1. The functional group of an alcohol is:

   ☐ the C–X bond

   ☐ the –COOH group

   ☐ the –OH (hydroxyl) group

   ☐ the C=C double bond

2. A primary alcohol can be oxidised to:

   ☐ a ketone, then a carboxylic acid

   ☐ an alkene, then an alkane

   ☐ an aldehyde, then a carboxylic acid

   ☐ nothing, because it resists oxidation

3. Which reaction makes an alcohol?

   ☐ dehydration of an alcohol

   ☐ combustion of an alkane

   ☐ a halogenoalkane warmed with aqueous NaOH

   ☐ free-radical substitution

4. With acidified dichromate, a tertiary alcohol:

   ☐ turns green

   ☐ stays orange

   ☐ turns purple

   ☐ turns colourless

5. An alcohol reacting with sodium metal produces:

   ☐ oxygen gas

   ☐ a carboxylic acid

   ☐ hydrogen gas

   ☐ an alkene

6. To stop the oxidation of a primary alcohol at the aldehyde you distil the product off as it forms; refluxing instead gives the carboxylic acid.

   ☐ True ☐ False

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8. Ethanol gives a positive iodoform test.

   ☐ True ☐ False

9. A tertiary alcohol resists oxidation by dichromate because the carbon bonded to –OH has no hydrogen atom to lose.

   ☐ True ☐ False

10. To stop oxidation of a primary alcohol at the aldehyde, you use:

    ☐ distillation

    ☐ reflux

    ☐ no heating

    ☐ a tertiary alcohol

1. **the –OH (hydroxyl) group**

   Alcohols are defined by the hydroxyl (–OH) group.

2. **an aldehyde, then a carboxylic acid**

   Primary → aldehyde (by distillation) → carboxylic acid (by reflux); secondary → ketone; tertiary → not oxidised.

3. **a halogenoalkane warmed with aqueous NaOH**

   NaOH(aq) substitutes the halogen for –OH; adding steam to an alkene or reducing a carbonyl also work.

4. **stays orange**

   Tertiary alcohols are not oxidised, so the dichromate stays orange; primary/secondary turn it green.

5. **hydrogen gas**

   Like water, alcohols react with sodium to give hydrogen – but more slowly.

6. **True**

   Distilling removes the volatile aldehyde before it can be oxidised again; reflux keeps it in the mixture for full oxidation.

7. **hydroxyl**

   Written –OH.

8. **True**

   It contains the $CH_3CH(OH)$– group.

9. **True**

   Oxidation removes the H from the –OH and an H from the C–OH carbon; a tertiary C–OH carbon carries three carbon groups and no H.

10. **distillation**

    Distillation removes the aldehyde before it oxidises further; reflux instead gives the carboxylic acid.

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