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Question Paper Code : 42404

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

First Semester

Civil Engineering

CY 2111 – ENGINEERING CHEMISTRY – I

(Common to all Branches)

(Regulations 2008)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Define demineralization with example.
2. Write the structure of EDTA.
3. What is rubber vulcanization ? Give example.
4. Give any two condensation polymerization reaction.
5. Write short note on adsorption isotherm.
6. Mention the types of adsorption.
7. Give two example each fission and fusion reactions.
8. Define the term alkaline batteries.
9. What are abrasives ? Give examples.
10. Mention any three uses of solid lubricants.

PART – B

(5×16=80 Marks)

11. a) i) Give detailed note on internal and external conditioning of water. (8)
ii) Write all the domestic water treatment methods and explain. (8)

(OR)



- b) i) Explain reverse osmosis and desalination with block diagram. (8)
ii) How to determine hardness by using EDTA ? Explain in detail. (8)
12. a) i) Explain the mechanism of free radical polymerization with example. (8)
ii) Write note on plastics and explain the preparation, properties and uses of any three plastic materials. (8)
- (OR)
- b) i) Give the synthesis of butyl rubber, SBR, Teflon, Nylon 6, 6, and PVC. (8)
ii) Explain the polymer matrix composites and types in detail. (8)
13. a) i) Explain adsorption of solute from solution with examples. (8)
ii) Write the role of adsorbents catalysis and ion exchange water treatment. (8)
- (OR)
- b) i) Give the detailed explanation on adsorption of gases on solids. (8)
ii) Derive Langmuir adsorption isotherm with temperature and pressure. (8)
14. a) i) Give detailed explanation on lead-acid and Ni-Cd batteries. (8)
ii) Explain breeder reactor, wind energy in Indian context. (8)
- (OR)
- b) i) Write note on solar energy conversion, solar cells and fuel cells. (8)
ii) Explain with diagram light water nuclear reactor for power generation. (8)
15. a) i) List out all refractories preparation, properties and uses. (8)
ii) Explain the types, preparation, properties and applications of lubricants. (8)
- (OR)
- b) i) Write note on natural and synthetic abrasives with examples. (8)
ii) Explain the preparation of carbon nanotube and its applications. (8)