QP CODE: 21102244

Reg No : .....

Name : .....

**B.Voc Degree Examinations, SEPTEMBER 2021**

**Third Semester**

B.Voc Renewable Energy Technology and Management

**RETTG301 - WATER AND WASTE WATER TREATMENT**

2019 Admission Onwards

44777C44

Time: 3 Hours Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is TDS?
2. Write any two designated best use of water.
3. Explain unit operation.
4. List out classification of mechanical aerators.
5. Explain the effects of electrolyte in lyophilic and lyophobic sols.
6. What are the various contaminants removed by ozonation?
7. List out the various uses of cartridge filters.
8. List out the various processes of filtration.
9. How will you measure loss of head in the filtration process?
10. What is membrane distillation?
11. Draw a neat sketch which illustrates the working of osmosis.
12. What is the minimum and maximum range of pore size of a nanofiltration membrane?

(10×2=20)

**Part B**

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain the major objectives of the sedimentation process.

14. Explain the significance of nitrogen striping and chlorination in tertiary wastewater treatment.
15. Describe electrophoresis.
16. Give an account on the design of the clariflocculator.
17. Write a note on the chemical structure of disinfectants.
18. Explain the effect of formation of mud balls in filters.
19. Draw a neat sketch of the upflow filter.
20. Explain the experimental activities performed by scientists Thomas and Way that lead to the discovery of the ion exchange process.
21. Explain the principle of electrodialysis.

(6×5=30)

**Part C**

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Write an essay on designated best use of water.
23. With the help of a neat diagram explain the principle behind coagulation and flocculation.
24. Bring out the classification of filters based on:- a)Application of external force b) Operation of filtration c) Nature of filtration
25. With the help of a neat sketch explain the working of ultrafiltration. Also list out its various applications.

(2×15=30)