

Student ID \_\_\_\_\_

Name \_\_\_\_\_

TA Name \_\_\_\_\_

page

points:

2 \_\_\_\_\_ (21)

3 \_\_\_\_\_ (20)

4 \_\_\_\_\_ (22)

5 \_\_\_\_\_ (18)

6 \_\_\_\_\_ (10)

7 \_\_\_\_\_ (9)

Total \_\_\_\_\_ (100)

## Periodic Table

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Ha	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

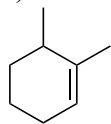
**Please sit with an empty seat between you and your neighbors.**

**Unless specifically asked, you do not have to draw mechanisms for reactions.**

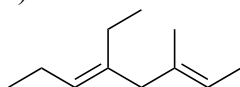
**Feel free to ask questions about the questions, but please don't ask questions about your answers, it distracts your neighbors.**

1. Provide the IUPAC name for each of the following structures (3 pts each).

a)



b)



2. Give a structure for each of the following compounds (3 pts each)

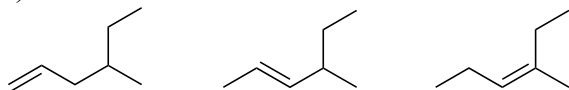
a) 4-butyl-5-methyl-1,4-hexadiene

b) 3,3-dimethyl-1-cyclohexene

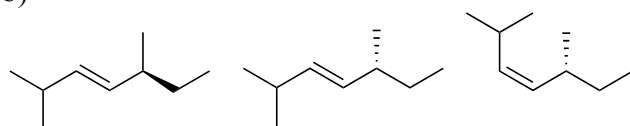
c) (Z)-3-ethyl-6-methyl-2-heptene

3. Rank order the relative energy of the following species from high to low (3 pts each).

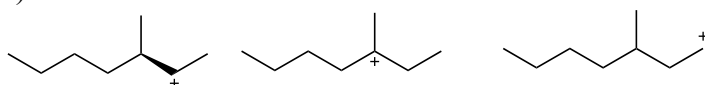
a)



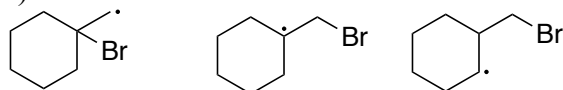
b)



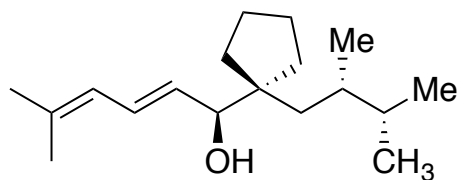
c)



d)

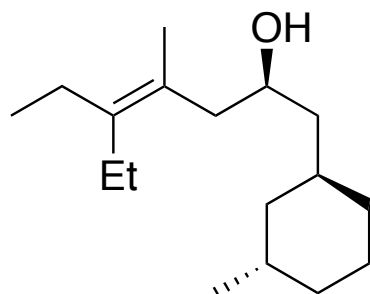


4. Draw all 7 stereoisomers of the following molecule (2 pts each; drawing redundant stereoisomers will lose points!!!).

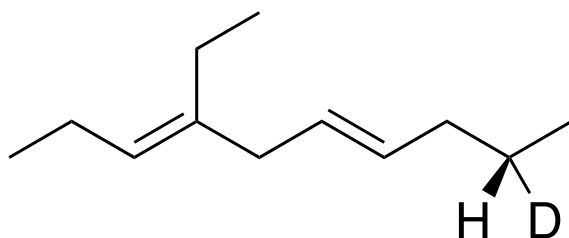


5. Circle the stereocenters in the following molecules, and assign the configuration (Z/E or R/S) for each stereocenter. (1 pts each; circling non-stereocenters will lose points!!!).

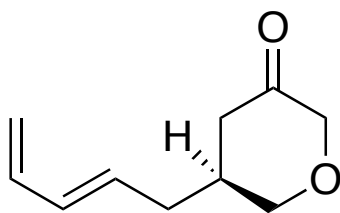
a)



b)



c)



6. Draw the major product(s) for each of the following reactions (3 pts each product).

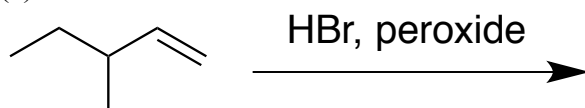
(a)



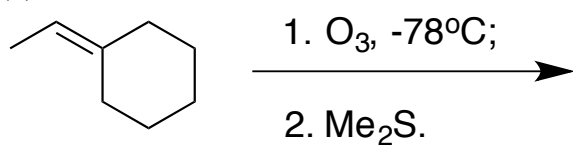
(b)



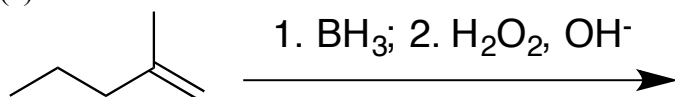
(c)



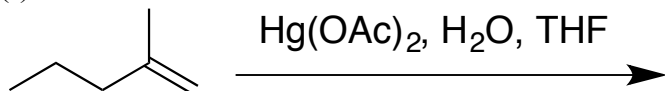
(d)



(e)

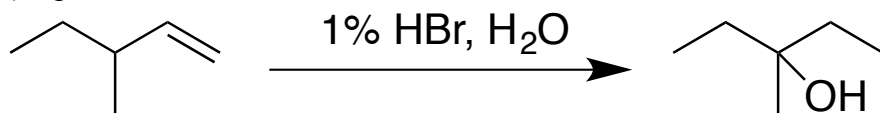


(f)

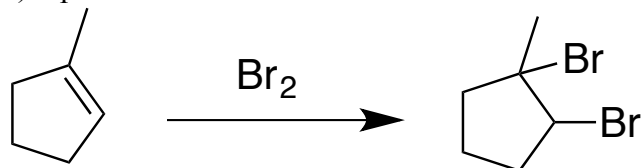


7. Use curved arrow or fishhook notation to draw the mechanism for each of the following reactions.

a) 6 pts



b) 4 pts



c) 9 pts

