Reg. No. :

Question Paper Code: 31004

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

First Semester

Civil Engineering

01UCY104 - ENGINEERING CHEMISTRY

(Common Mechanical Engineering)

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Represent the repeating unit of Teflon and SBR.

2. Define composite materials.

3. What is meant by refractoriness under load?

4. Define flash point.

5. State Pilling Bed Worth rule.

6. List out any two important objectives of electro plating.

7. Define desorption.

8. Give an example of auto catalysis reaction.

9. State Beer-Lamberts law.

10. What are the types of electronic transitions?

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss in detail about addition and condensation polymerisation with suitable examples.   (16)

Or

(b) (i) Discuss in detail about the preparation, properties and uses of polyethylene. (8)

(ii) What are composites? Explain their types. (8)

12. (a) (i) Discuss briefly on any four important properties of refractory materials. (8)

(ii) Describe the manufacture of Portland cement by wet process. (8)

Or

(b) What are solid lubricants? Mention their advantages with a neat sketch, explain the functioning of any one solid lubricant. (16)

13. (a) (i) Explain the mechanism of chemical corrosion. (8)

(ii) What are corrosion inhibitors? How do they function? (8)

Or

(b) (i) How is corrosion controlled by sacrificial anode and impressed cathodic current methods? (8)

(ii) Discuss briefly on important constituents and their functions of paint. (8)

14. (a) (i) Compare and contrast Freundlich and Langmuir adsorption isotherms. (8)

(ii) Give an elaborate account of adsorption in pollution abatement. (8)

Or

(b) (i) Describe any three methods of removal of heavy metals from effluents. (8)

(ii) Discuss briefly on catalysis. (8)

15. (a) (i) How is nickel estimated by atomic absorption spectroscopy? (8)

(ii) Describe the estimation of sodium by flame photometry. (8)

Or

(b) Explain the principle and estimation of iron by UV-visible spectrometry. (16)

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