

Multiple Choice Answers

Q7: A

Multiple Choice Answers

Q6: C

Multiple Choice Answers

Q7: C

3(a)	increases the rate of a (chemical) <u>reaction</u> ; (and is) not changed (during the reaction) / AW ;
3(b)(i)	<i>any six from:</i> 1 <u>amylase</u> breaks down starch ; 2 iodine (solution) turns blue-black in the presence of starch ; <i>idea that at 0 °C / at the start</i> 3 least, starch break down / enzyme activity / amylase activity ; 4 fewest, successful collisions / enzyme substrate-complexes formed ; 5 <i>idea that</i> particles do not have sufficient (kinetic) energy ; <i>idea as temperature increases</i> 6 the kinetic energy (of particles) increases ; 7 (starch and amylase) collide more, frequently / successfully or more enzyme-substrate complexes form ; 8 faster break down of starch ; 9 40 °C is the <u>optimum</u> temperature ;
3(b)(ii)	<i>any two from:</i> <i>ref to</i> specificity ; <i>idea that</i> protease has a different shaped <u>active site</u> (to amylase) / starch and the <u>active site</u> (of protease) are not complementary ; unable to bind / unable to form an enzyme-substrate complex ;
3(c)	pH / AVP ;

1(a)	thermometer ;
1(b)	table drawn with a minimum of two columns and a header line ; appropriate column / row headings ; three colours recorded correctly for tubes A , B and W ;
1(c)	the greater the (invertase/enzyme) concentration the greater the concentration of, reducing sugars / glucose, produced ; ora
1(d)	as a <u>control</u> ; idea that, water does not break down sucrose / sucrose does not break down on its own ;
1(e)	concentration of invertase/enzyme (extract) ;
1(f)	<i>any one from:</i> to make sure test-tubes are at the same temperature ; to give a sufficient / high rate of reaction / AW ; so that the test-tubes are at the same temperature as the water-bath ;
1(g)	to prevent contamination / AW ;
1(h)	biuret ;

Multiple Choice Answers

Q7: D

Multiple Choice Answers

Q8: C

6(a)	<i>any five from:</i> 1 enzyme activity reaches, peaks / increases and decreases (for L / M) ; 2 maximum (area digested) / peaks, is pH 2 for L and pH 10 for M ; 3 L has steepest increase in activity between pH 1 and 2 / M has most gradual increase from pH 3 to pH 10 / as pH increases / AW ; 4 L has higher activity than M at their optimum pHs / AW ; ora 5 L and M are active, between pH 3 and pH 5 ; 6 L has no activity, from / at pH 5 (and onwards) OR M has no activity, before / at, pH 3 ; 7 M is active for a wider pH range (in this investigation than L) ; ora 8 no change in activity between pH 7 and 8 for M ; 9 data quote with correct units that includes ref to pH and area where the enzyme is active ;
6(b)	<i>any three from:</i> no jelly is broken down / enzyme has no activity ; enzyme / M / active site, is <u>denatured</u> ; enzyme / M / active site, has changed shape ; <u>active site</u>, does not fit / does not bind / is not complementary to, the substrate / protein in jelly ;
6(c)	<i>enzyme L</i>: pepsin ; <i>location</i>: stomach ;