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Question Paper Code : 41006

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Seventh Semester

Computer Science and Engineering

OCY 751 — WASTE WATER TREATMENT

(Common to : Biomedical Engineering/Computer and Communication Engineering/Electronics and Communication Engineering/Electronics and Telecommunication Engineering/Medical Electronics/Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State about the chemical and biological parameters of water.
2. Highlight the important aspects of stability of colloids.
3. Write the considerations of the characteristics of the filtering media.
4. What are the limitations of lime soda process?
5. Mention the importance of the adsorption principle in the conventional waste water treatment methods.
6. Specify the important factors influencing the corrosion.
7. Give a brief note on equalization and neutralization processes in the waste water Treatment.
8. State about the important aspects followed in the aerated lagoons.
9. Give an example each for cation and anion exchange resins.
10. Distinguish between absorbent and adsorbate.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the water purification systems based on chemical processes and biological processes. (13)

Or

- (b) Describe the principle and processes of coagulation and flocculation methods. (13)
12. (a) Elaborate the process mechanism of sand filters hydraulics of filtration of industrial water treatment. (13)

Or

- (b) Summarize the principle and application methods of industrial water treatment for boilers. (13)
13. (a) Give a detailed account on the aeration and ion exchange methods adopted in the conventional water treatment processes. (13)

Or

- (b) Elaborate the method of applications suitable for the corrosion prevention and control. (13)
14. (a) Explain the mechanism involved in the oil separation gas stripping of volatile organics of waste water treatment processes. (13)

Or

- (b) Summarize the sequential steps involved in the trickling filtration and anaerobic decomposition methods of waste water treatment processes. (13)
15. (a) Describe the method of applications carried out during the chemical oxidation and advanced oxidation processes. (13)

Or

- (b) Discuss on the issues and the difficulties associated with the sludge handling and the disposal processes. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Specify the importance and the effects achieved during the primary, secondary and tertiary treatments. (15)

Or

- (b) Clarify the important factors of destabilization of colloids, transportation of colloidal particles and clariflocculation. (15)