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Reg. No. :

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Question Paper Code : 53005

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

Second Semester

Civil Engineering

CY 201 — ENGINEERING CHEMISTRY — II

(Common to all branches)

(Regulation 2007)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How are refractories classified? Give one example for each class.
2. What is an adhesive?
3. What are corrosion inhibitors?
4. What is meant by electrochemical corrosion?
5. Why is PVC used in chemical industries?
6. What is meant by degree of polymerisation?
7. What is meant by calorific value of a fuel?
8. Define Knocking.
9. Why is lubricant needed?
10. Define : Component.

PART B — (5 × 16 = 80 marks)

11. (a) (i) How are carborundum and boron carbide manufactured? What are their uses? (8)
- (ii) Discuss the four essential properties of a good refractory material. (8)

Or

- (b) (i) What are the constituents of cement? Discuss the mechanism of setting and hardening of cement. (8)
- (ii) Write short notes on characteristics of a good adhesive. (8)
12. (a) (i) What are paints? What are their characteristics? Name the various constituents of paints. (8)
- (ii) Explain any four factors influencing the nature of electro deposit. (8)

Or

- (b) (i) What are cathodic and anodic protection for controlling corrosion? Discuss their merits and demerits. (8)
- (ii) Write short note on factors influencing atmospheric corrosion. (8)
13. (a) (i) What are the ingredients used in compounding of plastics? State their functions. (8)
- (ii) Explain with examples addition and condensation polymerisation. (8)

Or

- (b) (i) Write short notes on preparation, properties and uses of (8)
- (1) Bakelite
- (2) Epoxy resins.
- (ii) With a neat sketch, give a brief account on injection moulding. (8)
14. (a) (i) What are the characteristics of metallurgical coke? (8)
- (ii) How is coke manufactured by Otto Hoffman by product oven process? (8)

Or

- (b) (i) Explain proximate analysis. Give its usefulness. (8)
- (ii) Calculate the gross and net Calorific value of coal sample having the following composition
- C = 80%, H = 7%, O = 3%
- S = 3.5%, N = 2.1% and ash 4.4%. (8)

15. (a) (i) Draw and explain the phase diagram of water system. (8)
(ii) How is Silver separated from argentiferous lead? (8)

Or

- (b) (i) Write a brief note on solid lubricants. (8)
(ii) Describe any four desirable properties of a lubricating oil. (8)
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