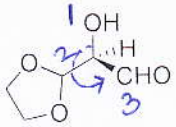
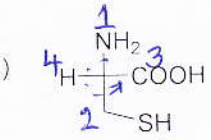
Class Test 1st year 19-20 Autumn TIME : 30 MINS

Name: Roll No: Section:

1. A) Determine the absolute configurations [R/S notation] for the following molecules. Indicate the priority sequence of groups according to CIP rules. [4]

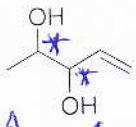
i) 

S-

ii) 

R as H (4th in priority) is occupying a horizontal position

B) Identify all the stereogenic(*) centres in the molecules given below. And predict the total no of stereoisomers each structural representation can have [2]

i) 

$2^4 = 4$ stereoisomers

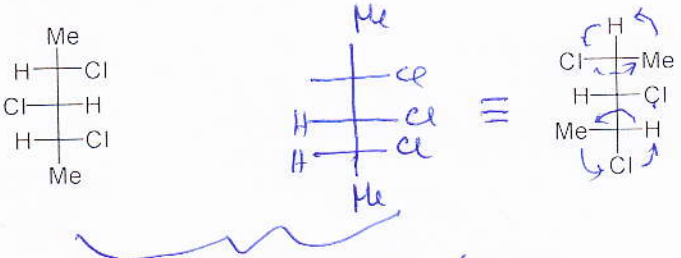
ii) 

1 dl pair (trans isomer)

1 meso (cis isomer)

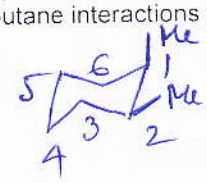
Total = 3 stereoisomers

C) Find the relation between the following molecules, identify them as Identical, Enantiomeric or Diastereomeric [1]



Diastereomers

2. a) Draw one chair form of *cis*-1,2-dimethyl cyclohexane. Calculate the number of gauche butane interactions present. [3]



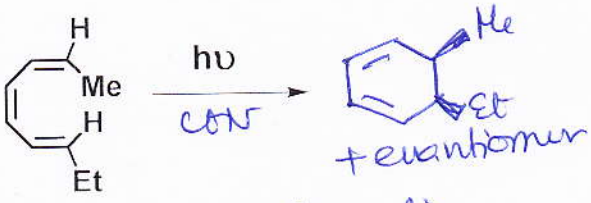
g.b. interactions already present in a chair form of cyclohexane = 6

3 additional g.b. interactions (Me–C1–C2–C3, Me–C1–C6–C5, Me–C1–C2–Me)

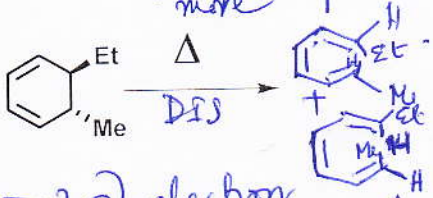
Total = 9 g.b. interactions

Marks will be given for catching 3 g.b. int.

3. Predict the major product(s) with stereochemistry. State also the mode of reaction DIS or CON [4]

a) 

6 π electron electrocyclic ring closing process under light goes via conrotatory mode.

b) 

minor because of steric repulsion more

major because of less steric-H interaction

6e (4π+2σ) electron electrocyclic ring closing process occurs via Dis rotatory mode under thermal condition.