

G12 Chemistry: Class 3 Homework

For the questions below, give full structural diagrams and names for all reactants and products. Also indicate any catalysts/reaction conditions for the reaction. Also indicate the TYPE OF REACTION.

1. The formation of 2,2-pentanediol **[4 marks]**
2. The reaction between 3-hexanol and potassium dichromate (catalyst) **[4 marks]**
3. The addition of H_2 with butanal **[4 marks]**
4. The formation of dimethylamine from ammonia **[4 marks]**
5. The reaction between trans-2-hexene with hydrogen bromide **[4 marks]**

6. The reaction if ethyl propanoate was heated in the presence of a base and heat
[4 marks]

7. The hydrolysis of N-methylpropanamide **[4 marks]**

8. The reaction between 2 moles of water with 1-pentyne **[4 marks]**

9. The reaction between cyclohexene and water **[4 marks]**

10. The oxidation of 2-butanol **[4 marks]**

11. The reaction of water and 2-methylpentene **[4 marks]**

12. Addition reaction of an alkene to produce 2-chlorobutane **[4 marks]**

13. The reaction of benzene with 2-chlorobutane, in the presence of catalyst (AlCl_3) **[4 marks]**

14. The reaction of 2-bromopropane with a hydroxide ion **[4 marks]**

15. The reaction of propene to form an alcohol **[4 marks]**

16. The formation of 2-butanol **[4 marks]**

17. The formation of an ether from 1-propanol **[4 marks]**

18. Oxidation of an alcohol to form butanone **[4 marks]**

19. Oxidation of an aldehyde to form butanoic acid **[4 marks]**

20. The reaction between propanol and benzoic acid **[4 marks]**

Challenge Problems:

21. Draw (2E)-N-isopropyl-N-methylbut-2-enamide **[1 mark]**

22. Draw 2-amino-3-hydroxy-5-oxo-7-phenylhept-2-en-6-ynoic acid **[1 mark]**