

**LNCT UNIVERSITY, BHOPAL**

Enrolment No. ....

**CS-101UC****B.TECH(CS / AIML) I & II SEMESTER****EXAMINATION [JUNE-2024]****ENGINEERING CHEMISTRY & LIFE SCIENCES****Maximum Marks: 70****Time Allowed: 3Hours****Note:- Attempt all questions internal choice are given.****(SECTION -A)****1. Short Answer Type Questions (Attempt Any Five) [5x6=30]**

- Write various units for expression of hardness of water and show their interrelationship.
- Calculate lime and soda needed for softening of  $10^5$  litres of water containing  $\text{MgSO}_4 = 12.0 \text{ mg/l}$ ;  $\text{Mg}(\text{HCO}_3)_2 = 14.6 \text{ mg/l}$ ;  $\text{CaCl}_2 = 22.2 \text{ mg/l}$ ;  $\text{NaCl} = 5.85 \text{ mg/l}$ .
- Define steam emulsion number. How it affect the quality of lubricant?
- Explain octane and cetane number of gasoline.
- What is meant by DNA fingerprinting? Write the main structural difference between DNA & RNA.

- Describe the terms D- & L- configuration used for sugars. Explain it with examples.
- Discuss Mendel's laws of inheritance. Which one of these laws is consider as most important and why?

**(SECTION -B)****2 Long Answer Type Questions (Attempt Any Four). [04x10=40]**

- Discuss any two boiler troubles and what are their consequences? How these boiler troubles can be minimised?
- Describe the determination of flash and fire point by Pensky Martin's method. Draw neat and labeled diagram of apparatus.
- Discuss in brief the proximate analysis of coal and give its significance.
- Define lipids and classify them with suitable examples
- Describe the three main classes of genetic disorders and give an example of each.
- What is a Genetic Code? Explain various properties of genetic code.