



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Agrl. Engg.) 2023 Admission
I Semester Final Examination - February 2024

Sacs.1103

Engineering Chemistry (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks (10x1=10)

1. hardness can be eliminated by boiling the hard water.
2. The process of removing common salt from the water is known as
3. The number is a measure of a fuel's ability to resist knocking in an internal combustion engine.
4. Galvanic cell corrosion occurs when two different metals are in contact in the presence of a electrolyte.
5. Sucrose is converted into glucose and fructose by the enzyme.....

State True or False

6. A non-linear molecule containing N atoms has (3N-6) fundamental vibrational modes.
7. Fire point is the lowest temperature at which the vapours of the oil ignite for a moment when a small flame is brought near it.
8. B group vitamins and Vitamin C are soluble in fat.
9. Flavoring reagents are substances added to food to enhance or modify the taste and aroma.
10. The amino acids which cannot be synthesized in the body and must be obtained through diet, are known as non-essential amino acids.

II Write short notes on ANY FIVE of the following (5x2=10)

1. Define reverse osmosis.
2. What is thermogravimetric analysis (TGA)? Write its significance.
3. What is biogas? Give its composition.
4. Describe briefly about differential aerial corrosion.
5. State Beer-Lambert's law.
6. Write about the denaturation of protein.
7. What are class I and class II preservatives? Give examples.

III Answer ANY FIVE of the following (5x4=20)

1. Write about the formation of sludge and scale in boilers. Write their disadvantages.
2. What is chromatography technique? Write shortly about the types of chromatography.
3. Describe the proximate analysis of coal.
4. Discuss about the preparation of colloids by electro dispersion and mechanical dispersion methods.
5. Distinguish between addition and condensation polymerization.
6. Describe about the viscosity property of a lubricant. How the viscosity index of lubricating oil is tested?
7. What are carbohydrates? Classify the carbohydrates on hydrolysis.

IV Write an essay on ANY ONE of the following (1x10=10)

1. Explain the demineralization of water by ion-exchange process.
2. Discuss in detail about the secondary, tertiary and quaternary structures of protein.
