

Name of the Student: _____

Max. Marks : 16 Marks

Time : 16 Minutes

Mark Schemes

Q1.

(a) Conc HCl

Allow concentrations of 5M or higher

Allow conc sulfuric or conc strong alkalis

1

(b) Using ninhydrin or ultraviolet light

Allow I₂ (vapour)

1

(c) 7 or seven

1

(d) Some of the amino acids did not separate/dissolve with the first/either solvent

OR

Some amino acids have the same R_f value or have the same affinity with the first/either solvent

Not amino acids have different R_f values in different solvents

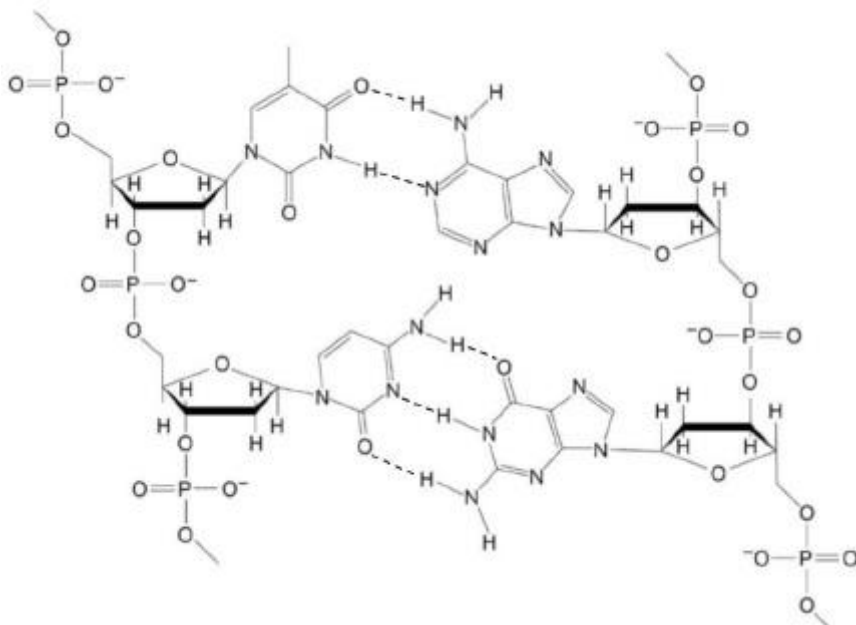
1

[4]

Q2.
D

[1]

Q3.
(a)



M1 scored for the 2 H 'bonds' between A and T

1

M2 scores for the 3 H 'bonds' between C and G

1

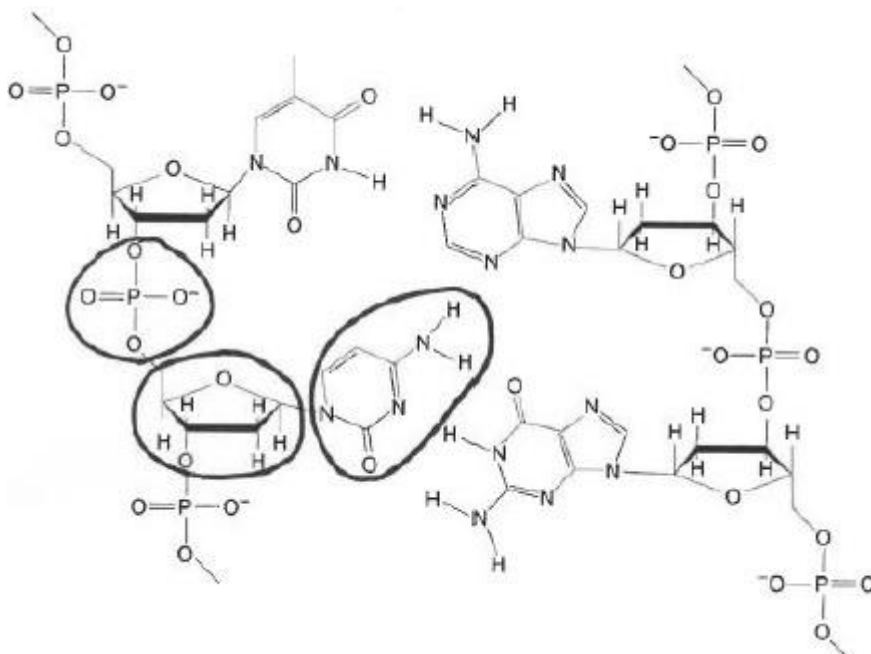
Lose 1 for each extra 'bond'

H bonds must be linear

Penalise the use of full bonds instead of dashed lines once only

Ignore lone pairs and partial charges even if wrong

(b)



M1 scored for correct selection of cytosine and associated sugar

1

M2 scored for selection of correct (upper) phosphate

1

M1 & M2 can be scored with one 'ring'

Allow ring either side of the top O of either phosphate

*If wrong base circled, can score **M2** for correct phosphate conseq to their base, i.e. top left, Thymine it's the upper phosphate top right, Adenine it's the lower phosphate bottom right, Guanine it's the lower phosphate*

- (c) (Complementary means the two strands must have base sequences) that match (all) A to T and C to G

Ignore reference to (hydrogen) bonding

1

[5]

Q4.
D

[1]

Q5.
c

[1]

Q6.

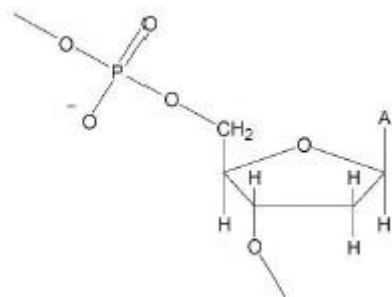
(a) 1 2 3 4 5
T G C A G

1

(b) 13

1

(c)



1 for completed 2-deoxyribose plus A

Allow either OH or trailing bonds

Don't penalise 'sticks' in 2-deoxyribose.

1

1 for correct phosphate joined to CH₂

If two phosphates shown CE=0

If CH₂ missing award 1 if no further errors

If phosphate attached to oxygen on C3 award 1 if no further errors

1

[4]