

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: B.Tech/BHMCT
BRANCH: All

SEMESTER : V/VII
SESSION : MO/2023

SUBJECT: BE320 BIOTREATMENT OF MUNICIPAL & INDUSTRIAL WASTE

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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Q.1(a)	Design a method for estimation of physical parameters of wastewater effluent originated from mess kitchen of your hostel.	[2]	1 6
Q.1(b)	Wastewater sample collected from BIT hostel mess was analyzed for estimation of BOD ₅ . Calculate BOD ₅ , if 15 mL wastewater sample was diluted to 300mL before incubation by using standard seeded water. Initial DO level was 8.5mg/L. It was incubated in a BOD incubator for 5days, after 5days incubation at 27°C, DO level was 2.1mg/L.	[3]	4 4
Q.2(a)	Differentiate among BOD ₃ , BOD ₅ , BOD _U , and _N BOD.	[2]	1 4
Q.2(b)	Discuss a principle and method for determination of COD of municipal waste water sample.	[3]	4 2
Q.3(a)	Present a layout of wastewater treatment plant and discuss the philosophy involved in it.	[2]	3 2
Q.3(b)	What do you mean by preliminary treatment of wastewater. Present a design for preliminary treatment of wastewater coming from your hostel mess.	[3]	5 6
Q.4(a)	What is grit? Draw steps for separation of grits from wastewater.	[2]	2 6
Q.4(b)	Design a primary sedimentation tank for treatment of hostel mess wastewater. Also discuss its working.	[3]	5
Q.5(a)	Present the sources and composition of oil and grease isolated from municipal wastewater.	[2]	1 3
Q.5(b)	Propose methods to be used to clean the pipes and pumps inline present in a wastewater treatment plant to remove oil and grease.	[3]	4 3

:::29/09/2023 M:::