TRINITY COLLEGE NABBINGO
BEGINNING OF TERM II EXAMINATIONS
S.5 CHEMISTRY PAPER 1
TIME: 1 HOUR

INSTRUCTIONS

- *Answer all questions*

1. (a) The freezing point of a solution containing 3.294g of sulphur in 100g of naphthalene was found to be -0.830^0C and another solution containing 1.67g of iodine in the same mass of naphthalene froze at -0.84^0C. Calculate;

(i) The freezing point depression constant for naphthalene. (Molar mass of iodine is 127)

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(ii) The molar mass of sulphur in naphthalene.

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(b) (i) Determine the molecular formula of sulphur.

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2. (a) Write down the structural formula of the following organic compounds.

(i) 2 – Bromo – 3, 3 Dimethyl pentane

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(ii) 2, 3 – chloro, iodo, 2 – methyl hexane.

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(iii) 4, 4 Bromo, methyl, 2 chloro, pent – 2 – ene.

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(b) Write down the IUPAC names of the following organic compounds.

(i) $(CH_2CH_2)_3CBr$

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(ii) $CH_3CH_2\underset{\underset{CH_2CH_3}{|}}{C} = CH\ CH_3$

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(iii) $CH_3CH_2CH_2Cl$

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(iv) $CH_3CH_2CH = \underset{\displaystyle CH_3}{\overset{\displaystyle |}{C}}\ CH_3$

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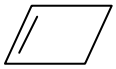
(v) 

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3. When 20cm3 of hydrocarbon Q was exploded in excess oxygen ($200cm^3$), it completely burnt with a sooty flame. The volume of residual gas after cooling to room temperature was $160cm^3$ and addition of aqueous potassium hydroxide to the residual gas, the final volume of gas was $20cm^3$.

(a) Write the general equation for the complete combustion of hydrocarbons.

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(b) Calculate the molecular formula of Z.

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END