Roll No…….. **Total No. of Printed Pages: [02]**
Total No. of Questions: [09]

B. Sc. (Non-Medical) (Semester – 4th)
ORGANIC CHEMISTRY-III
Subject Code: BSNMS1-403
Paper ID: [22131420]

Time: 03 Hours **Maximum Marks: 60**

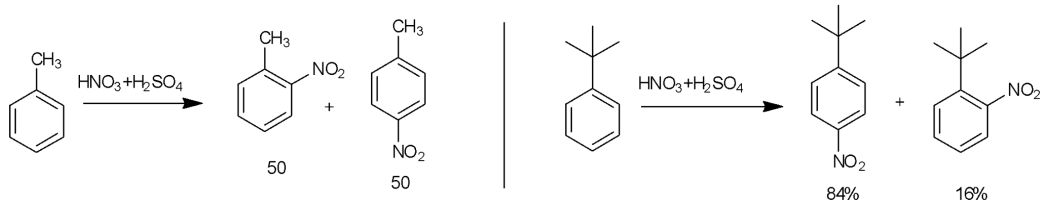
Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

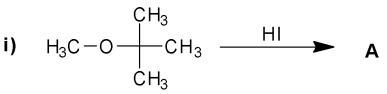
a) Explain why *m*-ClC_6H_4COOH is stronger acid than *p*-ClC_6H_4COOH.
b) What is Hell-Vohlard-Zelinsky reaction?
c) What is Ziesel's method?
d) What is Williamson's Synthesis? Give synthesis of anisole.
e) Nitration of Toluene gives a mixture of ortho- and para-nitro compounds in 50:50 ratios while nitration of tert-butylbenzene give mainly the para-nitro substituted tert-butylbenzene. Explain.

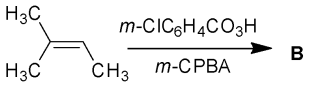


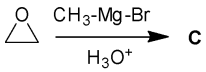
f) What are Grignard reagents? Give two examples.
g) Why organolithium compounds are more reactive than Grignard reagents?
h) Which is more basic Pyrrole or Pyridine? Justify your answer.
i) Arrange Pyrrole, Thiophene and Furan in decreasing order of reactivity?
j) How can Pyrrole and Thiophene derivatives be synthesized from 1,4-diketones?

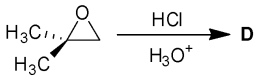
Section – B **(5 marks each)**

Q2. What is esterification? Give its mechanism. Also give the reactivity order of alcohols like MeOH, EtOH, iso-PrOH, tert-BuOH towards esterification?
Q3. What is Hofmann Bromamide reaction? Explain with mechanism.
Q4. Write a note on Reformatsky reaction.
Q5. By giving the resonating structures, locate the position in pyrrole for electrophilic substitution reactions.
Q6. Write the structure of the product formed during the following reactions:

i)  A

ii)  B

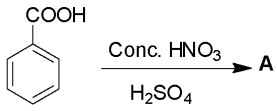
iii)  C

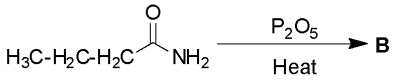
iv)  D

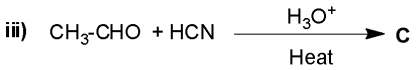
Section – C (10 marks each)

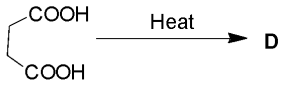
Q7. a) Write the mechanism of hydrolysis of ester under basic conditions. Why hydrolysis of ester is preferred under basic conditions over acidic conditions?

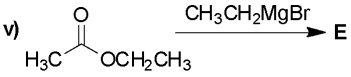
b) Write the structure of the product formed during the following reactions:

i)  A

ii)  B

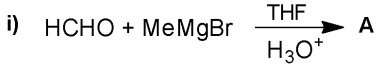
iii)  C

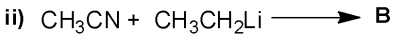
iv)  D

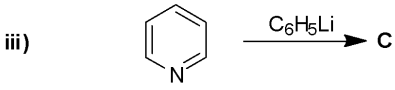
v)  E

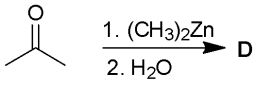
Q8. (a) What is Gabriel Phthalimide Synthesis? Explain with mechanism.

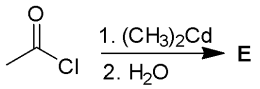
(b) Write the structure of the product(s) formed during the following reactions:

i)  A

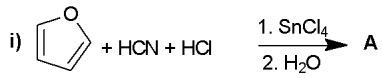
ii)  B

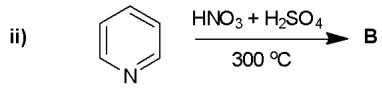
iii)  C

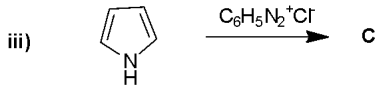
iv)  D

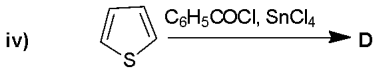
v)  E

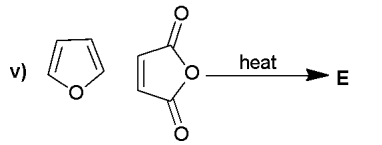
Q9. Write the structure of the product(s) formed during the following reactions:

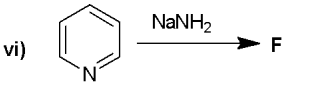
i)  A

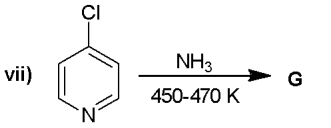
ii)  B

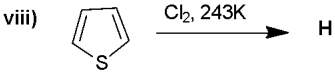
iii)  C

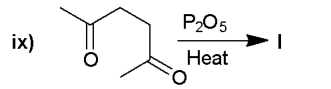
iv)  D

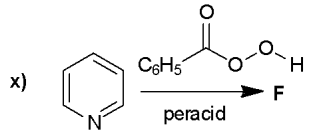
v)  E

vi)  F

vii)  G

viii)  H

ix)  I

x)  F

----------x----------