* R B - 1 3 2 5 - 2 6 / 1 0 0 0 *

RB-1325-26

Second Year D. Pharm. Examination

April / May – 2010

Pharmaceutical Chemistry - II

Time : **3** Hours] [Total Marks : **70**

RB-1325

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **S. Y. D. Pharm.**

Name of the Subject :

☛ **Pharmaceutical Chemistry - 2**

☛ Subject Code No. : **1 3 2 5** ☛ Section No. (1, 2,.....) : **1**

Seat No. :

Student's Signature

1 Attempt any **eleven** of the following : **11**

(a) What is the angle of NH_3? Explain it.

(b) Classify the followings group as

Activating group and para director, Deactivating meta director Deactivating ortho and para director.

$-NH_2$, $-NO_2$, COCl, $-OCH_3$, –Ar, –NHCOR, –F, –Br, $-SO_3H$, –CHO, –COOH

(c) Draw the structure of the followings.

Iso butyl bromide, Neo pentyl bromide

(d) Write down the relative length and strength of HCl, HBr and HF.

(e) Draw a compound that contain only Carbon and hydrogen atoms and that has 4 sp^3 hybridised carbon.

(f) HCl is weaker acid than HBr. Why does $ClCH_2COOH$ a stronger acid than $BrCH_2COOH$? Explain.

(g) Draw three constitutional isomers with molecular formula C_3H_8O.

(h) Enlist the conditions necessary for resonance.

(i) Explain why benzyl carbanion is more stable than ethyl carbanion.

(j) Which is the most polar: methane, ammonia or water? Explain.

(k) Define keto-enol tautomerism.

(l) Explain the rule of eight with example.

(m) Why BF_3 is acidic in nature?

2 Attempt any **four** : **12**

(a) Explain the Sandmayer's reaction?

(b) Write down the Gabriel synthesis for amine.

(c) What is Fries rearrangement?

(d) Predict the product when following reagents act on 1-hexene

(i) Br-CCl_3 in presence of peroxides

(ii) $KmNO_4$

(iii) H_2O, H^+

(e) Differentiate between E_1 and E_2 mechanism with suitable examples.

(f) Discuss Kolbe reaction with mechanism.

3 Attempt any **three** : **12**

(a) Convert these followings :

(i) Phenol $\rightarrow$ benzoic acid

(ii) Isobutene $\rightarrow$ acetone

(b) Discuss in detail Hydroboration-Oxidation reaction of alkenes.

(c) Show the product for the reaction of p-bromo aniline with

(i) Excess CH_3I

(ii) CH_3COCl

(d) What product would you expect from 2-methyl-2-hexene cleavage by?

(i) Ozonolysis

(ii) $NaIO_4/KmNO_4$

(e) Explain the types of overlapping by giving suitable examples and diagram.

RB-1326

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **S. Y. D. Pharm.**

Name of the Subject :

☛ **Pharmaceutical Chemistry - 2**

☛ Subject Code No. : **1 3 2 6** ☛ Section No. (1, 2,.....) : **2**

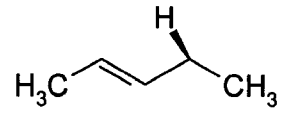
Seat No. :

Student's Signature

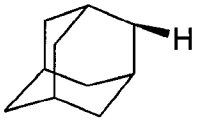
4 Attempt any **five** of the following : **10**

(a) Decide whether the following compounds are Chiral or Achiral.

I)



II)

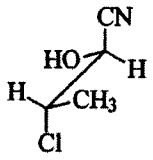


(b) Define the terms

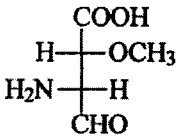
(i) Dextrorotatory (ii) Levorotatory

(c) Determine the absolute configuration of the following compounds.

a)

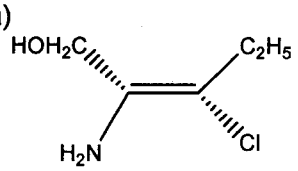


b)



(d) Assign E and Z configuration for the following compound.

a)



(e) Draw perspective formulas for the following :

(i) (R)-2-butanol

(ii) (2S,3R)-3-Chloro-2-pentanol

(f) Explain the following terms with suitable example

(i) Enantiotopic hydrogen

(ii) Homotopic hydrogen

(g) Draw all possible stereoisomers for 3-chloro-2-butanol.

5 Attempt any **four** : **10**

(a) Write the final products when acetonylacetone (2,5-hexadione) allow to react with

(i) P_2S_5,/Δ

(ii) $(NH_4)_2\ CO_3$, 100 °C

(b) Complete the reaction

(i) Pyrrole + $C_6H_5N \equiv N\ Cl^- \rightarrow$

(ii) Pyrrole + $CHCl_3$ + KOH

(c) Draw the structure for the following compounds

(i) 2-benzoyl-imidazole

(ii) 3-methoxy-6-fluoro-quinazoline

(d) Classify disaccharides. Write structures for maltose, sucrose and lactose.

(e) Draw and explain Watson and Crick model of DNA.

(f) Define and classify alkaloids.

6 Attempt any **five** : **15**

(a) Predict the product when 3,3-dimethyl-1-butene reacts with HCl.

(b) Write short note on Hofmann rearrangement

(c) What happens when phenol is allow to react with H_2SO_4 ?

(i) 15 – 20°C

(ii) 100°C

(d) Explain SN_1 reaction with its stereochemistry.

(e) Complete the reaction

(i) 2 pentanone with NH_3, H_2, Ni

(ii) Acetophenone with NH_3, $NaBH_3CN$

(f) Discuss with mechanism Reformatsky reaction to synthesize α, β unsaturated carbonyl compounds.

(g) Complete the reaction :