

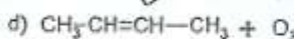
Name:


Reg. Number: ..

Section:

[I] Select the correct answer. (11 points)

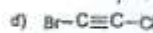
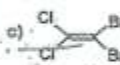
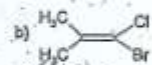
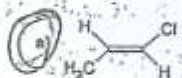
Which reaction takes place with regioselectivity?



Regioselective:  b

دالة كيميائية كبيرة

Which of the following shows cis/trans isomerism?

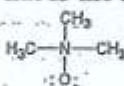


15/23/21

42

+21/2

What is the formal charges at O in the following structure?



a) +1

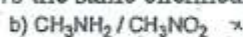
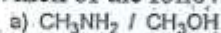
b) -1

c) 0

d) +2

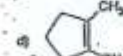
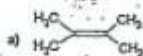
6 - (7)

Which of the following pairs shows the same chemical behaviour?



-1

Which of the following gives only one aldehyde upon ozonolysis?



Which formula corresponds to a cycloalkane?

a) C_7H_{12}

b) C_7H_{10}

c) C_7H_{14}

d) C_7H_{16}



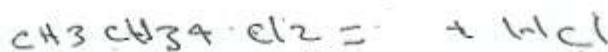
C_nH_{2n}

دورة

C_nH_{2n}



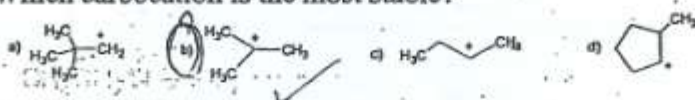
CBK



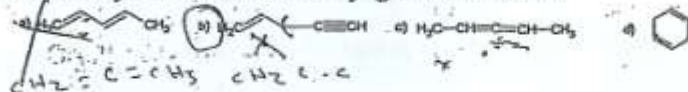
- Which by-product is formed in the free-radical halogenation of ethane?
 a) methane b) propane c) butane d) isobutane



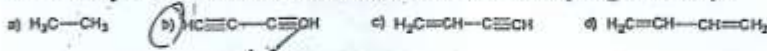
- Which carbocation is the most stable?



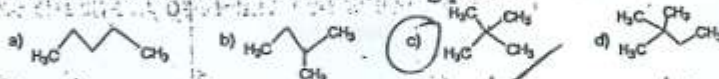
- Which hydrocarbon has conjugated π -bonds?



- Which hydrocarbon has shortest C-C σ -bond (single bond)?

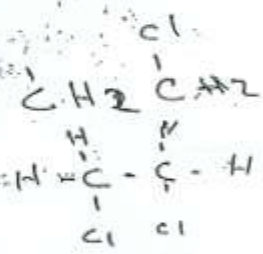


- Which alkane has the lowest boiling point?

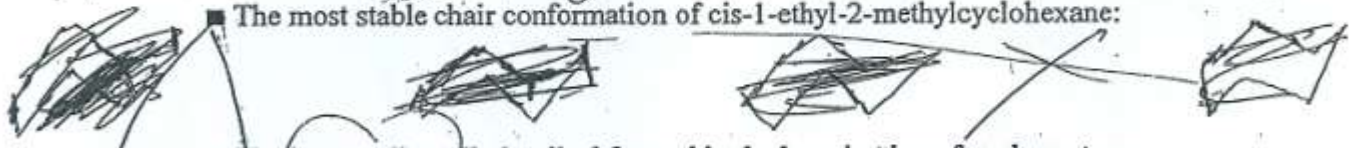


[III] Provide a correct answer (10 points)

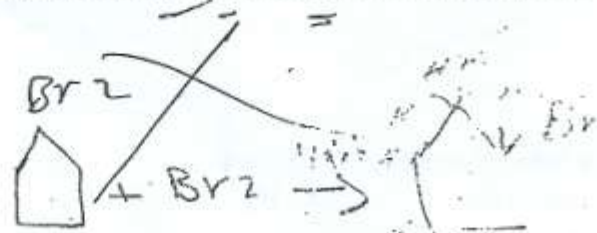
- Newman projection for the most stable conformation of 1,2-dichloroethane:



- The most stable chair conformation of cis-1-ethyl-2-methylcyclohexane:

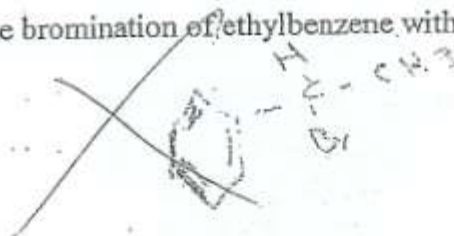


- The intermediate alkyl radical formed in the bromination of cyclopentane with bromine / uv light:

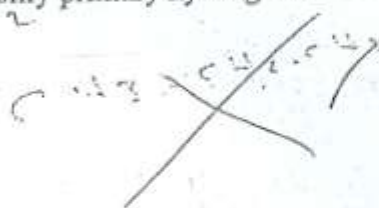
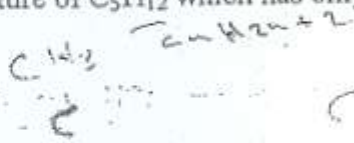


-2

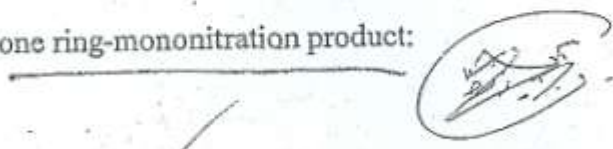
■ The organic intermediate formed in the bromination of ethylbenzene with $\text{Br}_2 / \text{FeBr}_3$:



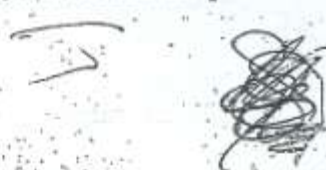
■ The structure of C_5H_{12} which has only primary hydrogens:



■ The dibromobenzene which gives only one ring-mononitration product:



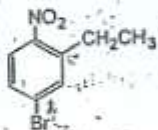
■ Give the structure of the hydrocarbon C_5H_{10} which gives only one monochlorination product when chlorinated under uv irradiation.



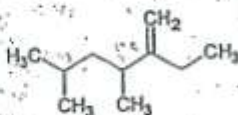
■ The structure of the most strained cycloalkane:



■ The correct IUPAC names for each of the following:

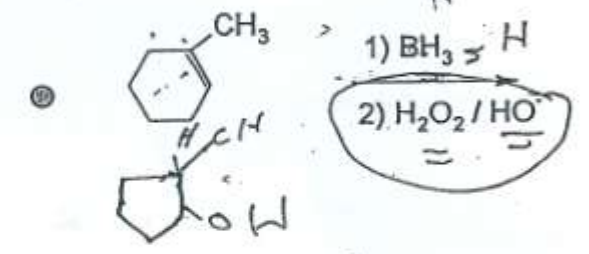
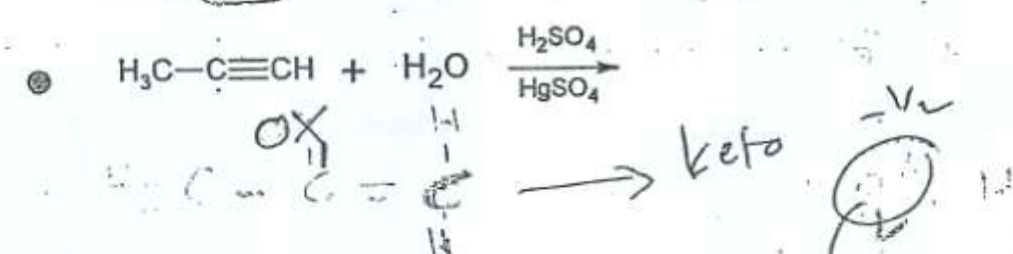
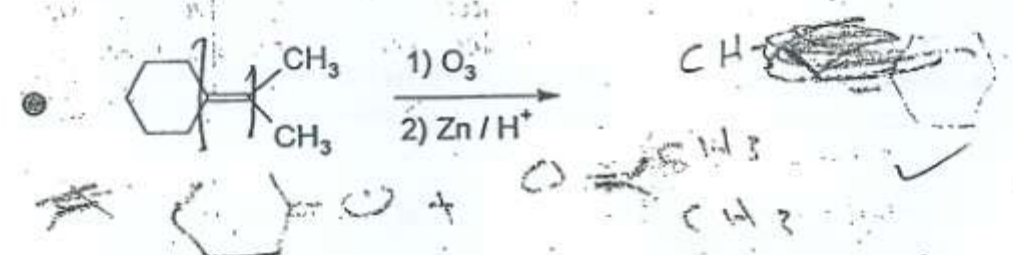
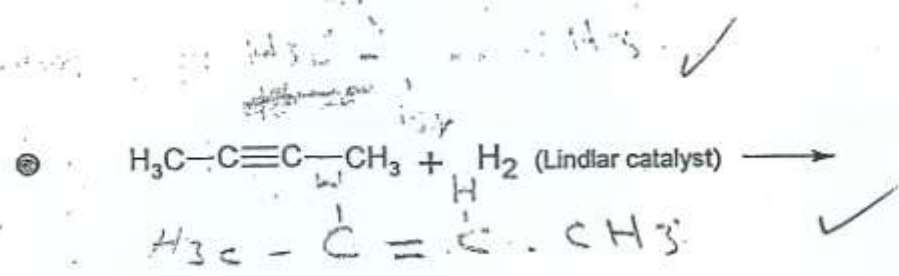
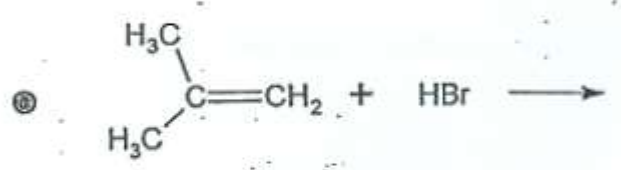
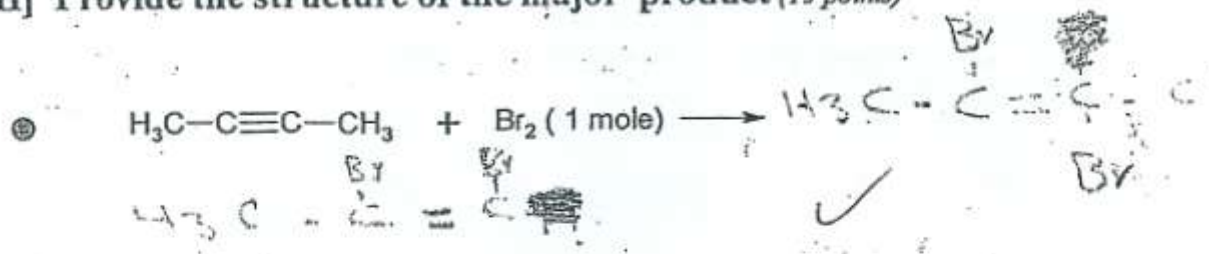


1-bromo-2-nitroethane



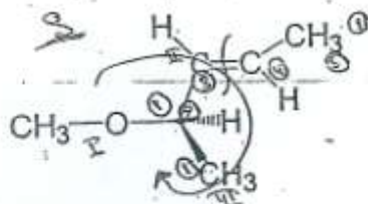
2,3-dimethylpentanal

[III] Provide the structure of the major product (15 points)



(-2)

7- The correct name for



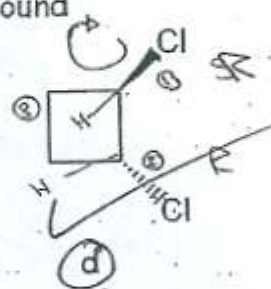
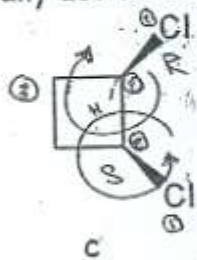
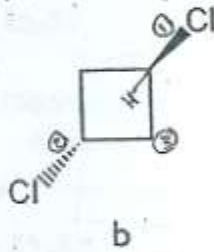
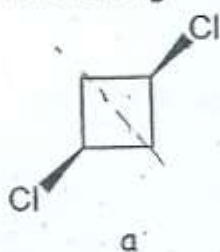
is:

E_2 2-pentene-4-methoxy

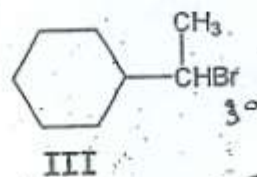
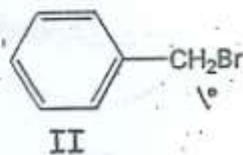
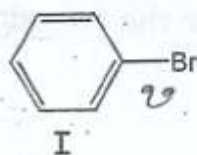
- a- (2Z, 4R)-4-methoxy-2-pentene
 c- (3E, 2S)-2-methoxy-3-pentene

- b- (2E, 4R)-4-methoxy-2-pentene
 d- (3E, 2R)-2-methoxy-3-pentene

8- Which of the following compounds is an optically active compound



9- Consider these halides



The order of reactivity of the above halides with $\text{NaI}/\text{Acetone}$ is:

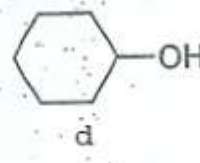
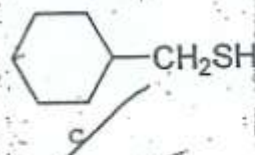
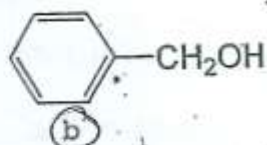
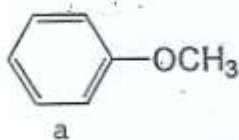
a- II, III, I

b- III, II, I

c- I, II, III

d- II, I, III

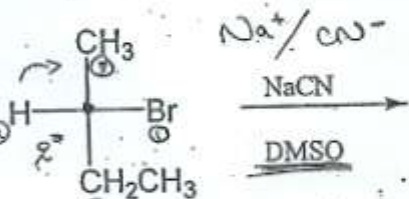
10- Which of the following will react with sodium hydroxide?



Q2 (6 pts) Answer each of the following

a-

Complete the reaction



$\text{S}_{\text{N}}2$

One step rxn

