

SIMPLE CLASSIFICATION OF SUBSTANCE MARKING SCHEME

1. 1995 Q15 P1

Cool the mixture to a temperature below -196°C to form a liquid then start warming, Nitrogen distils off a gas at -196°C (cool first) (2 marks)

2. 1995 Q6 P2

(a) (i) Bitumen, it has highest B.P (2 marks)

(ii) Fractional distillation. During the distillation petrol would distil off at 175°C and diesel could distil at 350°C (2 marks)

(iii) Each component is mixture of hydrocarbons which have different boiling points

(iv) Methane $\text{CH}_4(\text{g})$

Ethane C_2H_6

Propane C_3H_8

Butane C_4H_{10}

(b) Burning it in limited amount of air will produce carbon monoxide which is poisonous (2 marks)

(c) Manufacture of tar used in tarmac/ sealing of roofs (1 mark)

3. 2001 Q4a P2

(a) (i) KOH or NaOH or chemical names or common nodes (any contradiction = 0 mark)

(ii) (Boiling points Nitrogen = -196°C , Oxygen = -183°C)

i. Heat/ boil the liquid air/warm/ raise the temp of liquid air

ii. Nitrogen comes out first because it has a lower boiling point than oxygen (if word heating/ boiling/ raising the temp or warming not mentioned the candidate score 0mark)

4. 2003 Q9 P1

a) A condenser/ lie big condenser

b) To show when vapour fractions are distilling off.

c) C

5. 2004 Q27 P1

(a) 4 and 5 blue and Green (full) $\text{H}_2\text{SO}_4(\text{aq})$ is on electrolyte

(b) 2 and 3 (1) yellow and red

(c) Yellow and red (1)

4 – Blue

5 – Green

2 – Yellow

3 – Red

award if the colour is tied to the number

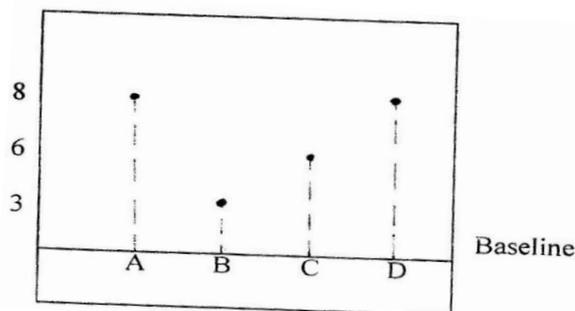
(3 marks)

6. 2004 Q6a P2

- (a) (i) Fractional distillation
(ii) Molecular mass/ density , Boiling point

7. 2005 Q1 P2

- a) (i)



- (ii) A and C

b) Since NH_4Cl_4 sublimes but CaCl_2 does not ; sublimation process would do .Heat the mixture. Ammonium chloride sublimes into vapour and condenses on the cooler part of the heating tube. Calcium chloride will remain on the bottom of the heating tube.

c) i) Fractional distillation

ii) Separating funnel method

Since the tow liquids are immiscible, pour both the liquids in a separating funnel and allow settling, the denser liquid will settle down and the less dense will form a second layer on top. Open the tape and run out the liquid in the bottom layer leaving the liquid in the second layer in the funnel.

8. 2006 Q10a P1

- a) sublimation

(1 mark)

9. 2008 Q14 P1

(a) A (I)

(b) A_1 (I) using baseline

10. 2008 Q1a P1

(a) (i) Contain methane which is a fuel/ methane can burn/ flammable

(ii) Pass a weigh a known volume of biogas (VI) through dissolved NaOH or KOH/ $\text{Ca}(\text{OH})_2$ CO_2 will be observed

Or CH_4 will not be absorbed – measure volume (v_2)

CH_4 $\frac{\text{Volume methane}}{\text{Volume of biogas}} \times 100$

11. 2009 Q5a-b P2

(a) (i) I. Condensation

II. Melting

(ii) Iodine, Benzoic acid, Camphos, Dry Ice. Solid CO_2 Naphthalene

(iii) $\text{H}_2\text{O}(\text{g}) \rightarrow \text{H}_2\text{O}(\text{g})$

(b) (i) Van des waals and hydrogen bonding

(ii) Van des waals forces

12. 2012 Q2 P1

- add water√ to dissolve CuSO_4 , Fe_2O_3 doesn't dissolve

- Filter out Fe_2O_3 √

- Wash the residue √with plenty of distilled water to remove traces of the filtrate

- Dry the residue√ between filter papers