

**CVM Universtiy,**

**M.Sc. (EST) (First Semester) External Examination-2021**

**Subject Code:101350103: Water Pollution and Control Technology**

**Date: 26<sup>th</sup>, February, 2021 Timings:02.00 p.m. to 04:00 p.m. Total Marks: 60**

**Note: (1) Attempt all questions.**

**(2) Figures to the right indicate marks.**

**Q.1. (a) Answer the following multiple choice questions.**

**[08]**

1. Formula of alum is .....  
a)  $[Al_2(SO_4)_3 \cdot 18H_2O]$     b)  $[Al_3(SO_2)_3 \cdot 18H_2O]$     c)  $[Al_2(SO_4)_3 \cdot 18H_2O]$     d)  $[Al_2(SO_2)_2 \cdot 20H_2O]$
2. Infiltration galleries is the source of.....  
a) surface    b) sub surface    c) ground water    d) Both a and b
3. How are waterborne diseases transmitted?  
a) By not properly wash hands before eating    b) Through feces    c) Through contaminated water  
d) all of the above
4. Why ground water monitoring is important in control of water pollution?  
a) To provide more quantity of water    b) To increase the chemical contains in the water  
c) To provide good quality of water    d) To reduce the amount of water supplying from ground water
5. .... remove tastes and odours, and control biological growth throughout the water treatment system.  
a) Post chlorination    b) Pre chlorination    c) Sedimentation    d) Screening
6. Hardness in water is expressed in terms of \_\_\_\_\_ equivalents.  
a) Magnesium hydroxide    b) Calcium bicarbonate    c) Magnesium oxide    d) Calcium carbonate
7. During the following of treatment of water, sedimentation is done.  
a) Along with chlorination    b) Before filtration    c) After filtration    d) Simultaneously with filtration
8. Disinfection of water by using Ozone is not good because.....  
a) It added taste to the water    b) It removes odour and bacteria    c) It is more efficient than chlorine in killing bacteria  
d) It vanishes before the water reaches the consumers

**Q.1.(B) Answer the following. (Fill in the blanks and True/False)**

**[08]**

1. Measuring of pH is the physical monitoring of the lake.
2. Only pollution of rivers takes place by discharge sewage.
3. At breakpoint of chlorination, Residual chlorine reappears.
4. Pressure filters is more efficient than RSF.
5. Dissolved carbon dioxide, can be removed from the supply main by.....treatment.
6. The top of a body of ground water separated from the main water table is called.....
7. The permissible limits for fluoride is.....
8. Diptheria is caused by.....

**Q.2. Attempts any six short notes of the following**

**[12]**

1. Health effects of Hardwater
2. Water demand for Public use
3. Ground water sampling
4. Ozonation and Carbon Adsorption
5. Water washed diseases
6. Advantages of Chlorination
7. Expand term: Aquifer, Porosity
8. Flocculation treatment

**Q.3.** Explain the Factors affecting rate of water demand and significance of the following from the point of view of water Quality criteria. [08]  
i) Aersenic ii) Turbidity iii) Total Dissolved solids iv) Nitrate

**Or**

**Q.3.** Describe the pathway of pathogens with examples. Explain the treatment and occurrence of Nuisance oraganisms with appropriate diagram. [08]

**Q.4. 1.** Describe the types of tubewells and spring to the point of view of water quality. [04]

2. What are the causes and control measures of saline water intrusion. [04]

**Or**

**Q.4.** Descirbe about Vertical distribution of water content in contrast to Groundwater. [08]

**Q.5.** What is need to use coagulant and coagulant-aids for the water treatment process? Describe suitable coagulants with thier merits and demerits. [08]

**Or**

**Q.5.** What is the basic phenomana of the filtration process? Describe the slow sand and rapid sand filtration techniques for the treatment of water. [08]

**Q.6** Enumerate the different method for practices of Chlorination with details. [08]

**Or**

**Q.6.** What are need for advnced treatment proess? Explain Various membrane Processes in details. Discuss Factors imparting on performance of membrane processes. [08]