

3(a)(i)	<i>if DNA or thymine stated within response, allow <u>only</u> H-bond mark (ecf)</i> <i>any two from:</i> (paired section) contains, complementary nucleotides / complementary bases / base pairs ; adenine-uracil <u>and</u> guanine/cytosine ; A A/U and G/C (paired by) hydrogen / H, bonds ; I strong (bonds) ecf from mp1 R if another bond also named I phosphodiester bonds between, adjacent / AW, nucleotides
3(a)(ii)	<i>any two from:</i> (enzyme / Drosha / Dicer) active site is specific (to site on dsRNA) ; <i>can apply in context of specific shaped active site or active site specific to a particular location</i> detail of different active sites of Drosha and Dicer ; site to be cleaved / AW, (only), fits into / can bind with / is complementary to (the specific) active site forms enzyme-substrate complex at a particular site Drosha and Dicer require different, conditions / cell locations, to function ; AVP ; e.g. <i>suggestion that</i> Dicer too large to enter nucleus Drosha exposed to degradation in cytoplasm
3(b)	<i>any two from:</i> mRNA is single-stranded <u>and</u> siRNA is double-stranded ; A polynucleotide / chain, for strand siRNA has paired and unpaired nucleotides or mRNA has, only unpaired nucleotides / no base pairing ; mRNA codes for a, sequence of amino acids / protein ; ora for siRNA mRNA has a longer sequence of nucleotides ; A mRNA, is longer / has more nucleotides AVP ; e.g. <i>ref. to</i> siRNA antiparallel / mRNA only 5' to 3' mRNA has no H bonds
3(c)(i)	<i>any one from:</i> RISC must, align with / attach to / form H bonds with, (target) mRNA ; (passenger strand needs to be, separated / released) to allow guide strand to, be exposed / bind to mRNA ; AW ora e.g. (otherwise) guide strand cannot bind to mRNA passenger strand prevents guide strand binding guide strand has complementary sequence to target sequence of mRNA ; ora passenger strand does not

3(c)(ii)	<i>allow protein for polypeptide</i> <i>points need the correct context of cleaved mRNA</i> <i>any three from:</i> <i>no protein formed</i> 1 <i>idea that mRNA may be degraded in cell before attaching to ribosome ;</i> 2 <i>mRNA may not (be able to) attach to ribosome so no, polypeptide formed / translation ;</i> 3 <i>cleaved mRNA results in loss of start, sequence / codon ;</i> <i>abnormal polypeptide formed</i> 4 <i>polypeptide chain is not released from ribosome ;</i> A <i>cleaved mRNA results in loss of stop codon</i> 5 <i>polypeptide chain degraded within cytoplasm / AW ;</i> 6 <i>cleaved mRNA results in short(er) (polypeptide) chain being produced ;</i> 7 <i>polypeptide does not, fold up / form correct tertiary structure / form correct 3D shape ; I tertiary structure changes</i> 8,9 <i>AVP ; e.g. (results in) different R-group interactions / change in number of bonds that can form active site / site of activity, changed / lost</i>
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1(a)(i)	AABB AABb AaBB AaBb ; ;
1(a)(ii)	long chocolate ;
1(b)	A B A b a B a b A B A b a B a b </