March 2009
QUESTION 19

Describe the functions of the gastric secretions

Gastric secretions 1500ml/day

oxynytic glands (acid forming)	secrete	HCl, pepsinogen, IF and mucus
pyloric glands	secrete	gastrin and mucus

H2O

- Aid in the breakdown of food products and formation of chyme

HCl

- Produced by parietal cell
- Part of innate immunity bacteriocidal
- Provides optimal pH for pepsin activity

Pepsin (present as pepsinogen)

- Pepsinogen (proenzyme) produced by chief cells
- Cleaved in gastric lumen
- Breaks down proteins (10% ingested protein)

Mucus

- Part of gastric protection
- Lines luminal surface of stomach
  - Protects from autodigestion/ulceration (HCl, pepsin)
  - Retains Na+, repels H+
- Lubrication of food
- Traps bacteria

Gastrin

- Released from G cells
- Stimulates parietal cell HCl release directly and via histamine release from paracrine cells
  - 1500 x more potent than histamine
- GI/SI motility
- pancreatic secretions
- GB contraction

Bicarbonate

- Within mucus layer
- Aids in protection of luminal surface and buffers against autodigestion
  - pH close to surface (decreases pepsin activity)
  - Buffers H+ ions

Intrinsic Factor

- Produced by parietal cell
- Cofactor required for the absorption of Vit B12 in the terminal ileum
  - Forms complex

Gastric lipase

- Minimal activity
- Breaks down triglycerides and short chain FA