

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg.) 2016 Admission

Ist Semester Final Examination-February-2017

Cat. No: Sacs.1103.

Marks: 50.00

Title: Engineering Chemistry (2+1)

Time: 2 hours

I State True or False

(10x1=10)

1. Hard water is not suitable for steam raising in boilers.
2. A block copolymer is a branched copolymer.
3. Silicones are synthetic lubricants.
4. The conductance of a solution depends on the number of ions in solution.
5. Electrochemical corrosion occurs in the dry state.
6. TiO_2 is used as a blue pigment.
7. Kerosene can be used as a jet engine fuel.
8. Molecules like H_2O , NH_3 which have permanent dipole moment do not exhibit IR spectra.
9. Riboflavin is usually known as vitamin B_2 .
10. Waxes have high nutritional value.

II Write short notes/answers on any FIVE of the following

(5x2=10)

1. What is zeolite? Mention its use.
2. What is natural rubber?
3. Briefly explain the terms lubricant and lubrication.
4. Specific conductance decreases but equivalent conductance increases on dilution. Why?
5. Zinc is more readily corroded when coupled with copper than with lead. Why?
6. Name the organic acid present in butter. Draw its structure?
7. What are sweeteners? Give an example of an artificial sweetener.

III Write short answers on any FIVE

(5x4=20)

1. Write a note on Beer-Lambert law.
2. What are flavouring agents? Give two examples of flavouring agents used in food processing.
3. Give an account of ion exchange process for softening water.
4. Distinguish between addition and condensation polymerization.
5. What are the characteristics of a good lubricant?
6. Calculate the standard 'emf' of the cell $Zn/ZnSO_4//CuSO_4/Cu$. Standard reduction potentials are $E^\circ_{Zn^{2+}/Zn} = -0.763$ volt and $E^\circ_{Cu^{2+}/Cu} = +0.337$ volt.
7. Distinguish between lacquer and paint.

IV Write essay on any ONE

(1x10=10)

1. Describe the refining of petroleum indicating the principle involved. Name the fractions obtained and state one important use of each fraction.
2. Explain the classification of carbohydrates with two examples for each class.
 - a) Outline their nutritional sources.
 - b) Give structure of glucose.
