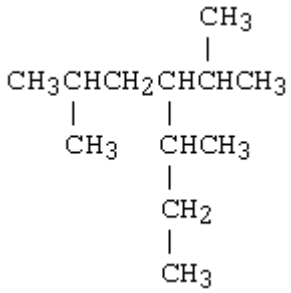
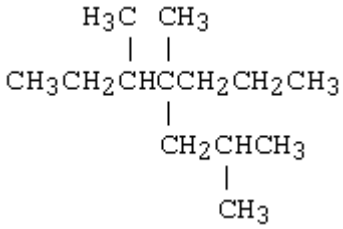
NS207-M1 (Key)

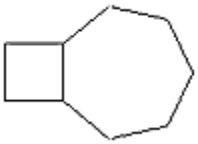
1.

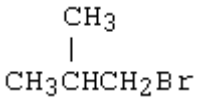
a) 3,4,6-Trimethyloctane
b) 3-Methyl-5-(1-methylethyl)octane
c) 5-Bromo-3-chloro-2,3-dimethylhexane
d) 3-Methyl-4-(1-methylethyl)heptane
e) Bicyclo[3.2.2]nonane
f) 4-Isopropyl-3-methylnonane
g) 2-Methylbicyclo[4.3.0]nonane
h) trans-1,2-Dibromocyclohexane
i) 3,5-Dimethyl-1-heptanol

2.

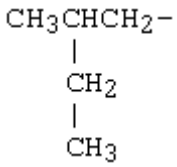
a) 

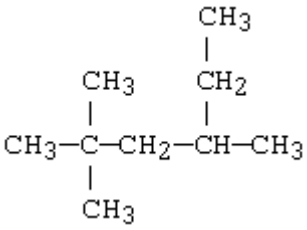
b) 

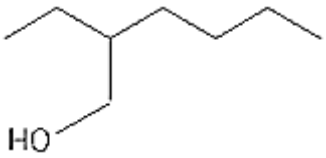
c) 

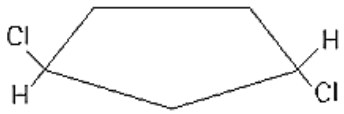
d) 

e) 

f) 

g) 

h) 

i) 

3. III>I=IV=V>II

4. II is the most stable. Because both of the methyl groups are equatorial and far from each other as much as possible.

5. a) I b) IV

6. a

7. III and IV

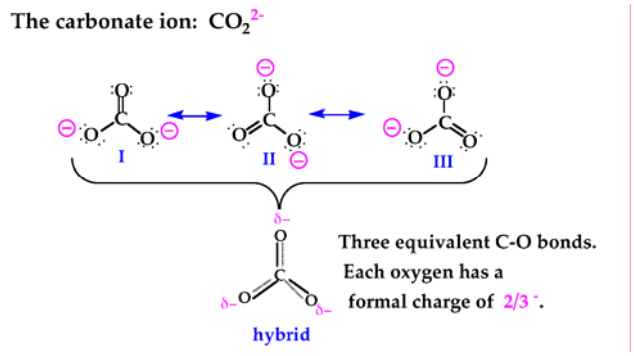
8.

a) linear, sp
b) trigonal planar, sp^2
c) tetrahedral, sp^3
d) trigonal pyramidal, ~sp^3
e) angular, ~sp^3

9. III<II<I=IV

10. $CH_3CH_2OCH_2CH_3$ and $CH_3CH_2CH_2CH_2OH$

11.
III>IV>I>II
12. b
13. e
14. a) H_2SO_4 b)H_3O^+ c) $CH_3NH_3^+$ d) NH_3 e) CH_3CH_3
a>b>c>d>e
15.



16.
The ground state electron configuration of B is