Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

(a) Reagent

Acidified
$K_2Cr_2O_7$

Acidified
$KMnO_4$

I_2 / NaOH

Named
RCOOH with HCl or H_2SO_4

Named
RCOCl

Allow names including potassium permanganate
Wrong or no reagent CE = 0

1

P (ketone)
no reaction
no reaction
Yellow ppt
no reaction
no reaction

Penalise incorrect formulae or incomplete reagent, such as $K_2Cr_2O_7$ or acidified dichromate, but mark on.

1

S (2° alcohol)
(orange to) green
(purple to) colourless
no reaction
fruity or sweet smell
Misty fumes

Allow no change or nvc but penalise nothing or no observation
If 2 reagents added sequentially or 2 different reagents used for P and S then CE = 0

1

(b) Tollens'
silver mirror / solid

1

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Fehling's / Benedicts
red ppt

1

(c) **G**

P

If not P then no marks for clip

1

5 OR five

1

(d) $C_4H_{12}Si$

Must be molecular formula

Wrong substance CE = 0 for clip

1

Any **two** from

- <u>One or single</u> peak OR all (four) carbon atoms are equivalent or one environment

1

- upfield from others or far away from others or far to right
- non toxic OR inert
- low boiling point or volatile or easy removed from sample

Ignore and don't credit single peak linked to 12 equivalent H or has a peak at δ = 0

but use list principle for wrong statements

1
1

(e) Figure 1 is **R**

*If not **R** cannot score M2*

M1
1

90−150 (ppm) or value in range is (two peaks for) C = C / alkene

M2
1

Figure 2 is **T**

*If not **T** cannot score M4 or M5*

M3
1

50-90 (ppm) or value in range is C—O or alcohol or ether

M4
1

two peaks (so not S which would have only one)

M5
1

(f)

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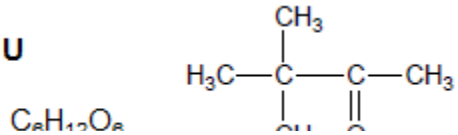
U



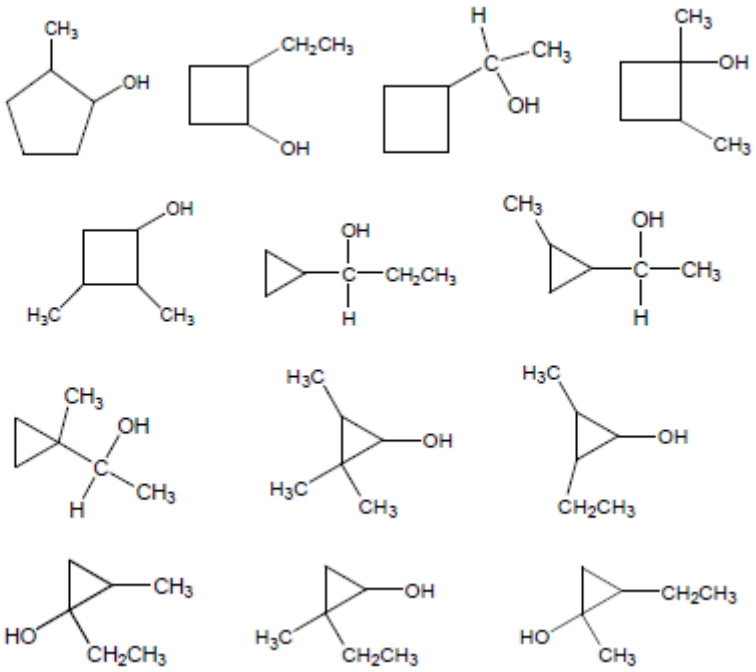
$C_6H_{12}O_6$

1

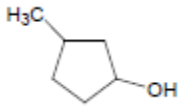
Answers include

V

$C_6H_{12}O_6$



*Not allow **S***



*because **V** must be an isomer of **S***

[17]

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