SRINIX COLLEGE OF ENGINEERING

1ST INTERNAL EXAMINATION-2021-22

Subject-**CHEMISTRY**   Semester-**1ST**   Branch-**SEC-A**

Full Mark-**60**   Time-**2.00Hrs**

ANSWER ALL QUESTIONS (PART-A)   [2X10=20]

1. Define Chromospheres.

2. Define Bathochromic shift.

3. Define Phase with example.

4. What happens when a molecule absorbs ultraviolet radiation?

5. What do you mean by triple point of a phase diagram?

6. Write the average composition of Crude petroleum.

7. What do you mean by calorific value of fuel?

8. Define Auxochrome with example.

9. What is Condensed Phase rule equation?

10. Write all phases of Sulphur system .

ANSWER ALL QUESTIONS (PART-B)   [5X4=20]

1. Describe the Water System with Phase diagram.

2. A sample of coal was found to have the following % composition C=75% ,H=5.2% ,O=12.1% ,N=3.2% .Calculate the H.C.V& L.C.V. of coal sample .

3. Calculate the reduced masses for the isotopic diatomic molecule $^1H^{35}Cl$ and $^2H^{35}Cl$. (^1H=1.0078amu ,^2H=2.0141) (^{35}Cl=34.968amu)

4. Calculate the energy per photon for radiation of wavelength 600nm.

5. What is the frequency of oscillation of CO having force constant $1600Nm^{-1}$.

1. Derive Schrodinger wave equation particle in a 3– dimensional box.

2. .The rotational constant B for $^1H^{35}Cl$ is 10.5909cm^{-1}. Determine the rotational constant for $^2H^{35}Cl$ & $^1H^{37}Cl$.

3. Define condensed phase rule. Describe Sulphur system with diagram details .

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