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REPUBLIC OF SOUTH AFRICA

JUNE EXAMINATION GRADE 12

2026

MARKING GUIDELINES

TECHNICAL SCIENCES

(PAPER 2)

6 pages



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MARKING GUIDELINES**TECHNICAL SCIENCES (PAPER 2)****GR12 0626****QUESTION 1**

- 1.1 B ✓✓ (2)
- 1.2 D ✓✓ (2)
- 1.3 D ✓✓ (2)
- 1.4 C ✓✓ (2)
- 1.5 A ✓✓ (2)
- [10]**

QUESTION 2

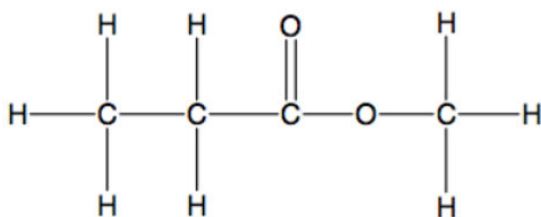
- 2.1 An atom or a group of atoms that determine the chemistry of a molecule. ✓✓
(0 or 2 marks)

OR

An atom or a group of atoms that determine(s) the physical and chemical properties of a group of organic compounds. (2)

- 2.2 2.2.1 F ✓ (1)
- 2.2.2 H ✓ (1)
- 2.2.3 G ✓ (1)
- 2.2.4 E ✓ (1)
- 2.3 2.3.1 Ester ✓ (1)

2.3.2

**Marking criteria:**

- Functional group ✓
- Methyl side ✓
- Propanoate side ✓

- 2.3.3 E ✓ and H ✓ (2)

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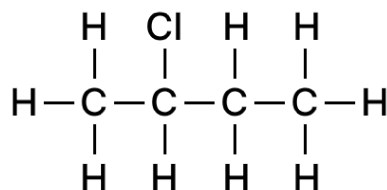
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MARKING GUIDELINES**TECHNICAL SCIENCES (PAPER 2)****GR12 0626**

2.4 2.4.1 Halo alkane / Alkyl halide ✓

(1)

2.4.2



✓ ✓ (0 or 2 marks)

Marking criteria:

- The functional group **MUST** be on the second carbon

(2)

2.4.3 **(Positive marking from 2.4.2)**

Secondary ✓

(1)

2.4.4 **(Positive marking from 2.4.2)**

2 – chloro butane

Marking criteria:

- 2 – chloro ✓
- butane ✓

Note: If the hyphen is omitted or a comma is used, penalise with 1 mark

(2)

2.5 2.5.1 B and C ✓ ✓ (0 or 2 marks)

(2)

2.5.2 Functional (isomer) ✓

(1)

2.5.3 **(Negative marking from 2.5.2)**

Organic molecules with the same molecular formula but different functional groups. ✓ ✓ (0 or 2 marks)

(2)

2.5.4 **B = Pentan – 3 – one****C = Pentanal****Marking criteria:**

- Pentan ✓ –3– one ✓
- Pent ✓ anal ✓

Note:

- If the hyphen is omitted or a comma is used, penalise with 1 mark

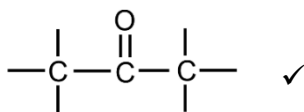
(4)

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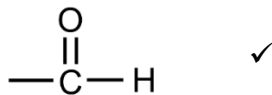
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MARKING GUIDELINES**TECHNICAL SCIENCES (PAPER 2)****GR12 0626**

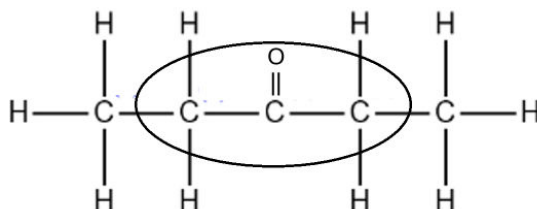
2.5.5 Ketone



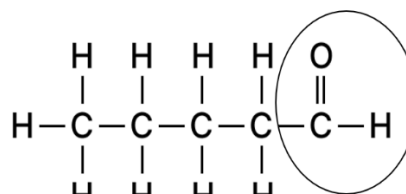
Aldehyde

**OR**

Ketone



Aldehyde

(2)
[29]**Marking criteria:**

- ONE mark for the whole structure
- Any hydrogen added or bonds missing / added, then no marks for the structure
- If an R is used at the open bond, then no mark
- If the learners used the second option by circling the functional group, NO hydrogens, except for at the aldehyde should be circled with it.

QUESTION 3

- 3.1 The pressure exerted by a vapour at equilibrium with its liquid in a closed system. ✓✓ (0 or 2 marks) (2)
- 3.2 Alkane ✓ (1)
- 3.3 London forces / Induced dipole forces / Dispersion forces ✓ (1)
- 3.4
- When moving from compound **A** to compound **D**, the chain length increases. ✓
 - The strength of the intermolecular forces / London forces / Induced dipole forces / Dispersion forces increases. ✓
 - More energy is needed to overcome the intermolecular forces, thus the vapour pressure decreases. ✓

OR

- When moving from compound **D** to compound **A**, the chain length decreases.
 - The strength of the intermolecular forces / London forces / Induced dipole forces / Dispersion forces decreases.
 - Less energy is needed to overcome the intermolecular forces, thus the vapour pressure increases. ✓
- (3)

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TECHNICAL SCIENCES (PAPER 2)

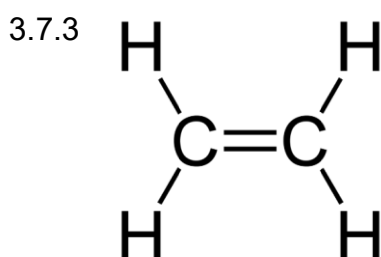
GR12 0626

3.5 **D** ✓ (1)3.6 **(Negative marking from 3.5)**

- Compound **D** has the strongest intermolecular forces / London forces / Induced dipole forces / Dispersion forces ✓
 - It has the highest resistance to flow ✓
- (2)

3.7 3.7.1 Small organic molecules that can be covalently bonded to each other in a repeating pattern. ✓✓ (0 or 2 marks) (2)

3.7.2 Polymerisation ✓ (1)

**Marking criteria:**

- Double bond ✓
- Whole structure correct ✓

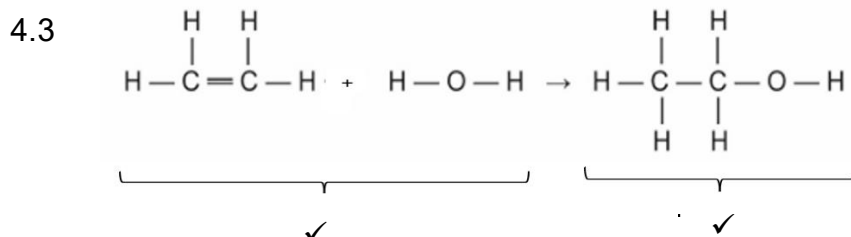
Note: any hydrogen or bond missing or added, max 1/2(2)
[15]**QUESTION 4**

4.1 Hydrogen chloride / Hydrochloric acid ✓ (Must be the NAME and not formulae.) (1)

4.2 4.2.1 Addition ✓ (1)

4.2.2 Substitution ✓ (1)

4.2.3 Addition ✓ (1)

**Marking criteria:**

- Reactants
- Products
- Balancing

(3)

4.4 Water / H₂O ✓ (1)

4.5 NaOH / KOH ✓ (Must be the FORMULAE and not the name.) (1)

4.6 4.6.1 (Excess) Oxygen gas ✓ (Must be the NAME and not the FORMULAE.) (1)

4.6.2 CO₂ ✓ and H₂O ✓ (Must be the FORMULAE and not the NAME.) (2)

[12]



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MARKING GUIDELINES**TECHNICAL SCIENCES (PAPER 2)****GR12 0626****QUESTION 5**

- 5.1 An intrinsic semi conductor is a pure semi conductor. ✓✓ (0 or 2 marks) (2)
- 5.2 Doping ✓ (1)
- 5.3 Cathode (N-type semiconductor) ✓ (1)
- 5.4 Anode to negative terminal ✓ (1)
- 5.5 The depletion region widens / increases ✓ (1)
- 5.6 5.6.1 Characteristics (of a P-N junction diode) ✓ (1)
- 5.6.2 V_F – knee voltage / threshold voltage / cut-in voltage ✓
 V_Z – (Reverse) breakdown voltage ✓ (2)
- [9]**

TOTAL: 75**SA EXAM PAPERS**

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