Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Introduction To Organic Chemistry

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Name of the Student:_____
Max. Marks : 16 Marks **Time : 16 Minutes**

Mark Schemes

Q1.

(a) (i) C_nH_{2n} / C_xH_{2x}

1

(ii) Fractional distillation / GLC / gas liquid chromatography / fractionation

*Do **not** allow cracking / distillation*

1

(b) (i) But-1-ene / but1ene

Ignore hyphens and commas

*Do **not** allow butene-1 / but-2-ene / butane / butane /alkene / C_4H_8 / propene / straight-chain alkene*

1

(ii) A structure of cyclobutane or methyl-cyclopropane

Allow skeletal formula.

1

(c) (i) $C_{15}H_{32} \rightarrow 2C_4H_8 + C_7H_{16}$

Do not accept multiples.

1

(ii) Thermal cracking

Not catalytic cracking or cracking.

1

To produce products that are in greater demand / more valuable / more expensive / more profitable

The (unsaturated) alkene or the (unsaturated) molecule or X produced can be polymerised or can be made into plastics.

Ignore more useful products.

1

(iii) Break (C–C or C–H) bonds

Allow to overcome the activation energy.

Allow to break the carbon chain.

Penalise breaking wrong bonds.

1

(d) (i) H_2

Only.

1

(ii) Fuel / LPG

Allow camping gas, lighter fuel, propellant, refrigerant, cordless appliances.

Do not allow petrol or motor fuel.

Ignore natural gas.

1

(iii) $C_4H_{10} + 2.5O_2 \rightarrow 4C + 5H_2O$

Accept multiples.

1

(iv) SO^2 / sulfur dioxide

If other sulfur oxides, mark on.

1

Calcium oxide / CaO / lime / quicklime

Allow $CaCO_3$ / allow $Ca(OH)_2$ or names.

Allow any solid base.

M2 dependent on M1.

Do not allow limewater.

1

(v) Neutralisation

Allow acid-base reaction.

Allow flue gas desulfurisation / FGD

1

(e) (Molecules) are similar sizes / have similar M_r / have similar number of electrons

Chemical error CE = 0/2 if breaking bonds.

Allow similar number of carbon and hydrogen atoms / similar surface area / similar chain length.

Can accept same number of carbon atoms.

Do not accept same number of H atoms / same number of bonds.

Ignore similar amount of bonds.

1

Similar van der Waals forces <u>between molecules</u> / similar <u>intermolecular</u> forces (IMF)

Not similar incorrect IMF eg dipole-dipole

1

[16]