

7/11/13

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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

COMMON TO CIVIL, GEOINFORMATICS AND AGRICULTURE AND IRRIGATION ENGINEERING

SECOND SEMESTER

CY 9161 – CHEMISTRY FOR CIVIL ENGINEERING

(REGULATIONS 2008)

Time: 3 Hours

Max. Marks 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. What is meant by Scale and Sludge formation in boilers?
2. Give any two requisites of drinking water.
3. What is meant by co-polymerisation? Give an example.
4. How is Bakelite prepared?
5. What is Pilling-Bedworth rule?
6. Write a brief note on lacquers.
7. What is white portland cement?
8. Give any two methods to prevent decay of cement concrete.
9. What are adhesives? Name an adhesive used for bonding metals.
10. What is animal glue? Give any one of its limitation.

Part – B (5 x 16 = 80 Marks)

11. (i) Explain desalination of water by reverse osmosis method. (8 Marks)
(ii) What is meant by disinfection of water? Explain how disinfection is carried out by chlorination technique. (8 Marks)

- 12.a (i) What is vulcanization of rubber? List any five advantages of vulcanized rubber. (8 Marks)
(ii) Discuss the free radical mechanism in addition polymerisation. (8 Marks)

(OR)

- 12.b (i) Distinguish between thermosetting and thermoplastic polymers. (8 Marks)
(ii) Discuss the preparation, properties and uses of TEFLON. (8 Marks)

- 13.a (i) What is cathodic protection? Explain sacrificial anode method of controlling corrosion. (8 Marks)
- (ii) What are drying oils? Describe the mechanism of drying of oil in paint. (8 Marks)

(OR)

- 13.b (i) Write short notes on Pitting Corrosion. (6 Marks)
- (ii) Discuss the importance of design and material selection in controlling corrosion. (10 Marks)

- 14.a (i) Explain setting and hardening of Portland cement with appropriate equations. (10 Marks)
- (ii) Describe the preparation, properties and uses of carborundum bricks. (6 Marks)

(OR)

- 14.b (i) What are composite materials? Discuss briefly on fibre-reinforced composites. (8 Marks)
- (ii) Give the preparation, properties and uses of Silica bricks. (8 Marks)

- 15.a (i) Discuss the various physical factors influencing adhesive action. (10 Marks)
- (ii) Write short notes on phenol formaldehyde resins. (6 Marks)

(OR)

- 15.b (i) Explain the various chemical factors influencing adhesive action. (6 Marks)
- (ii) Describe in detail the bonding processes of adhesives. (10 Marks)
