Roll No. .....

41203

B. Sc. (Pass Course) 4th Semester Examination – May, 2019

CHEMISTRY-III (ORGANIC CHEMISTRY)

Paper : CH-403

Time : Three Hours] *[Maximum Marks : 29*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Unit. Question number **1** is ***Compulsory*** and is of ***five*** marks. All other questions are of ***six*** marks.

Compulsory Question

1. (a) Draw a typical IR spectrum and specify functional group, finger print and aromatic regions.

(b) Draw the structure of ammonia and specify bond angle, bond distance and hybridization.

(c) Write down the examples of aromatic and aliphatic diazonium chlorides. Out of these two, which one is more stable ?

P. T. O.

(d) Write down the structure of vanillin.

(e) How will you determine whether the given compound is aldehyde or ketone ? $1 \times 5 = 5$

UNIT – I

2. (a) An alkyne with *MF* C_5H_8 show IR bands at 3300 and 2110 cm^{-1}. Assign the structure of alkyne.

(b) Give approximate positions of the characteristic IR bands in the following compounds : $3 \times 2 = 6$

(i) $CH_3CH_2CH_2OH$

(ii) CH_3COCH_3

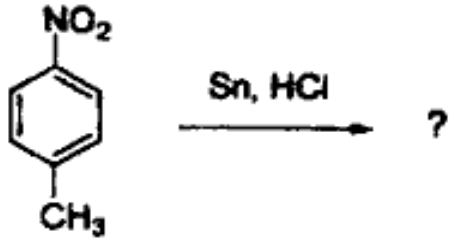
(iii) $CH_2 = CHCOCH_3$

3. (a) What important bands do you expect in IR spectrum of toluene ?

(b) Write down the principle of IR spectroscopy. Also mention the source of IR radiation. $3 \times 2 = 6$

UNIT – II

4. (a) Complete the following reaction sequence :

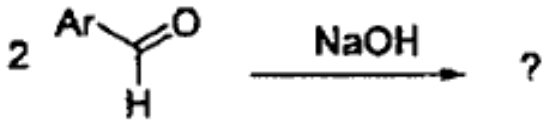


UNIT – IV

8. (a) Discuss the similar properties of aromatic and aliphatic aldehydes.

(b) Complete the following reaction with mechanism :

$3 \times 2 = 6$



9. (a) How will you convert cyclohexanone to cyclohexanol with aluminium isopropoxide in isopropyl alcohol ? Explain with mechanism.

(b) Write a short note on Wittig reaction. $3 \times 2 = 6$