

# KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2011 Admission

1<sup>st</sup> Semester Special Re- Examination- June -2015

Cat. No: Base.1104

Title: Engineering Chemistry (2+1)

Marks: 80.00

Time: 3 hours

## I Fill in the blanks

(10 x 1=10)

- The formation of stable bubbles above the surface of water is called.....
- The greater the degree of cross linking in the polymer.....is its stability.
- Nylon 6, 6 is produced by heating adipic acid with.....
- The property of oil responsible for its adsorption on metal surface is known as.....
- Methyl or phenyl siloxane polymers are generally called.....
- The conductance of an electrolyte is the reciprocal of its.....

## II State true or false

- Conductance measurements are employed to determine the end points of various titrations.
- It is very easy to determine the potential of single electrode.
- The metal with positive reduction potential will displace hydrogen from an acid solution.
- The extent of corrosion depends upon the position of the metal in the galvanised series.

## IV Write short notes on *any ten*

(10×3=30)

- Scale and sludge formation
- Classification of fuels
- Coal gas
- Zeigler-Natta catalyst
- Beer-Lambert's law
- Reversible and irreversible cells
- Solid lubricants
- Thermosetting plastics
- Cetane value
- Concentration cells
- Prevention of corrosion
- Demineralisation

**V Write short essays on any six of the following**

**(6×5=30)**

- a) What are the factors which cause boiler corrosion? How can it be minimized?
- b) Distinguish between addition and condensation polymerisation?
- c) How are the following plastics made? i) LDPE ii) PVC iii) Bakelite
- d) What are the characteristics of a good iubicant?
- e) Calculate the standard emf of the cell.  $Zn/ZnSo_4//CuSo_4/Cu$ . Standard reduction potentials are  $E^0 Zn^{2+}/Zn = - 0.763$  volt and  $E^0 Cu^{2+}/Cu = + 0.337$  volt.
- f) What is a reference electrode? Mention its uses?
- g) Advantages and disadvantages of solid and liquid fuels?
- h) Cracking of petroleum?

**VI Write an essay on any one of the following**

**(1×10=10)**

- a) Describe the determination of flue gas analysis and discuss its significance?
- b) What is meant by cathode protection? Explain the two types of cathodic protection and their applications?

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