

7E4033

Roll No. : _____

Total Printed Pages : 3

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B. Tech. (Sem. VII) (Main/Back) Examination, December-2012

Civil Engg.

7CE3 Environmental Engg.-II

Time : 3 Hours]

[Total Marks : 80

[Min. Passing Marks : 24

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. _____ Nil

2. _____ Nil

UNIT - I

- 1 (a) Differentiate between :
- (1) Sullage and Sludge
 - (2) Sewage and Sewerage
 - (3) BOD and COD
 - (4) BOD and DO.

4×2=8

- (b) What is the significance of 5 day BOD determination at 20°C. Draw the BOD satisfaction curve with time showing both the stages and explain if.

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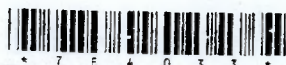
OR

- 1 (a) Derive the expression

$Y_t = L [1 - 10^{-K_d t}]$ and show that the total BOD is satisfied in infinite time.

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[Contd...

- (b) Calculate 1 day 37°C BOD of a sewage sample whose 5 day 20°C BOD is 150 mg/l.

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UNIT - II

- 2 (a) Suggest a suitable sewerage system for a city having population of 10 Lacs. How shall you calculate the sanitary sewage and storm water inflow ?

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- (b) Design a sewer line to serve a present population of 5000 persons and to flow 65% full. Check the velocity of flow.

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OR

- 2 Write short notes on the following :

- (i) Drop main hole
- (ii) Rational method
- (iii) Sewage Pumping
- (iv) Testing of Sewer line.

4×4=16

UNIT - III

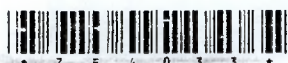
- 3 (a) Discuss the various types of screens and estimate the amount of screenings for a population of 10 Lacs on a medium screen. Discuss the loss of head through a screen.

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- (b) Briefly discuss the activated sludge process of treatment of sewage with its modifications.

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OR



- 3 (a) Discuss the design of grid chamber and the factors effecting the amount of grit collected per day.

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- (b) Sketch and explain the working of a trickling filter. Differentiate conventional and high rate trickling filter.

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UNIT - IV

- 4 (a) Explain the different stages of a river during its self purifications process.

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- (b) Explain the various ways in which waste water can be reused.

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OR

- 4 (a) Discuss the various systems of plumbing with their relative advantages.

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- (b) Draw and explain the working of common traps and flushing cistern.

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UNIT - V

- 5 (a) Discuss the effect of air pollution on human health.

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- (b) Describe the standard of Air quality and the allowable limits of air pollutants.

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OR

- 5 Write short notes on the following :

- (a) NGSE pollution
(b) Green house effect
(c) Global warming
(d) Acid Rain.

4×4=16

