Reg. No. :

Question Paper Code: 59917

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Chemical Engineering

15UCH917- WASTE WATER TREATMENT

(Regulation 2015)

Duration: One hour   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The test used to assess the presence of pathogenic bacteria is_____   CO1- R

   (a) Coliform   (b) coli   (c) protozoa   (d) None of the above

2. Water quality act was amended in_____.   CO1- R

   (a) 1972   (b) 1987   (c) 1985   (d) 1976

3. Air stripping of waste water is done by_____.   CO2- R

    (a) Batch reactor   (b) PFR

   (c) Complete mix reactor   (d) Fluidized bed reactor

4. Stoichiometry of reaction refers to the definition of the quantities   CO2- R
   of……….. Involved in reaction.

   (a) Physical compound   (b) Chemical Compound

   (c) Biological Compound   (d) None of these

5. Precipitation is applicable for what types of solutes?   CO3- R

   (a) Insoluble   (b) Soluble   (c) Sparingly soluble   (d) Both insoluble and soluble

6. Neutralization involves addition of ____ substances with the waste.   CO3- R

   (a) Hydraulic   (b) Chemical   (c) Physical   (d) Biological

7. One of the steps involved in the overall anaerobic oxidation of a waste   CO4- R
   is

   (a) nitrification   (b) de-chlorination   (c) sedimentation   (d) methanogenesis

8. The aerobic decomposition of carbonaceous organic matter gives. CO4- R

    (a) Nitrites and water   (b) Carbon dioxide and water

    (c) Sulfates and water   (d) Nitrogen and Ammonia.

9. Cloth filter is generally made of CO5- R

    (a) canvas   (b) synthetic fabrics   (c) metal or glass fiber   (d) all of these

10. Which of the following factors are considered in ultra filtration? CO5- R

    (a) Size   (b) Color   (c) Taste   (d) Smell

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Discuss the unit operations and unit process used to remove particulate matter in industrial effluents.   CO1- U   (8)

12. Derive the mathematical analysis of ideal flow in complete mix reactor and PFR.   CO2- U   (8)

13. Discuss & explain the fundamentals of Chemical Coagulation.   CO3- U   (8)

14. Explain the working of the Activated sludge process with a neat flow diagram   CO4- U   (8)

15. Explain in detail about the technology of surface filtration..   CO5- U   (8)

59917