

## Digestion – answers

- 1 (c) The liver is not part of the alimentary canal.
- 2 Salivary gland, gastric gland, pancreas (any two).
- 3 Peristalsis.
- 4 Digestive enzymes dissolve food, make food soluble, break large insoluble food molecules into smaller, soluble molecules.
- 5 (a) Proteins are digested to amino acids, (b) fats are digested to fatty acids and glycerol, (c) starch is digested to glucose.
- 6 Chewing reduces food to portions small enough to be swallowed and increases the surface area of the food for digestive enzymes to act on.
- 7 The enzyme in saliva is salivary amylase and it acts on starch.
- 8 (a) The stomach contents are acid.
- 9 Proteins are partially digested in the stomach.
- 10 The enzyme in gastric juice is pepsin.
- 11 The pancreas produces enzymes which act on proteins (proteases), starch (amylase) and fat (lipase).
- 12 The pancreas releases pancreatic juice into the duodenum.
- 13 Bile emulsifies fats (breaks fats into small droplets).
- 14 The absorbing surface of the small intestine is increased by (a) being very long, (b) having internal folds, (c) having villi, (d) micro-villi on the epithelial cells.
- 15 (a) Glucose and (c) amino acids enter the blood stream, (b) fatty acids and glycerol may enter the blood or the lymph.
- 16 The blood from the intestine goes first to the *liver* before entering the general circulation. If the glucose concentration in the blood is above a certain level, it is changed to *glycogen* and stored. Glucose which passes into the general circulation is taken up by the body cells and used to provide *energy*.  
If there are excess amino acids in the blood from the intestine, the liver converts them to *glycogen* which is stored, and *urea* which is excreted by the kidneys.
- 17 The liver (a) converts hormones to inactive compounds, (b) oxidises alcohol to carbon dioxide and water, (c) stores vitamin A.
- 18 (A) gullet (oesophagus), (B) stomach, (C) liver, (D) pyloric sphincter, (E) bile duct, (F) gall bladder, (G) pancreatic duct, (H) duodenum, (I) pancreas.