GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

JUNE EXAMINATION
GRADE 12

2026

MARKING GUIDELINES

TECHNICAL SCIENCES

(PAPER 2)

6 pages

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)

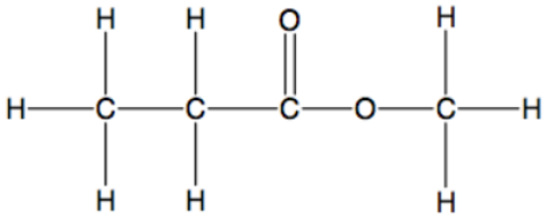
2.2.2 H ✓ (1)

2.2.3 G ✓ (1)

2.2.4 E ✓ (1)

2.3 2.3.1 Ester ✓ (1)

2.3.2



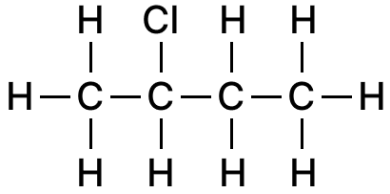
Marking criteria:

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

(3)

2.3.3 E ✓ and H ✓ (2)

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:

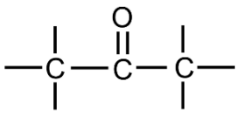
- Pentan ✓ –3– one ✓
- Pent ✓ anal ✓

Note:

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

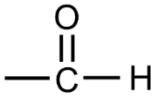
(4)

2.5.5 Ketone



✓

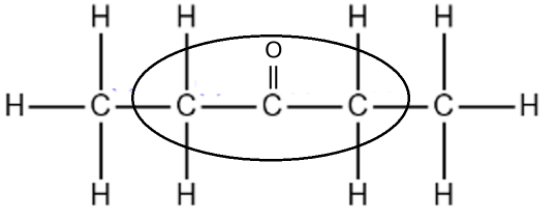
Aldehyde



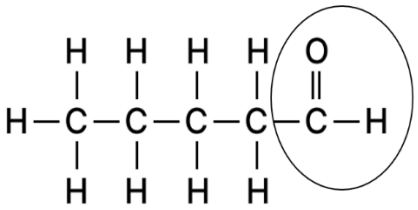
✓

OR

Ketone



Aldehyde



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.

(2)
[29]

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

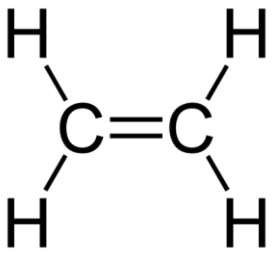
- When moving from compound **D** to compound **A**, the chain length decreases.
- The strength of the intermolecular forces / London forces / Induced dipole forces / Dispersion forces decreases.
- Less energy is needed to overcome the intermolecular forces, thus the vapour pressure increases. (3)

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)

3.7.3 

Marking criteria:
- Double bond ✓
- Whole structure correct ✓

Note: any hydrogen or bond missing or added, max 1/2

(2)
[15]

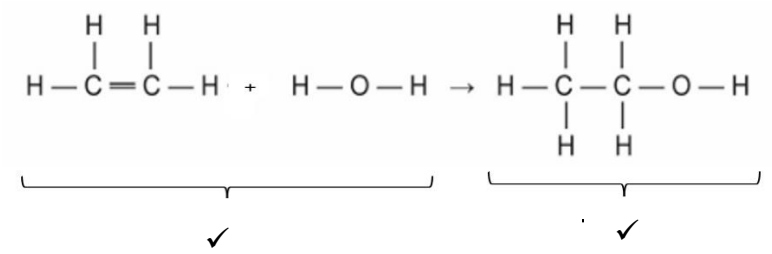
QUESTION 4

4.1 Hyrogen 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)

4.3 

✓ ✓ ✓

Marking criteria:
- Reactants
- Products
- Balancing

(3)

4.4 Water / H_2O ✓ (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 CO_2 ✓ and H_2O ✓ (Must be the FORMULAE and not the NAME.) (2)
[12]

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