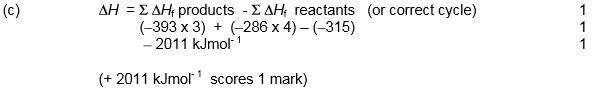
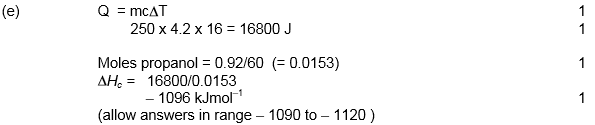
AS-LEVEL PAPER 2 PP21 MS

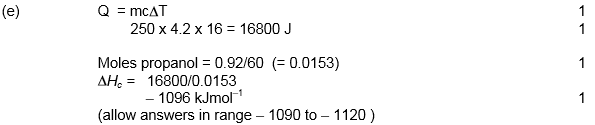
**1.**



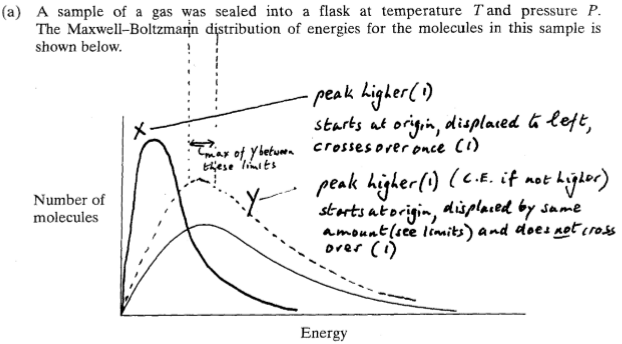


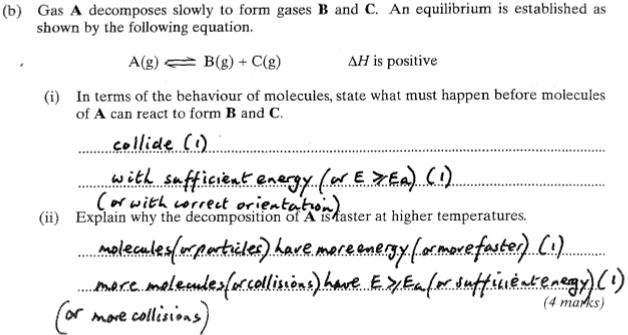


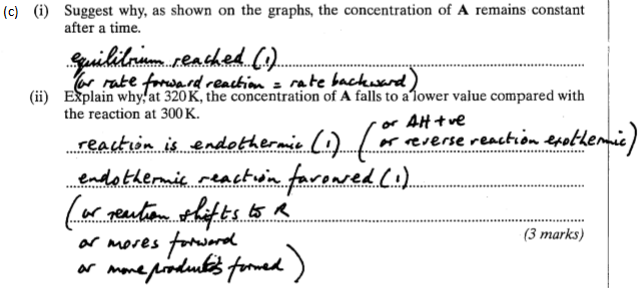
 

 **[13]**

**2.**

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**[11]**

**3.** (a)     (i)     C8H18 + 8 O2 → 8CO + 9H2O

*Accept multiples*

**1**

(ii)     Not enough oxygen or air (available for complete combustion) /lack of oxygen or air / too much octane

*Ignore poor ventilation, low temp, poor mixing, incomplete combustion*

**1**

(b)     (i)     2CO + 2NO → 2CO2 + N2

*Allow multiples*

**1**

(ii)     Pt / Pd / Rh / Ir or names

*Apply list principle*

**1**

Big(ger) surface area / increased reaction rate / removes more of the gases /ensures complete reaction

*Allow (ceramic) withstands high temperatures*

**1**

(c)     (i)     Acid rain

*Allow consequence of acid rain*

*Ignore greenhouse gas / global warming / ozone*

**1**

(ii)     CaO/ lime / CaCO3 /limestone

*Allow chemical names*

**1**

Neutralises the gas or words to that effect/it is basic/ SO2 is acidic

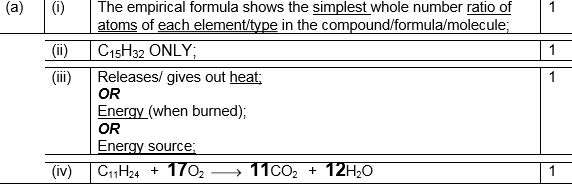
*Allow ‘reacts with it’ or ‘it is alkaline’*

*Ignore ‘absorb’*

**1**

**[8]**

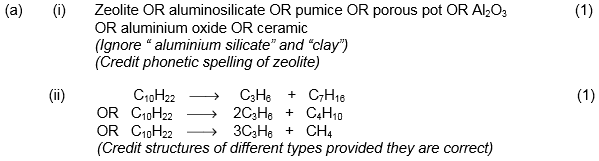
**4.**

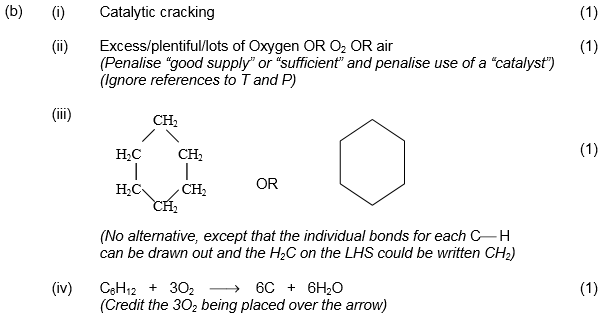
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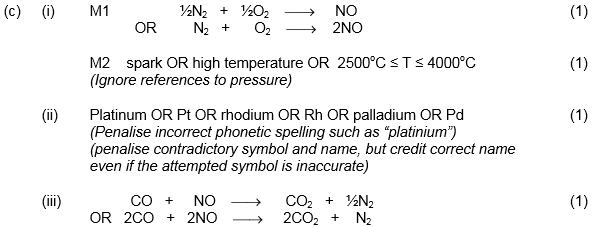
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**[5]**

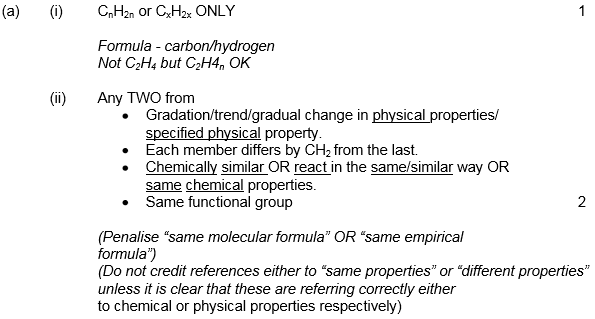
**5.**

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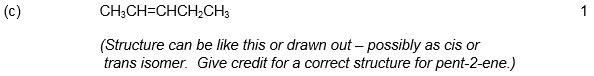
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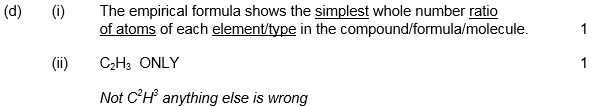
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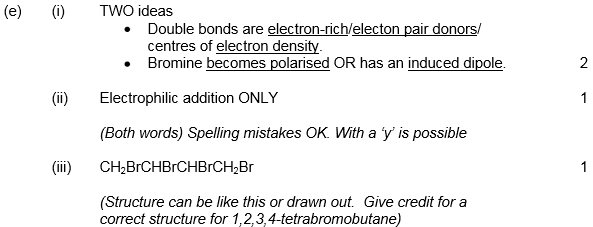
**6.**

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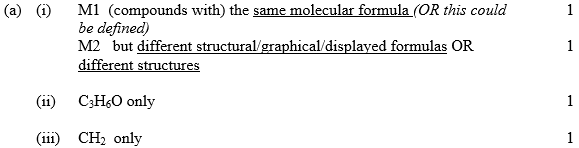


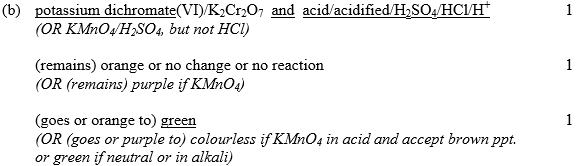


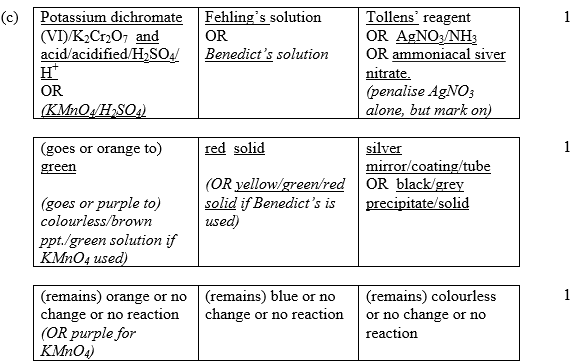


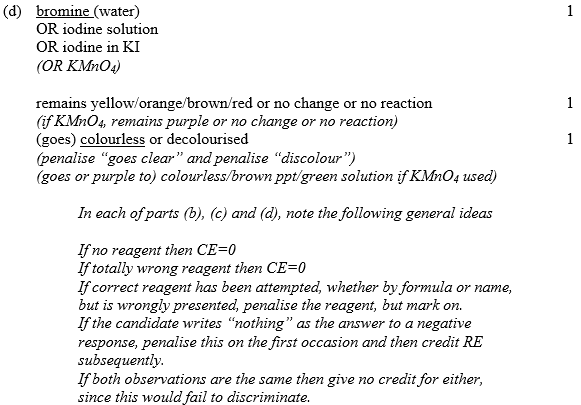
 **[11]**

**7.**

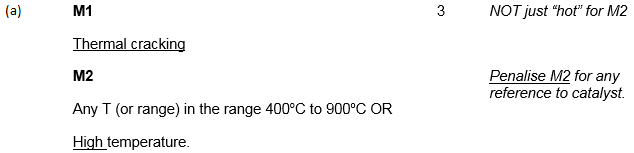
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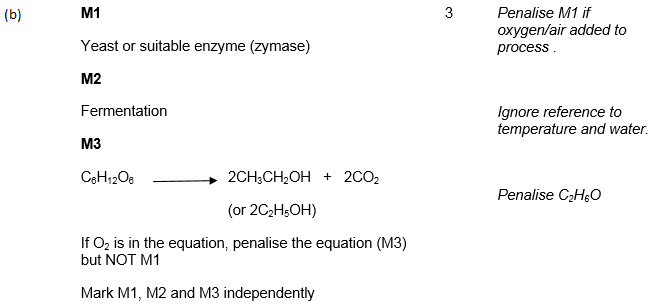
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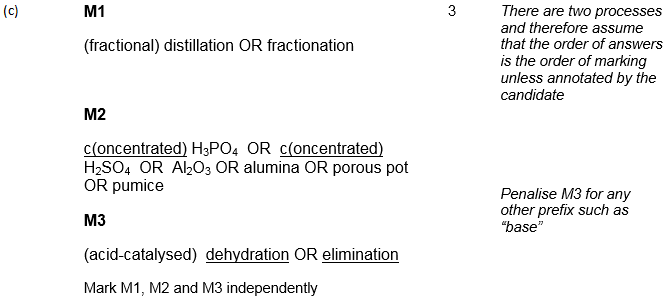
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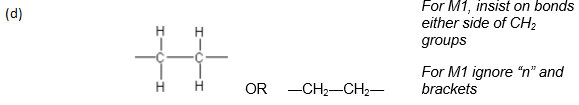
** [13]**

**8.**

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** [9]**