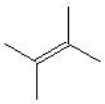
Complete the following reactions. Circle the most favored products.

1.  + H_2O →

2. + Cl_2 →

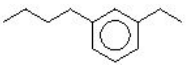
3. + O_2 →

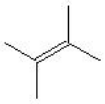
4. + H_2O →

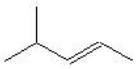
5. $\xrightarrow[\Delta]{500\ K}$

6. + H_2O →

7. + $KMnO_4 + H_2O$ →

8.  $\xrightarrow{[o]}$

9.  + Cl_2 →

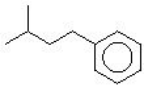
10.  + H_2 (g) →

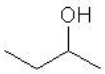
11. $\xrightarrow[\Delta]{500\ K}$

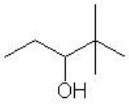
12. + HCl →

13. + O_2 →

14. + Cl_2 →

15.  $\xrightarrow{[o]}$

16.  $\xrightarrow[\Delta]{500\ K}$

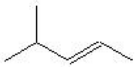
17.  $\xrightarrow[\Delta]{500\ K}$

18. + O_2 →

19. + HCl →

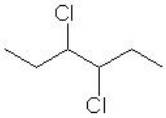
20. $\xrightarrow[\Delta]{500\ K}$

21. + O_2 →

22.  + $KMnO_4 + H_2O$ →

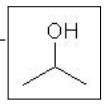
23. + H_2 (g) →

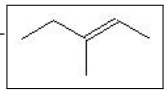
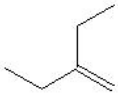
Question 1:

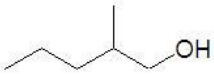
Question 2: 

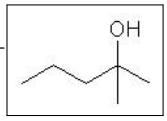
Question 3: ___ CO_2 (g) + ___ H_2O (g) + Heat Balance: (2,13,8,10)

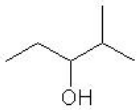
Question 4: H_2 (g) +

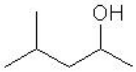
+ 

Question 5:
+ 
+ 
+ H_2 (g)

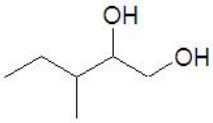
Question 6: H_2 (g) + 

+ 

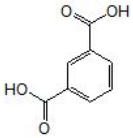
+ 

+ 

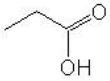
+

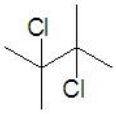
Question 7: 

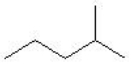
+ MnO_2 + KOH

Question 8: 

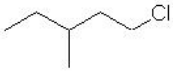
+

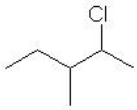
+ 

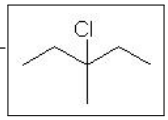
Question 9: 

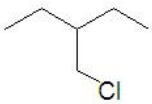
Question 10: 

Question 11:
+ HCl

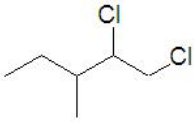
Question 12: H_2 (g) + 

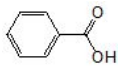
+ 

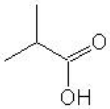
+ 

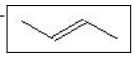
+ 

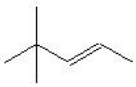
Question 13: ___ CO_2 (g) + ___ H_2O (g) + Heat Balance: (1,6,4,4)

Question 14: 

Question 15: 

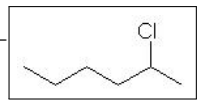
+ 

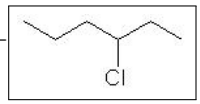
Question 16: +  + H_2O

Question 17:  + H_2O

Question 18: ___ CO_2 (g) + ___ H_2O (g) + Heat Balance: (1,7,5,4)

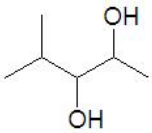
Question 19: H_2 (g) +

+ 

+ 

Question 20: + H_2O

Question 21: ___ CO_2 (g) + ___ H_2O (g) + Heat Balance: (2,19,12,14)

Question 22: 

+ MnO_2 + KOH

Question 23: