Enroll. No. -_____

END SEMESTER EXAMINATION : November.-December, 2022
Engineering Chemistry

Time :3.00 Hrs

Maximum Marks :60

Note: Attempt questions from all sections as directed.

Scientific calculators permitted .

Section - A : Attempt any Four questions out of Five . Each question carries 06 marks. [24 Marks]

Q1. How the alkalinity of water is determined. Explain.

(6)

Q2. Explain the determination of %Carbon and %Hydrogen in the fuel sample.

(6)

Q3. Discuss Corrosion control methods .

(6)

Q4. Define Flash point and Fire point of lubricants. How are they determined.

(6)

Q5. Give reasons:

Most of the absorption bands in the UV visible spectra are very broad.

Amine absorb at a higher wavelength as compared to alcohols in UV region.

Aniline shows hypsochromic shift in acidic solution.

(6)

Section – B : Attempt any two questions out of three. Each question carries 10marks. [20 Marks]

Q6. Explain the significance of using buffer in EDTA titration for determination of hardness.

Draw the structure of indicator used in above titration.

100 ml of water sample required 26 ml of N/25 H_2SO_4 for neutralizaytion to phenolphthalein end point. After this methyl orange indicator was added to this, and further acid required was again 52 ml. Calculate the type and extent of alkalinity of water as $CaCO_3$ in ppm.

(10)

Q7. A gaseous fuel has following compostion by volume : H_2 = 20 %, CH_4=25 %, C_2H_6= 16%, C_2H_4=9.5%, C_4H_8=2.5 %, CO=8 %, N_2=12 %.Find the voulume and weight required for perfect combustion of $1m^3$ of this gas.

Discuss the various steps involved in Proximate analysis of a fuel

(10)

Q8.   **(a)**
State Lambert Beer's Law.

(5)

(b)   Give an account of factors influencing Corrosion.

(5)

Section - C : Compulsory question [16 Marks]

Q9.   **(a)**
Explain caustic embrittlement.

(2)

(b)   Define Passivity.

(2)

(c)   Finger Print region is very important in IR spectroscopy. Give reason.

(2)

(d)   Define Polymerization. Give synthesis of Polythene.

(10)