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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

LONERE – RAIGAD – 402 103

Semester Examination – December – 2017

Branch: B. Tech. **Semester: I**

Subject with Subject Code: Engineering Chemistry (CHM103) **Marks: 60**

Date: 15 / 12 / 2017 **Time: 3 Hrs.**

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Instructions to the Students:

1. Each question carries 12 marks.
2. Attempt any FIVE questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

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(Marks)

Q.1. Attempt Any TWO questions of the following:

a) Explain Ion Exchange process of softening of water with its advantages and disadvantages. (06)

b) How does the Hardness of water determined by EDTA complexometric method? (06)

c) Write note on Chemical Oxygen Demand (COD). (06)

Q. 2. a) State Phase rule equation. Explain the term Component of phase rule with examples. (06)

b) What is meant by Eutectic point? Explain Silver-lead two component alloy system with phase diagram. (06)

Q.3. a) Describe the process of electrolytic refining of crude copper metal. (06)

b) Explain the Gravity separation and Magnetic separation method for physical concentration of metals. (06)

Q.4. Attempt Any TWO questions of the following:

a) Give the classification of fuels and explain characteristics of good fuel. (06)

b) Discuss the Proximate analysis of coal with its significance. (06)

c) Explain Thick film and Thin film lubrication with suitable examples. (06)

Q.5. a) How does Ethyl alcohol manufactured from molasses by Fermentation process? (06)

b) Explain synthesis, physical-chemical properties and uses of Pyridine. (06)

Q.6. Attempt Any TWO questions of the following:

a) Define the terms Ohms Law, Specific conductance, Equivalent conductance, Molecular Conductance and Cell constant with their units. (06)

b) Explain in detail Debye-Huckel theory of Strong electrolyte. (06)

c) Write note on: Glass Electrode. (06)

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