## **2018 DNA Structure and Replication STQ**

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## **Question 1**

Fig. 5 shows the double helix structure of DNA discovered by Watson & Crick in 1953.



(a) Explain how the stability of the DNA structure is maintained. [3]

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Fig. 4.1 shows part of a DNA molecule. 2





(a) (i) Name W to Z. [2]

W
U
X
Ζ

(ii) Give one advantage of DNA having two strands.

> ..... .....[1]

(b) Fig. 4.2 shows a linear chromosome undergoing the first round of DNA replication.



- Fig. 4.2
- (i) On Fig. 4.2, draw the direction of DNA synthesis for the leading strands using solid arrows  $(\rightarrow)$  and for the lagging strands using dashed arrows (- - >).
- (ii) State two ways DNA replication is different from transcription.



[1]

(c) Fig. 4.3 is an electronmicrograph showing the transcription of genes for ribosomal RNAs at adjac positions along the chromosome in a eukaryotic cell.



Fig. 4.3

(i) Describe and explain the pattern of transcription visible on the part of the DNA coding for ribosor RNA, labelled **X** in Fig. 4.3.

.....[2]

(ii) Suggest possible roles for the non-transcribed DNA that is found between the ribosomal genes.

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[2]	[Total:

2018 / H2 / DHS PRELIM / P2 Q5