

Question 27**(11 marks)**

Alcohols exhibit a variety of different chemical properties. For example, some alcohols react with acidified permanganate ions while others do not.

- (a) The alcohols in the following table were each heated with excess acidified potassium permanganate solution. Name all organic products formed **during** this process. If there is no reaction, indicate this by writing 'no reaction'. (4 marks)

Name of alcohol	Name(s) of organic compound(s) formed
2-methylpentan-2-ol	
pentan-1-ol	
pentan-2-ol	

- (b) Write a balanced overall ionic equation showing the formation of **one** of the organic compounds named in part (a). Only the alcohols listed in the table and acidified potassium permanganate solution can be used. Show your working. (4 marks)

- (c) The same type of reaction occurs if alcohols are mixed with acidified potassium dichromate solution.

(i) Name this type of reaction. (1 mark)

(ii) State how the reaction observations are different when limited acidified potassium dichromate solution is used instead of limited acidified potassium permanganate solution. (2 marks)
