**11 Digestion - answers**

Self-assessment questions 11.02

**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.