

GANPAT UNIVERSITY

B.Tech. Semester VI CIVIL Engineering,

Regular Examination – May / June: 2012

C 605: Environment Engineering-II

Max.Time: 3 Hours

Max. Marks: 70

Exam. No. of the candidate: _____ Supervisor's dated initial: _____

Instructions: - (1) Answer to the two sections must be written in separate answer books.

(2) Figures to the right indicate full marks.

(3) Assume suitable data if required.

Section - I

1 Assume suitable data; Design a screen chamber for 33 MLD of wastewater. 12

OR

1 Assume suitable data; Design a horizontal flow type Grit chamber for 33 MLD of wastewater. 12

2 Answer the following questions. 09

(A) Determine the liquid volume before and after digestion and percentage reduction for 600 kg (dry basis) Of primary sludge having the following characteristics.

	Primary	Digested
(i) Solids	6	12
(ii) Volatile matter (%)	65	65(destroyed)
(iii) Specific gravity of fixed solids	2.5	2.5
(iv) Sp. Gravity of volatile solids	≈ 1.0	≈ 1.0

(B) Enlist different biological process in wastewater treatment plant. 02

OR

2 Assume suitable design criteria; design a trickling filter for 3 million liter of water having an organic loading 15 mg/lit and hydraulic loading 3 m³/m²/sec. take peak factor 2.5. 11

P.T.O

3 Answer the following questions.

(A) An Average operating data for conventional activated sludge treatment plant is as follows:

1. Wastewater flow	50000 m ³ /day
2. Aeration tank volume	15500 m ³
3. Influent BOD	200 mg/lit
4. Effluent BOD	25 mg/lit
5. MLSS	3000 mg/lit
6. Effluent suspended solids	40 mg/lit
7. Waste sludge Suspended solids	12000 mg/lit
8. Quantity of waste sludge	250 m ³ /day

Based on above data determine:

(a) Aeration period (in hours) (b) F/M Ratio (c) Percentage Efficiency Of BOD removal (d) sludge age (Days).

Section - II

4 Answer the following questions.

(A) Write a short note on Anaerobic ponds.

(B) Draw Sludge treatment flow chart and explain any two treatment methods.

4 (A) Draw sewage treatment plant with different configuration.

(B) Explain mechanical composting with figure.

5 Answer the following questions.

(A) Describe factors affecting sewage system in detail.

(B) Explain oxygen sag curve.

5 (A) Draw and explain function of manhole.

(B) Zones of pollution in the stream.

6 Answer the following questions

(A) Define: Sewage, Sullage, night soil, organic waste

(B) Draw and explain drop manhole.

(C) Define: Refuse, garbage, Sewerage, inorganic waste

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