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Total Pages : 4

239407

May 2019

M.Sc. (Chemistry) IVth Semester

ORGANIC CHEMISTRY SPECIAL III

(CH-413A)

Time : 3 Hours] [Max. Marks : 75

Instructions :

(i) It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.

(ii) Answer any four questions from Part-B in detail.

(iii) Different sub-parts of a question are to be attempted adjacent to each other.

PART–A

1. (a) What do you understand by retrosynthetic analysis? (1.5)

(b) Briefly explain wittig reaction. (1.5)

(c) Give the reaction of pyrazole with conc. HNO_3 and H_2SO_4. (1.5)

(d) Discuss reagents for protection of amino group. (1.5)

(e) Give the method of preparation of oxetane. (1.5)

(f) What do you know about Zeisel method? (1.5)

(g) Explain the term stereospecificity. (1.5)

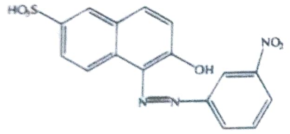
(h) Write down the structure of ephedrine. (1.5)

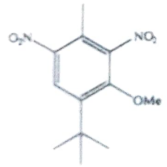
(i) What is special isoprene rule? (1.5)

(j) What are sesquiterpenoids and give examples. (1.5)

PART–B

2. (a) Write the reterosynthetic analysis of following compounds alongwith synthesis. (10)

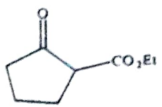
(i) 

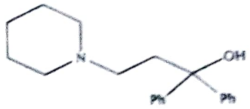
(ii) 

(b) What do you mean by reversal of polarity and explain with example. (5)

3. (a) Explain the significance of regioselectivity in Michael reaction. (5)

(b) Use reterosynthetic approach for following : (10)

(i) 

(ii) 

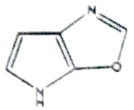
4. Write the disconnection approach in the synthesis of juvabione. (15)

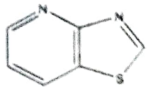
5. (a) Predict the product and propose suitable mechanism for the following : (10)

(i) $C_6H_5C \equiv CCOCH_3 + CH_3NHNH_2 \longrightarrow A - B$

(ii) $CH_3COCH_2Cl + NH_2CSCH_3 \xrightarrow[\text{reflux}]{C_6H_6}$

(b) Write the name of following heterocycles by Hantzsch Widman system : (5)

(i) 

(ii) 

6. (a) Write down the synthesis of nicotine. (5)

(b) How are the alkaloids classified on the basis of N-atom in the ring? (5)

(c) Sketch the synthesis of imidazole and aziridine alongwith mechanism. (5)

7. (a) Explain the structure elucidation of geraniol alongwith synthesis. (8)

(b) How will you convert cholesterol into progesterone? (7)
