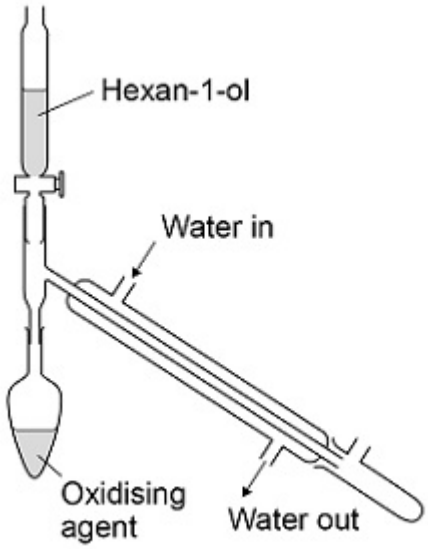
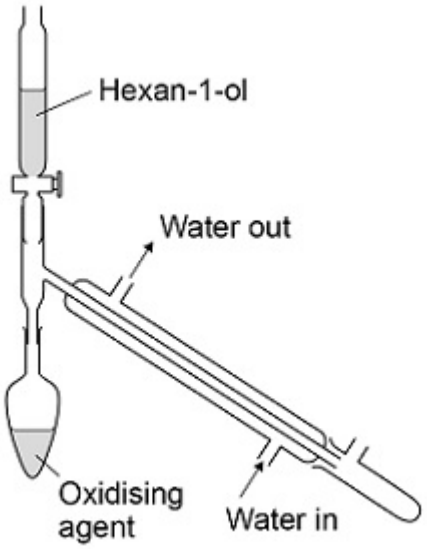
Q1.

Which diagram shows the correct apparatus for the conversion of hexan-1-ol to hexanal?

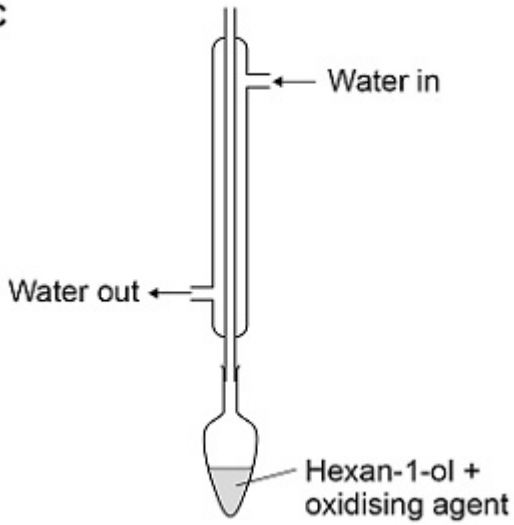
A



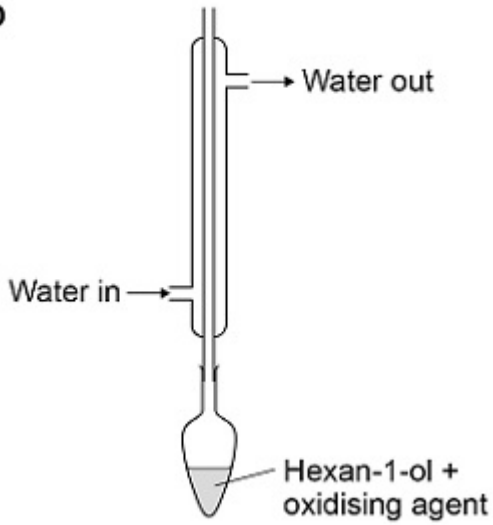
B



C



D



A ⬭

B ⬭

C ⬭

D ⬭

(Total 1 marks)

Q2.

Which statement about the industrial production of ethanol from ethene at 300 °C is correct?

$$C_2H_4(g) + H_2O(g) \rightleftharpoons C_2H_5OH(g) \qquad \Delta H = -46 \text{ kJ mol}^{-1}$$

A The use of an acid catalyst increases the yield of ethanol. ○

B The reaction is slower than fermentation. ○

C An increase in temperature, at constant pressure, increases the value of K_p. ○

D An increase in pressure, at constant temperature, increases the equilibrium yield of ethanol. ○

(Total 1 mark)

Q3.

The alcohol $CH_3CH_2CH_2OH$ can be oxidised.

Which compound **cannot** be produced by oxidation of this alcohol?

A CO_2 ○

B CH_3COCH_3 ○

C CH_3CH_2CHO ○

D CH_3CH_2COOH ○

(Total 1 mark)

Q4.

Which is a correct equation for the oxidation of 1-phenylethanol?
[O] represents oxygen from an oxidising agent.

A $C_6H_5CH_2CH_2OH + 2\,[O] \rightarrow C_6H_5CH_2COOH + H_2O$ ○

B $C_6H_5CH_2CH_2OH + [O] \rightarrow C_6H_5CH_2CHO + H_2O$ ○

C $C_6H_5CH(OH)CH_3 + [O] \rightarrow C_6H_5CH_2CHO + H_2O$ ○

D $C_6H_5CH(OH)CH_3 + [O] \rightarrow C_6H_5COCH_3 + H_2O$ ○

(Total 1 mark)

Q5.

Which alcohol when dehydrated forms a mixture of alkenes?

A propan-1-ol ○

B propan-2-ol ○

C pentan-1-ol ○

D pentan-2-ol ○

(Total 1 mark)

Q6.

Which compound produces $(CH_3)_2CHCOCH_3$ when oxidised?

A 2-methylpropan-1-ol ○

B 2,2-dimethylpropanol ○

C 2-methylbutan-2-ol ○

D 3-methylbutan-2-ol ○

(Total 1 mark)

Q7.

Which statement is **not** correct for both primary and secondary alcohols?

A They are easily oxidised to carboxylic acids by acidified $K_2Cr_2O_7$ solution. ○

B They can be formed from bromoalkanes by hydrolysis. ○

C They form esters with carboxylic acids. ○

D They show hydrogen bonding in the liquid state. ○

(Total 1 mark)

Q8.

Which pair of reagents does **not** produce ethanol?

A CH_3CH_2Br and NaOH(aq) ⬭

B CH_3COOCH_3 and NaOH(aq) ⬭

C $HCOOCH_2CH_3$ and NaOH(aq) ⬭

D CH_3CHO and $NaBH_4$(aq) ⬭

(Total 1 mark)

Q9.

Which compound can be dehydrated to form an alkene?

A CH_3CHO ⬭

B CH_3COOH ⬭

C CH_3CH_2OH ⬭

D CH_3COOCH_3 ⬭

(Total 1 mark)