Chemistry (P.G.)

[CBCS]

M.Sc. Fourth Semester End Examination-2024

(Regular & Supplementary Paper)

PAPER-402

[Advanced Organic Chemistry-III (Organic Spl.)]

Full Marks: 40 ***Time: 02 Hrs***

The figures in the right hand margin indicate marks.

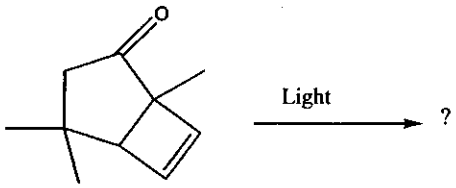
Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group-A

Answer **any four** of the following question 4x2=8

1. What is the difference between nucleosides and nucleotides?
2. What are the functions of vitamin A1 and C2?
3. Differentiate thermal reaction and photochemical reaction
4. Define the term "Quantum yield".
5. Give the product(s) of the following reaction with mechanism



6. What are antibiotics?

Group-B

Answer **any four** of the following question 4x8 = 32

7. a). Write all the steps for the synthesis of the following compound

b). What are different types of RNA?

c). Write down the product with mechanism of the following reaction

2+2+4=8

8. a) Synthesize 2,5-dimethyl-pyrrole from DEM

b). Write short notes on chichibabin reaction

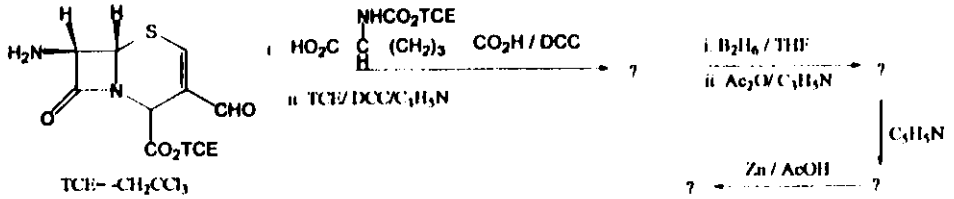
c). Complete the given reaction and give its mechanism

2.5+3+2.5=8

9. a). Classify antibiotics in terms of the type of functional group present and give example of each type.

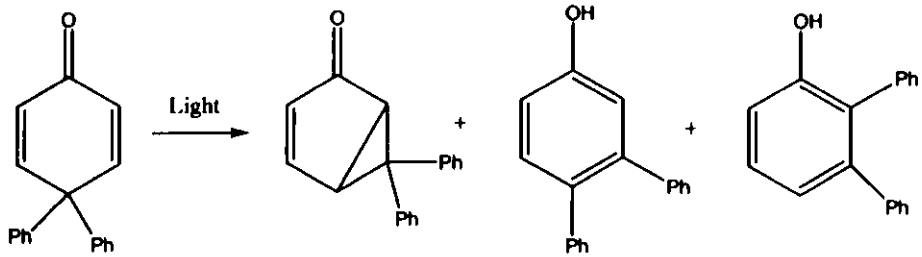
b). Show the Schematic diagram of biosynthesis of Streptomycin.

c). Complete the following:

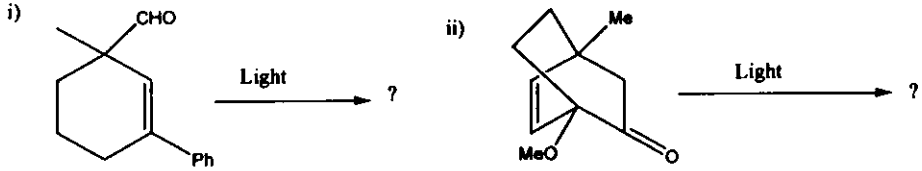


2+2+4=8

10. a). Mechanistically explain the following reaction.

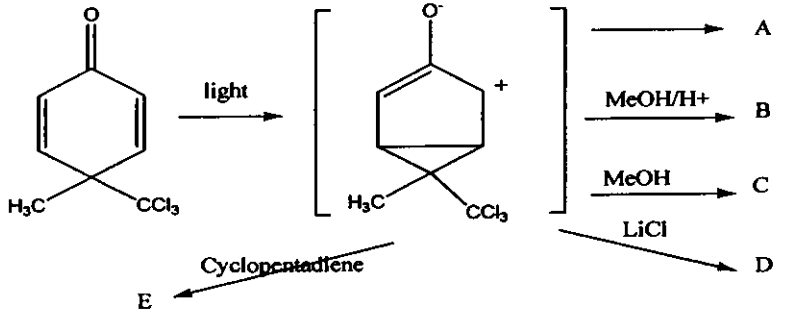


b). Give the product(s) of the following reactions with mechanism



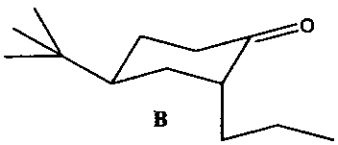
3+2.5x2=8

11. a). Write down the products of the following photochemical reaction.



b). On irradiation compound A undergoes Norrish type-II reaction but compound B undergoes Norrish type-I reaction. Rationalize the differences and depict the mechanism in each case.

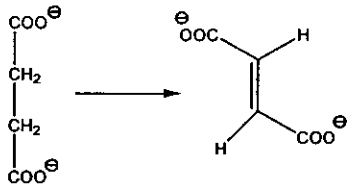
A

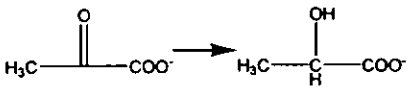


B

5+3=8

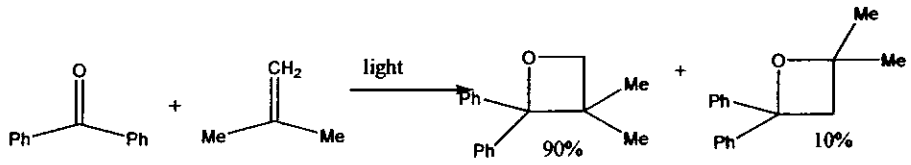
12. a). Carry out the following transformations using enzymes / Co-enzymes:

i) 

ii) 

b). Write all the steps for the synthesis of (+) Penicillin V from Phthalimide.

c). Rationalize the relative yields of the two isomeric products in the following reaction.



(1.5x2)+2+3=8