

**College of Engineering, Pune**  
**End Semester Exam – May 2010**  
**F . Y. B. Tech**  
**(AS-103)- (Chemistry)**

Day & Date- Monday, 10-05-2010

Maximum Marks: 50

Time: - 10 to 1.00 pm  
Duration - 3 hrs

**Instructions:**

1. Solve all the questions
2. Figures to the right indicate full marks.
3. Draw neat, labeled diagram wherever necessary
4. Do not keep mobile phone with you, if found it will be detained permanently by exam cell.

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- Q.1 A. Discuss the commercial synthesis and mechanism involved for two polymers, one formed by addition polymerization and other by condensation polymerization with one property and application for each. 8
- B. Differentiate between thermoplastic and thermosetting polymers 2
- Q.2 A. Explain Mohr's method for estimation of chloride content in given water sample. 5
- OR
- Explain how one can determine the unknown concentration of potassium permanganate solution using suitable instrumental method. 5
- B. A steel pipe is connected to copper plumbing and after a period of time a layer of rust is observed on the pipe. Explain the type and mechanism of corrosion. 5
- Q.3 A. Explain refining process of crude petroleum with fractions and their applications. 5
- B. Define the following:- (Any 5) 5
- a) Degree of Polymerization
  - b) Octane Number
  - c) Beer-Lambert's law
  - d) Law of rationality of Indices
  - e) Bathochromic shift
  - f) Corrosion

- Q. 4 A. Discuss the suitable instrumental method for determination of amount of iron in the given blood sample. 6
- B. Discuss Proximate analysis of coal and give its significance. 4
- OR
- B. Give the classification of fuels. 4
- Q. 5 A. Suggest the most suitable material for following application:- (Any 5) 5
- a) Utensils for kitchen
  - b) Shoe sole
  - c) Squeeze bottles for liquid detergent
  - d) Springs
  - e) Body of the computers
  - f) Hair conditioners
  - g) Fabric for industrial filtration
- B. What are alloy steels? Give the composition, properties and applications of stainless steel. 5
- OR
- B. Discuss the factors affecting corrosion. 5