Reg. No. | | | | | | | | | | | | |

Question Paper Code : 91005

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Second Semester

Aeronautical 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. What is an adhesive?
2. What happens when lime is treated with water?
3. Why are drying oils used in paints?
4. What is differential aeration corrosion?
5. What is Thermocole?
6. Why is plasticizer used during moulding of plastics?
7. What is meant by calorific value of a fuel?
8. What is meant by octane number of a gasoline?
9. Define phase.
10. What is meant by the term lubrication?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the chemistry of setting and hardening of cement. (8)

(ii) Give an account of preparation, properties and uses of any two abrasives. (8)

Or

(b) (i) Write a brief note on carborundum and silica refractories. (8)

(ii) How is portland cement manufactured? Explain. (8)

12. (a) (i) What is electrochemical corrosion? Describe the mechanism of electrochemical corrosion. (8)

(ii) Discuss any four methods of corrosion control. (8)

Or

(b) (i) What is a paint? State the different constituents of a paint and explain their function. (8)

(ii) Explain the principle of electroplating and electroless plating. (8)

13. (a) (i) Explain injection moulding with a neat diagram. (8)

(ii) Write short notes on the preparation and properties of Teflon and PVC. (8)

Or

(b) (i) What is meant by compounding of plastics? Explain. (8)

(ii) How will you prepare the following (4+4)

(1) Bakelite

(2) Epoxy resins.

14. (a) (i) What is water gas and how is it prepared? Explain. (8)

(ii) Give the properties of metallurgical coke. What are its advantages? (8)

Or

(b) (i) Calculate the gross and net calorific value of coal having the following Compositions; C= 85%, H_2 = 8%, S = 1%, N_2 = 2% and ash = 4%. Latent heat of steam = 587 cal/g. (8)

(ii) Explain any one method of obtaining synthetic petrol. (8)

15. (a) (i) Draw and explain the phase diagram of water system. (8)

(ii) Derive condensed phase rule equation. (8)

Or

(b) (i) Describe any four desirable properties of a lubricating oil. (8)

(ii) Write short note on solid lubricants. Give suitable examples. Mention its advantages. (8)

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