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Question Paper Code : 54008

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2018
First Semester
Civil Engineering
CY 8151 – ENGINEERING CHEMISTRY
(Common to : All Branches (Except Marine Engineering))
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Name any two salts that cause temporary hardness.
2. What is reverse osmosis ?
3. List any four characteristics of enzyme catalysis.
4. What are autocatalysts ? Give an example.
5. Define "component" and "Degree of freedom".
6. What are the uses of phase diagram ?
7. What is a calorie ? Give the different units of calorific value.
8. How coals are classified ?
9. Give an example each for nuclear fission and nuclear fusion reactions.
10. What are the advantages of lithium cell ?



PART – B

(5×16=80 Marks)

11. a) i) What are the essential requirements of boiler feed water? (6)
ii) What are the various boiler troubles and how they can be prevented? (10)

(OR)

- b) i) Write the differences between internal and external treatment of boilers. (6)
ii) Discuss the various methods available for internal conditioning. (10)

12. a) What is an adsorption isotherm? Draw the five general types of adsorption isotherms. Derive Langmuir adsorption isotherm mathematically. (16)

(OR)

- b) i) Give any four applications of adsorption. (4)
ii) Derive Michaelis Menten equation for enzyme catalysis. (12)

13. a) Draw and explain the phase diagram of Pb-Ag eutectic system. (16)

(OR)

- b) With two cooling curves for pure substance and mixture, discuss briefly about thermal analysis. (16)

14. a) With a neat diagram of Orsat's apparatus, explain the analysis of flue gas. (16)

(OR)

- b) What is ultimate analysis of coal? Give its significance. (16)

15. a) Explain the construction, charging and discharging of lead acid accumulator. (16)

(OR)

- b) What are the components of a nuclear power reactor and explain the functioning of light water nuclear power reactor with a neat diagram? (16)