

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIFTH SEMESTER B.TECH DEGREE EXAMINATION (Regular), DECEMBER 2022**CHEMICAL ENGINEERING****(2020 SCHEME)****Course Code : 20CHT303****Course Name: Environmental Engineering****Max. Marks : 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. Explain briefly COD test.
2. Explain one method used for desalination.
3. Explain briefly on different types of settling.
4. Explain the working of grit chambers.
5. Mention the health effects associated with hazardous waste.
6. Write short note on incineration.
7. Mention the effects of air pollution.
8. Explain Pasquill stability class.
9. List out the advantages and disadvantages of electrostatic precipitator
10. Explain the methods used to control the emission of gaseous pollutants.

PART B***(Answer one full question from each module, each question carries 14 marks)*****MODULE I**

11. Explain in detail about the physical, chemical and biological (14) characteristics of wastewater and their sources.

OR

12. a) Explain first stage BOD and second stage BOD. What are the (7) steps involved in the laboratory determination of BOD?
b) What are ion exchange resins? Give the chemical reactions (7) involved during the (i) softening of water using ion exchange resins and (ii) regeneration of exhausted ion exchange resins.

MODULE II

13. Explain activated sludge process mechanism with a neat flow diagram. (14)

OR

14. Explain Anaerobic Filter Process and Up Flow Anaerobic Sludge Blanket Reactor with neat sketch. (14)

MODULE III

15. a) Write a note on sludge lagooning. (4)
b) Explain in brief various treatment processes adopted for treating industrial wastewater. (10)

OR

16. Explain sludge treatment process. (14)

MODULE IV

17. Discuss the different types of plume behavior with the help of neat diagram. (14)

OR

18. a) Explain the terms global warming and ozone layer depletion. (5)
b) Write briefly on classification and properties of air pollutants. (9)

MODULE V

19. a) Explain the working of an electrostatic precipitator with a neat sketch. (7)
b) What are fabric filters used for? Explain in detail with a neat sketch. (7)

OR

20. What are the effects of noise on human? Explain any three noise pollution control methods. (14)
