Enrolment ID: _____

Navrachana University
School of Liberal Studies and Education, M.Sc. (Chemistry)
End-Semester Examination - November 2017
First Year, Semester I
Aromaticity & Asymmetric Synthesis, CH 113

Date: 22/11/2017
Time: 10:30 – 12:30 PM **Marks: 40**

Instructions:

- ***All Questions are compulsory.***
- ***Write each answer on a new page and clearly indicate question number.***
- ***This question paper contains THREE Pages.***

Q.1. Do as Directed: **[6×2 = 12 marks]**

i. Why cyclohexene with 2 π electrons is not aromatic?

ii. How you define a good protecting group?

iii. What do you mean by axial chirality?

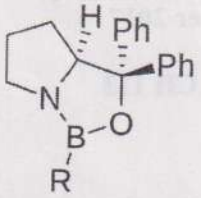
iv. Draw structure of one chiral reagent & one chiral catalyst.

v. What are clathrates?

vi. Write down Hammett equation & express different symbols used in it.

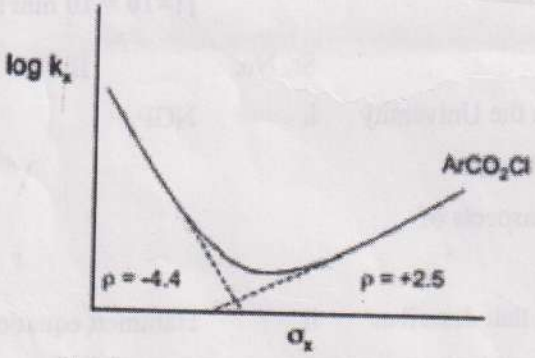
Q.2. Match the following: **[1×10 = 10 marks]**

Sr. No.	A	Sr. No.	B
1.	Harry Kroto, an organic chemist in the University of Sussex in the United Kingdom, became fascinated with various "peculiar" aspects of carbon chemistry	i.	NGP
2.	σ* is the polar substituent constant that describes the field and inductive effects of the substituent	ii.	Hammett equation
3.	The ion, which involves 3 carbons with 2 electrons spread over them	iii.	Helicenes
4.	ortho-condensed polycyclic aromatic compounds in which benzene rings or other aromatics are angularly annulated to give helically-shaped molecules	iv	Corey-Bakshi-Shibata Reaction
5.	Dicobaltoctacarbonyl complex	v	Triple Bond

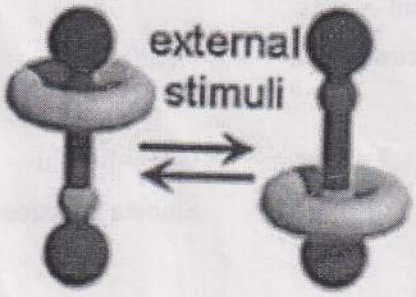
			Protection
6.	Azulene	vi	Inclusion compounds
7.		vii	Non classical ions
8.	In SN^2 reactions, retention of configuration of the reaction center can be obtained instead of the expected inversion of configuration.	viii	Non Benzenoid
9.	These compounds have van der Waals forces between the host and the guest without any bonding	ix	Fullerenes
10.	It describes a linear free-energy relationship relating reaction rates and equilibrium constants for many reactions involving benzoic acid derivatives	x	Taft Equation

Q.3. Explain, in brief, the images given below: **[3×3 = 9 marks]**

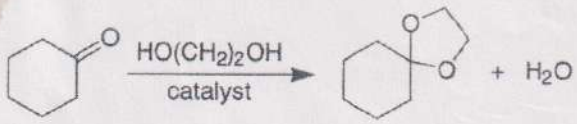
i.



ii.



iii.

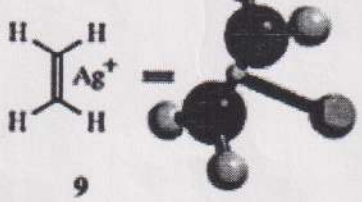


Q.4. Answer any *TWO* of the following questions in detail: **[4.5×2 = 9 marks]**

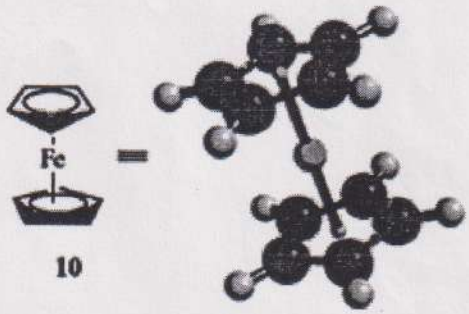
i. What do you mean by asymmetric synthesis? What is the difference between chiral auxiliary & chiral reagent and what are the essential requirements for chiral auxiliary?

ii. How you will differentiate between the given below class of compounds?

a)

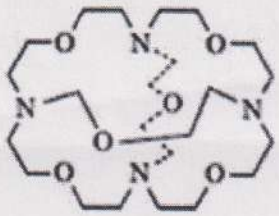


9



10

b)



iii. "*The emergence of Taft equation is a consequence of failure of the Hammett equation when the logarithms of the rates of hydrolysis of substituted aliphatic esters are plotted against the pK_a values of the corresponding acids.*" Explain this statement.

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