

5.6 Gastrointestinal physiology

Name: _____ Class: _____ Date: _____

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KEY WORDS enteric nervous system

Objective

Balance the gut's fluid ledger and predict segment-failure signatures.

1 Key knowledge and worked examples

- The ledger

~9 L/day: drink 2, food 1, secretions 6; stool loses 0.1–0.2 L. The jejunum is the workhorse; the ileum signs for B12 and bile salts; the colon absorbs ~1.3 L.

- Worked example: two clocks

Ileal resection: bile-salt diarrhoea appears in months (pool shrinks), B12 deficiency in years (stores) ✓.

2 Practice

2.1 Sum the nine litres (input side). [3]

2.2 Which segment absorbs B12, and what must accompany it? [3]

2.3 What drives the migrating motor complex? [3]

3 Exam-style questions

3.1 Cholera (fictional epidemic context): litres of painless watery stool.

Explain the secretion mechanism (toxin-welded Gs $\rightarrow$ cAMP $\rightarrow$ Cl⁻ out, per MED02). Explain why the mucosa remains intact histologically. State the therapy principle. [7]

3.2 After ileal resection (fictional).

Predict the two malabsorption consequences with their timelines. Explain why fat malabsorption worsens over months (bile-salt pool depletion). State one therapy for each clock. [7]