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**Question Paper Code : 21326**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Second Semester

Civil Engineering

CY 2161/CY 24/080010002 — ENGINEERING CHEMISTRY — II

(Common to all branches (Except Marine Engineering))

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define electrode potential.
2. What is a reference electrode?
3. What is corrosion? What are its types?
4. What is electroless plating?
5. What is knocking?
6. What are the desirable characteristics of metallurgical coke?
7. What is an eutectic system?
8. Give the composition and use of brass and bronze.
9. State Beer Lambert's law.
10. What is a finger print?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What is an electrochemical series? What are its uses? (8)
- (ii) Give the construction and working of a glass electrode. (8)

Or

- (b) Explain and derive the Nernst equation. What are its applications? (16)

12. (a) Why corrosion be prevented? Discuss the methods of corrosion control.(16)

Or

(b) What is paint? What are its Constituents? Explain the functions of each constituent. (16)

13. (a) Explain the Petroleum refinery process in detail with neat sketches. What are the properties and applications of its various fractions? (16)

Or

(b) (i) Describe the Fischer Tropsch method with a neat sketch. (8)

(ii) What is producer gas? What is its composition? Discuss its method of production. (8)

14. (a) (i) Explain the phase diagram of water in detail with a neat diagram. (10)

(ii) Define phase, component and degrees of freedom with suitable example. (6)

Or

(b) (i) Explain the phase diagram of lead silver system. (8)

(ii) What is condensed phase rule? What is its significance? (8)

15. (a) Discuss the Principle, construction and working mechanism of the UV visible spectroscopy. (16)

Or

(b) Explain the following :

(i) Estimation of Ni by AAS (8)

(ii) Estimation of Na by flame Photometry. (8)