludge treatment and disposal of sewage system.

Q.20 Describe any five advantages of surface reservoirs used for water distribution system.

Q.21 Enlist the various chemical tests conducted on water and describe the chlorine test in brief.

Q.22 Describe the use of “Lagoons” for the waste water treatment to ensure the safe disposal of waste materials into the environment.

### SECTION-D

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

Q.23 Explain the “Radial Water Distribution System” along with its advantages, with the help of a diagram.

Q.24 Explain the “Land Treatment” method of disposal of sewage.

Q.25 Describe the working of rapid sand filters with the help of diagram.