

MARKSCHEME

May 2000

CHEMISTRY

Standard Level

Paper 3 SBO

Option S – Drugs and Medicines

- S1.** (a) **A** Alkylamide/amide [1]
- B** Alkanoic acid/carboxylic acid [1]
- (b) *Broad spectrum* antibiotics are effective against **a wide variety of bacteria**.
Narrow spectrum antibiotics are only effective against **certain types of bacteria**. [1]
- (Need **both** points for the mark.)
- (c) Penicillins work by interfering with the chemicals that bacteria need to form cell walls. [1]
- Antiviral drugs work by:
- altering the cell’s genetic material so that it cannot use it to multiply; [1]
 - or by blocking enzyme activity in the host cell thus preventing the virus from multiplying; [1]
- Viruses do not have cell walls/do not synthesise cell walls (so antibiotics are ineffective). [1]
- (d) Results in penicillins which are more resistant to the penicillinase enzyme. [1]
- (e) Increases the likelihood/rate of penicillin resistance [1]
 whereby a few organisms causing an infection survive and pass on their immunity. [1]

Total [10 marks]

- S2.** (a) $\text{Al(OH)}_3 + 3\text{HCl} \rightarrow \text{AlCl}_3 + 3\text{H}_2\text{O}$ [2]
- (Award [1] for equation and [1] for balancing.)
- (b) Alginates produce a neutralising layer on top of the contents of the stomach preventing acid from rising into the oesophagus/prevents regurgitation or ‘reflux’ by creating a neutralising layer on top of the stomach fluids. [1]
- (c) (Any two from the following, [1] each:)
- rectal;
 inhalation;
 parenteral (by injection). [2]

Total [5 marks]
