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B.E./ B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2011

(Common to Civil and Geoinformatics)

7

SECOND SEMESTER

CY 181 –CHEMISTRY II

(REGULATIONS 2004)

Time: 3 hours

Max. Marks: 100

Instructions: 1.....
2.....

Answer ALL Questions

Part - A (10 X 2 = 20 Marks)

1. Write note on dispersion.
2. Brief about bond order.
3. Name the monomers used in the preparation of urea formaldehyde
4. How will you prepare PMMA?
5. What is Pilling- Bedworth rule?
6. Write note on temperature indicating paints.
7. Brief about high alumina cement.
8. Define: Composites. Give example.
9. What are the requisites of drinking water?
10. Explain: Colloidal conditioning.

Part-B (5 x 16 = 80)

- 11 i) Write in detail about the concept of linear combination of atomic orbital (LCAO) in hetero diatomic molecules. (8)
ii) Write in detail about the industrial applications of coordination compounds (8)
- 12 a) i) Write preparation, properties and uses of bakelite. (8)
ii) What is meant by vulcanization? Explain the process of vulcanization of rubber. (8)

(OR)

- b) i) Write in detail about chemical structure and electronic behaviour of conducting polymer (8)

ii) Distinguish between thermoplastics and thermosetting plastics. Give one example of each type. (8)

13 a) i) What is cathodic protection? How the corrosion can be controlled by sacrificial anode? (8)

ii) Explain the mechanism of hydrogen evolution and oxygen absorption in electrochemical reactions (8)

(OR)

b) i) What is a paint? What are the constituents of paints? Discuss their functions? (8)

ii) Write in detail about pitting corrosion and galvanic corrosion. (8)

14 a) i) Discuss in detail about setting and hardening of cement, giving reactions involved in such a process (8)

ii) What are refractories? How refractories are classified? Give one example for each class. (8)

(OR)

b) i) What are the constituents of composites ? Discuss in detail about FRP. (8)

ii) Give the properties and applications of metal matrix composites (8)

15) a) i) Describe the process demineralization of water using ion-exchange resins and specify its advantages over zeolite process? (8)

ii) What causes scale formation in boilers? How are the phosphate and calgon conditioning methods minimise the scale formation in boilers? (8)

(OR)

b) i) Define the term desalination. With a neat diagram, describe desalination by reverse osmosis method (8)

ii) Discuss the problems associated with the use of hard water in various industries. (8)
