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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **CE252U - Water Treatment and Processes**

Generated At : **19-04-2022 15:08:28**

Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

1) Attempt any SIX of the following.

- a) What do you mean by demand of water? [2]
- b) Enlists different types of intakes? [2]
- c) State the factors affecting water demand. [2]
- d) Define the pre-chlorination and post-chlorination. [2]
- e) Define and necessity of forecasting of population. [2]
- f) State the type of sedimentation. [2]
- g) What is disinfection of water? [2]
- h) Enlists the type of coagulant. [2]

2) Attempt any THREE of the following.

- a) What is fire demand? How it is estimated? [4]
- b) Explain the river intake with sketch and label the parts. [4]
- c) State the principles of sedimentation and two important factors affecting the design of sedimentation tank. [4]
- d) Define the term coagulation and state its principle. [4]

3) Attempt any THREE of the following.

- a) Compare slow sand filter with rapid sand filter. [4]
- b) What is water softening methods and explain ion exchange process of water softening. [4]
- c) Explain the lime soda method of removing hardness of water. What are its advantages and disadvantages? [4]
- d) What is aeration? State the four objects of aeration. [4]

4) Attempt any TWO of the following.

- a) What are the various layout systems of distribution of water? Explain dead end system with suitable sketch. [6]
- b) Explain the methods of distribution of water. [6]
- c) Define chlorination. State the four forms of chlorination and explain break point chlorination. [6]

5) Answer the following questions.

- a) List out various physical, chemical and bacteriological tests required before the treatment of water and give purpose of each. [6]
- b) Write a short note on [6]
 - 1) Electrolysis
 - 2) Reverse osmosis

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