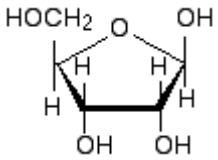
DNA: TRANSCRIPTION TO RNA

1. a) It is a single strand of joined together nucleotides.

   b) RNA contains the code for a single gene, whereas a DNA molecule contains the codes for very many genes.

   c) 

   d) Adenine (A), uracil (U), guanine (G) and cytosine (C).

2. a) A gene is a section of DNA which gives the code for making a single polypeptide (protein) chain.

   b) The enzyme moves along the DNA until it recognises a particular sequence of bases known as a promoter sequence just before the start of the gene.

   c) (i) GCAA (You can work this out by writing down the complementary base to the next four bases in the template strand. Or you can realise that the RNA strand is ending up with the same sequence of bases as the coding strand – with the exception that every T on the coding strand is replaced by U in the RNA.)

   (ii) As in the comment above, every T on the coding strand is replaced by U in the RNA.

   d) After the end of the gene there is a sequence of bases known as a termination sequence. When the enzyme gets to that, it stops adding new nucleotides, and releases the newly-created RNA molecule.