Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 20382

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Second Semester

Civil Engineering

CY 6251 — ENGINEERING CHEMISTRY — II

(Common to all branches except Marine Engineering)

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the principle of reverse osmosis.
2. Find out the causes for scale and sludges in boiler.
3. Write the significance of electroless plating.
4. What is corrosion?
5. State the basic principle of fuel cell.
6. What are the types of batteries?
7. State different types of refractory materials.
8. Give the classification of abrasives.
9. Write the composition of CNG.
10. Define calorific value of fuel.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Identify the reasons for corrosion in boiler. (6)

(ii) Describe the internal treatment of water. (10)

Or

(b) (i) Explain the zeolite process of water treatment. (6)

(ii) Discuss the demineralisation process of water treatment. (10)

12. (a) (i) Derive Nernst equation for electrode potential. Mention its applications. (10)

(ii) Describe sacrificial anodic protection of corrosion. (6)

Or

(b) (i) Explain in detail about the causes of corrosion and factors connected with metal which influence the rate of corrosion of metal. (10)

(ii) Discuss about Galvanic corrosion. (6)

13. (a) (i) Demonstrate the construction, working and application of lithium sulphur battery. (8)

(ii) Write a detailed note on breeder reactor. (8)

Or

(b) (i) Interpret the working principle of alkaline battery with a neat diagram. (8)

(ii) Explain the method of conversion of nuclear energy to electrical energy in a nuclear reactor. (8)

14. (a) (i) Explain the setting and hardening of cements with reactions involved. (8)

(ii) Describe the manufacture and important properties of alumina bricks and carborundum. (8)

Or

(b) (i) Write the composition, properties and uses of soda and flint glasses. (8)

(ii) Describe the determinations of Pyro metric Cone Equivalent (PCE) of refractories. (8)

15. (a) Explain the Orsat's apparatus method used for flue gas analysis. (16)

Or

(b) (i) What is LPG? State its composition and applications. (6)

(ii) Describe the proximate analysis of coal. (10)
