

Question 39 (Answer: **B**)

- Pectinase breaks down pectin, which holds plant cell walls together.
- Breaking it down releases the juice trapped in the fruit tissue.
- So more juice is extracted, and it comes out *clearer*, not cloudier.

Question 40 (Answer: **D**)

- Bacteria reproduce very rapidly, so a useful strain can be multiplied quickly – statement 4.
- They can be made to build complex molecules such as insulin – statement 3.
- They *do* contain plasmids (that is how the gene gets in) and they *are* affected by antibiotics, so 1 and 2 are wrong.

5(a)(i)	bacteria / prokaryote(s) ;
5(a)(ii)	<i>any two from:</i> only use for bacterial infections / when essential / when necessary ; use appropriate antibiotic ; AVP ;
5(b)(i)	genus ;
5(b)(ii)	fungus / fungi ;
5(c)(i)	insulin / mycoprotein / ethanol / (named) alcohol / carbon dioxide / amino acids / hormones / proteins / factor VIII / AVP ;
5(c)(ii)	oxygen ;

5(c)(iii)	<i>any five from:</i> 1 monitoring ; 2 temperature ; 3 water jacket / described / water bath ; 4 pH ; 5 carbon dioxide might reduce pH ; 6 buffer / described ; 7 keep, pH / temperature, at suitable value for enzyme activity ; 8 (named) nutrient supply ; 9 carbon dioxide / waste products, removal ; 10 stirrer to equally (distributed), temperature / pH / nutrient concentration / oxygen concentration / microorganisms ; 11 idea of regulating (gas) pressure ; 12 vent or exhaust ; 13 sealed to prevent contamination / AW ;
5(d)	yeast ;