

## Organic Chemistry Assignment 4

1. Write balanced molecular or structural equations for the following reactions:
- a) combustion of ethene /2
  - b) addition of fluorine to butene /2
  - c) elimination of dibromo propane /2
  - d) polymerisation of propene /2
2. Compare (without explanation) for hexane and hexanol:
- o boiling point /1
  - o melting point /1
  - o solubility in water /1
  - o solubility in octane /1
3. Draw structural formulae for the following:
- a) propene /1
  - b) dichloro ethyne /2
  - c) 2-methyl butan-2-ol /3
  - d) 3-chloro propanal /3
  - e) 2-ethyl butanoic acid /3
  - f) 3-pentanone /1
  - g) ethanamine /1
  - h) 1-propyl 4-iodo benzene /3
4. Describe and explain how bromine water can be used to distinguish between hexane and hexene. /3
5. Describe the test that would be used to distinguish between pentanone and pentanal. /2
6. Consider pentan-1-ol, pentan-2-ol and 2-methyl pentan-2-ol.
- a) State which is a primary, secondary and tertiary alcohol.
  - b) For each, state an observation that could be made after adding a small amount of acidified dichromate and warming the reaction vessel. If a reaction occurred, state the organic product. /5
- 7.
- a) Draw the structural formula for the compound that would be produced by reacting propanoic acid and ethanol.
  - b) State the other species that is produced in the reaction.
  - c) Describe why there is not 100% conversion in this reaction. /5

TOTAL /44