SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

M.Tech (Environmental Engineering) – I Year (I Sem)	
Course Name: Process and Treatment: Water Supply and Waste Water	**Code: MCE1003**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) The question paper has 03 sections and it is compulsory to attempt all sections.

b) All questions of Section A are compulsory; questions in Section B and C contain choice.

Section A: Very Short Answer type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	Specify the sources of Odor (Natural & Synthetic) in water.	BL1	CLO1	02
2.	What do you understand by the disinfection with UV Radiation?	BL1	CLO1	02
3.	Enlist the factors affecting sludge digestion.	BL1	CLO3	02
4.	Explain Secondary treatment of wastewater.	BL2	CLO3	02
5.	Describe the theory of filtration.	BL2	CLO2	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	Explain the methods of treating sludge.	BL2	CLO2	10
2.	Discuss the emerging technologies for sludge volume reduction	BL2	CLO2	10
3.	Distinguish between lime soda and zeolite process of removing hardness.	BL4	CLO2	10
4.	Discuss the purpose and concept of coagulation.	BL2	CLO2	10
5.	Briefly describe slow sand filter with diagram.	BL2	CLO1	10
6.	What are dissolved inorganics and how are these removed from wastewater?	BL1	CLO2	10
Section C: Long Answer Type Questions/Case Study **Attempt any 01 out of 03 questions.**		**BL**	**CLO**	**Marks (20)**
1.	Distinguish between the Activated Sludge Process and Trickling Filter with the help of diagram.	BL4	CLO3	20
2.	Discuss how the sludge, withdrawn from the sedimentation tank, cannot be disposed of directly? What can you do for this sludge? Is there any method to dispose raw sludge?	BL6	CLO4	20
3.	Two primary settling basins are 28m in diameter with 2.1m side water depth. Single effluent weirs are located on peripheries of the tank. For a water flow of 24000 m^3/d. Calculate (i) surface area and volume (ii)overflow rate	BL3	CLO3	20

	(iii)detention time (iv) weir loading.			
