Gr 11 Term 2 Test 1 Memo

1.1 D

1.2 D

1.3 B

1.4 D (4x2)

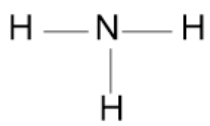
2.1 The average distance between the nuclei of two bonded atoms. (2/0)

2.2 shorter than ✓

2.3 Cl smaller atom/atomic radius than Br: shorter bond length ✓

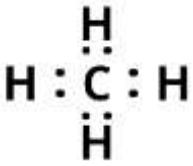
2.4 higher than ✓

2.5 350 kJ.mol^{-1} ✓ [6]

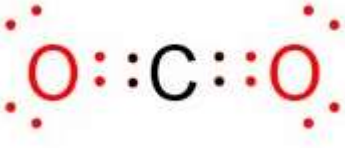
3.1  ✓

3.2 ammonium ✓

3.3 dative covalent bond ✓ [3]

4.1.1  ✓ number of electrons

✓ bonding pairs

4.1.2  ✓ number of electrons

✓ bonding pairs

4.2 △EN = 3,5 – 2,5 ✓

= 1 ✓

4.3 non-polar ✓

4.4 4(413) ✓ = 1 652 kJ.mol^{-1} ✓

4.5 2(707) ✓ = 1414 kJ.mol^{-1} ✓

2,5(1414) = 2534 kJ ✓

4.6 $E_{required}$= 498(2) ✓ + 1652 = 2648 kJ.mol^{-1}

$E_{released}$= 2x2(463) ✓ + 1414 = 3266 kJ.mol^{-1} ✓ for adding reactants/products

$E_{released} - E_{required}$ = 3266 – 2648

= 618 kJ.mol^{-1} ✓

Exothermic ✓ [17]

5.1 H_2: London forces NH_3: hydrogen bonds ✓

Hydrogen forces > London forces ✓

More energy required to break hydrogen bonds – NH_3 higher bp ✓

5.2.1 H_2 ✓

5.2.2 Lowest BP; weakest IMF ✓

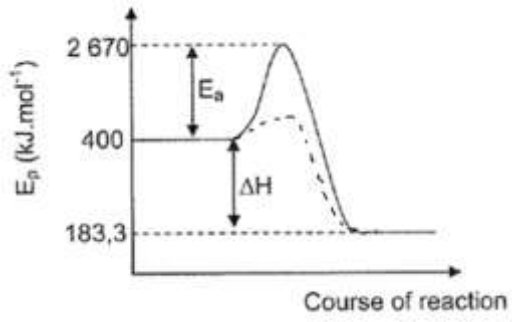
∴ highest vapour pressure ✓ [6]

6.1 Minimum energy needed for a reaction to take place. ✓✓ (2/0)

6.2 Exothermic ✓

6.3 energy of products < energy of reactants ✓

6.4



✓

[5]

Total [37]