Foundation Separate version — Higher Tier (★) questions removed.

Q1. Explain how the alveoli are adapted for efficient gas exchange.

[4 marks]

Q2. Describe how villi are adapted for absorption of nutrients.

[4 marks]

Q3. Explain the process of digestion for ONE named food molecule.

[3 marks]

Total: 11 marks

Q1 (4 marks)

Explain how the alveoli are adapted for efficient gas exchange.

- Large total SA (millions of alveoli) [1]
- Thin walls (one cell thick) — short diffusion distance [1]
- Dense capillary network — maintains concentration gradient [1]
- Moist lining — gases dissolve before diffusing [1]

Q2 (4 marks)

Describe how villi are adapted for absorption of nutrients.

- Large SA — finger-like projections with microvilli [1]
- Thin walls — one cell thick [1]
- Rich blood capillary network — rapid removal of absorbed nutrients [1]
- Lacteals for fat absorption [1]

Q3 (3 marks)

Explain the process of digestion for ONE named food molecule.

- E.g. Starch: amylase (in mouth and small intestine) breaks glycosidic bonds [1]
- Starch → maltose → glucose [1]
- Glucose small enough to be absorbed through gut wall into blood by active transport and diffusion [1]