Register No: ……

B.E. DEGREE EXAMINATIONS: APRIL / MAY 2011

Second Semester

CIVIL ENGINEERING

CHY102: Chemistry for Civil Engineering

Time: Three hours **Maximum Marks: 100**

Answer ALL Questions

PART A (10 x 1 = 10 Marks)

1. Calgon is a trade name given to

   (A) Sodium silicate (B) Calcium phosphate

   (C) Sodium hexa meta phosphate (D) Sodium Zeolite

2. Brackish water mostly contains dissolved

   (A) Ca Salts (B) Mg Salts (C) NaCl (D) Suspended impurities

3. Corrosion is as example of

   (A) Oxidation (B) Reduction (C) Electrolysis (D) Erosion

4. During galvanic corrosion, the more noble metal acts as

   (A) Anode (B) Cathode

   (C) Anode as well as cathode (D) Corroding metal Suspended impurities

5. Major component of Portland cement is

   (A) Tri calcium Silicate (B) CaO (C) MgO (D) $CaSO_4$

6. The function of gypsum is to

   (A) start the setting of cement (B) stop the hydration of cement

   (C) retard the easily initial setting of the cement (D)forming plastic to the cement

7. Nylon is

   (A) a polythene derivatives (B) a polyester fibre

   (C)a polyamide fibre (D) a poly phenol formaldehyde

8. Fibres in composite containing metal- matrix provides

   (A) decreased density (B) stiffness(C) decreased density & stiffness (D)Elongation

9. A good refractory material must

   (A) be chemically inactive in use (B) possess low softening temperature

   (C) undergo spalling (D) possess high thermal expansion

10. The single most important property of lubricating oil is its

(A) fire point (B) cloud point (C) oiliness (D)viscosity Index

PART B (10 x 2 = 20 Marks)

11. Define hardness of water.
12. What is meant by priming and foaming?
13. Distinguish dry corrosion and wet corrosion.
14. What is differential aeration corrosion?
15. Write the chemical composition of Alumina cement.
16. How the paints are differ from varnishes?
17. How is polyurethane prepared?
18. Write few characteristics of FRP.
19. What is carborundum? How is it prepared?
20. What are solid lubricants? Mention their applications.

PART C (5 x 14 = 70 Marks)

21. a) (i) Discuss the process of demineralization of water using ion exchange resins. (7)

(ii) What is desalination? Explain Reverse Osmosis process. (7)

(OR)

b) (i) Explain internal conditioning methods. (7)

(ii) Give an account of boiler troubles. (7)

22. a) (i) Explain the mechanism of electro chemical corrosion. (7)

(ii) How can corrosion be prevented by cathodic protection method? (7)

(OR)

b) (i) Discuss the factors influencing the rate of corrosion. (7)

(ii) Explain pitting corrosion. (7)

23. a) (i) Explain setting and hardening of concrete. (7)

(ii) Discuss water repellant and luminous paints. (7)

(OR)

b) (i) Explain classification of lime (7)

(ii) Discuss the mechanism of Drying Oils. (7)

24. a) (i) Explain the characteristics of FRP. (7)

(ii) Write the preparation, Preparation and uses of Poly amides and poly carbonate. (7)

(OR)

b) (i) Explain the properties of polymer blends. (7)

(ii) Discuss the uses of FRP. (7)

25. a) (i) Discuss the properties of Refractories . (7)

(ii) Explain Solid lubricants. (7)

(OR)

b) (i) Explain the preparation and properties of alumina bricks. (7)

(ii) Discuss the properties of lubricants. (7)

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