

Roll No.									
----------	--	--	--	--	--	--	--	--	--

B.E. / B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2011.

CIVIL ENGINEERING BRANCH

SECOND SEMESTER

CY 9161- CHEMISTRY FOR CIVIL ENGINEERS

(Common to Civil, Geoinformatics and Agriculture & Irrigation Engineering)

(REGULATIONS -2008)

Time: 3 Hr

Max. Marks: 100

Instructions: 1.....

2.....

Answer ALL Questions.

Part- A (10 x 2 = 20 marks)

1. Why is the hard water softened before using in boiler?
2. What is break point chlorination?
3. Name the monomers used in making PVC and bakelite.
4. What is meant by copolymerization? Give example.
5. State Pilling –Bedworth rule.
6. What are the main constituents of lacquer?
7. Mention any two important properties of magnesite bricks.
8. Write in brief about carborundum.
9. Name any two adhesive used for bonding wooden surfaces, plywoods, laminates etc?
10. Write in brief about casein glues.

Part - B (5 x 16 = 80 marks)

11. (i) What are the chemical factors influencing the adhesive action of an adhesive. (8 marks)
(ii) What are adhesives? Explain the bonding process of adhesives (8 marks)
12. a (i) What are the requirements of potable water? Explain how water is treated for this purpose. (8 marks)
(ii) Describe the external treatment of water by ion exchange methods. How the exhausted resins are regenerated? (8 marks)
(or)
b. (i). What is desalination? Discuss the reverse osmosis method of desalination (8 marks)

(ii) What are the different internal methods used for treating boiler feed water? (8 marks)

a (i) What are the differences between thermoplastic and thermosetting resins with two examples? (8 marks)

(ii) Give preparation, properties and uses of PMMA and TEFLON (8 marks)

(or)

b (i) What are the disadvantages of natural rubber? Explain the process of vulcanization of rubber. Mention its advantages. (8 marks)

(ii) What are laminated glass and laminated plastics? What are their applications? (8 marks)

13. a (i) What are paints? What are the constituents of paint? Mention their functions with example. (8 marks)

(ii) Explain the mechanism of dry corrosion. Explain the role of oxide film in dry corrosion. (8 marks)

(or)

b (i) What is cathodic protection? Discuss with example how steel is protected from corrosion cathodically (8 marks)

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

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

(ii) What are metal matrix composites? Give its properties and uses. (8 marks)

(or)

b (i) What are ceramic matrix composites? Give its properties and uses (8 marks)

(ii) Explain the classification of refractories with two examples each (8 marks)
