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## GIET UNIVERSITY, GUNUPUR - 765022

M. Sc. (Third Semester) Regular Examinations, December - 2023

### 22CHPE302 - Organic Chemistry-III

(Chemistry)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right-hand margin indicate marks.)

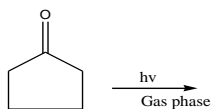
#### PART - A

(2 x 10 = 20 Marks)

Q.1. Answer *ALL* questions

CO #      Blooms  
Level

a. Find out the product of following reaction:

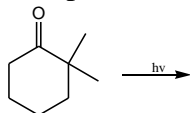


CO2      K3

b. Discuss sigmatropic shift of alkyl group.

CO1      K2

c. Complete the reaction.



CO2      K3

d. Define the following terms:

i. Energy cascade                      ii. Internal conversion

CO2      K1

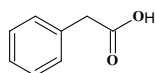
e. What is the IUPAC name of aspirin and mention its uses.

CO3      K2

f. Explain the structure of Penicillin G.

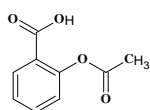
CO3      K2

g. Write the retrosynthesis of following molecule.



CO4      K3

h. Give the retrosynthesis of following molecule.



CO4      K3

i. Write the Retrosynthetic pathway of Benzocaine from toluene.

CO4      K3

j. Differentiate fluorescence and phosphorescence.

CO2      K2

#### PART - B

(50 Marks)

Answer ANY FIVE questions

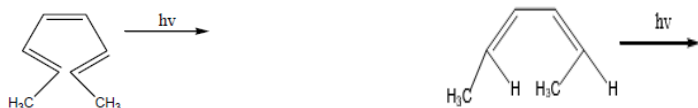
Marks      CO #      Blooms  
Level

2. a. Explain in details about Norrish type -I rearrangement.

6      CO2      K2

b. Write the products of the following electrocyclic reactions and write whether the reaction proceeds in a conrotatory or disrotatory fashion. Also give the stereochemistry of the products.

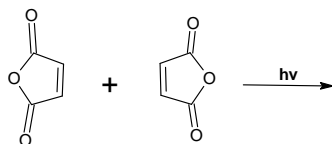
4      CO1      K3



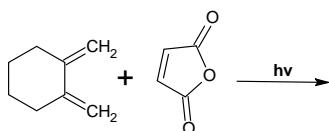
3.a. Explain Beer's Lambert Law. Draw the Energy level diagrams with electronic transitions.

6 CO2 K2

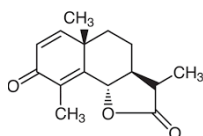
b. Write the cycloaddition products of following reaction:



4 CO1 K3



4. a. Explain the synthesis process of following drug.

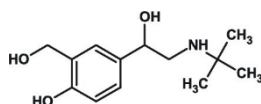


5 CO3 K3

b. Explain the structure, synthesis process and uses of aspirin.

5 CO3 K2

5.a. Write the synthesis and retrosynthesis of the following compound



6 CO4 K3

b. Write the one group C-X disconnection approach of synthesis.

4 CO4 K2

6. Explain Jablonski Diagram.

10 CO2 K2

7.a. Write details about chemistry of vision.

6 CO2 K2

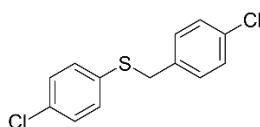
b. Write the products



4 CO2 K3

8. a. Write the synthesis and retrosynthesis of the

6



CO4 K3

b. Write notes on:

(i) Functional group interconversion

4 CO4 K2

(ii) Synthons

