

2019

MAJOR

1st Semester Examination

INDUSTRIAL CHEMISTRY

Paper—C 2-T

Full Marks : 60

Time : 3 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

1. Answer any ten questions from the following : 10×2
- (a) Define ductility and plasticity. 2
  - (b) Distinguish malleability and machinability. 2
  - (c) Rusting of an iron is a good example of Corrosion—explain. 2
  - (d) What is duralumin? Give its composition and one application. 2
  - (e) What is meant by the term high carbon steel? Give its application. 1+1

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- (f) What is the difference between addition and condensation polymerization. 2
- (g) What is a composite material ? 2
- (h) What are refractory material ? State some uses. 1+1
- (i) Define glass transition temperature. 2
- (j) What is bag house? 2
- (k) What is trickling filter? 2
- (l) Define BOD. 2
- (m) What do you mean by pulverization? 2
- (n) Define calcination. 2
- (o) Explain the importance of safety laws in industry. 2

2. Answer any four from the following : 4×5

- (a) Describe activated sludge process with a sketch. 5
- (b) Name two glass forming oxides. What are glass intermediate oxides? 2+3
- (c) How is portland cement made? Why is a small amount of gypsum added to portland cement? 2½+2½

- (d) Mention same factors that affect corrosion of metals. 5
- (e) Distinguish thermosetting and thermoplastic plastic material with suitable examples. 5
- (f) Describe oil floatation method in metal extraction process, specially mentioning the principle and procedure.

3. Answer any two from the following : 2×10

- (a) (i) Mention some applications of polypropylene. 2
- (ii) What is natural rubber latex? Briefly describe how natural rubber is produced in the bulk form. 2+3
- (iii) Define setting and hardening of cement. 3
- (b) (i) What is pitting corrosion? Where are pits usually initiated? 2+1
- (ii) Describe two methods by which cathodic protection can be used to protect a steel pipe from corroding. 4
- (iii) How is raw pig iron extracted from iron oxide ores? 3

[ Turn Over ]

- (c) (i) What alloying elements are necessary to make a stainless steel "stainless"? Why is it called "stainless" ? 1+2
- (ii) Describe the principle by which the electrosatic precipitator and wet scrubber work. 3+2
- (iii) What do you mean by solid waste management? 2
- (d) (i) What are gangue? Mention the components of gangue during extraction of copper and aluminium. 1+1
- (ii) Discuss the role of cryolite and fluosper in aluminium extration from ore. 2
- (iii) Describe the extraction process of metallic copper from copper pyrites by dry process. 6
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