

U.G. 3rd Semester Examination - 2021

CHEMISTRY

[HONOURS]

Generic Elective Course (GE)

Course Code : CHEM-H-GE-T-01

Full Marks : 40

Time : 2½ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** from the following: $2 \times 5 = 10$
- What are the limitations of Bohr's model?
 - What is resonance?
 - What is electron affinity?
 - What is enantiomer?
 - Give the definition of acid and base according to Lux-Flood concept.
 - What is formal potential?
 - What is hyperconjugation?

2. Answer any **two** questions: $5 \times 2 = 10$
- Write down the limitations of Sommerfeld's model. What is the significance of magnetic quantum number? What is ionization potential?
 $2+2+1=5$
 - What is HSAB concept? Compare the acidity between sulfuric acid and sulfurous acid.
 $3+2=5$
 - Compare the acidity between chloro-acetic acid and acetic acid. What is inductive effect? Give an example of threo compound.
 $2+2+1=5$
3. Answer any **two** questions: $10 \times 2 = 20$
- What is Hund's rule? Compare electron affinity between chlorine and fluorine. Discuss electronegativity change along a group in periodic table. Write down the general characteristics of transition elements. What is Lewis acid?
 $2+2+2+2+2=10$
 - 'Formal potential is a function of complexation' - explain. What is redox titration? Give two examples of redox indicator. Discuss the stability among primary, secondary and tertiary carbocations.
 $4+2+2+2=10$

- c) Draw Newman conformations of n-butane.
What is centre of symmetry of a molecule?
Write a short note on S_N2 reaction. Discuss
ozonolysis reaction. Give the reaction to
prepare ethane by Wurtz reaction.

$$3+1+2+2+2=10$$
