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Study of the Gastrointestinal System

Experiment 3 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify the major structures on an approved anatomical model and relate each structure to its physiological function.

Principle

The gastrointestinal tract performs propulsion, digestion, absorption and elimination. Accessory organs supply bile and digestive secretions; different segments have different absorptive and protective specialisations.

Requirements

- Labelled and unlabelled teaching models or preserved institutional specimens; atlas supplied by the instructor.
- Pointer, notebook and a blank labelled-sketch sheet.

Procedure

1. Orient the model

Identify anterior/posterior and right/left using anatomical orientation. Record the organ system and the plane of the model.

2. Identify structures

Locate the structures in the table without reading the label first; then check your identification with the instructor.

3. Trace the pathway

Trace ingested material from mouth to pharynx, oesophagus, stomach, duodenum, jejunum, ileum, colon, rectum and anus. Separately trace bile from liver through the biliary pathway into duodenum.

4. Relate structure and function

Explain the function of each identified part and one consequence of disturbed function. Separate an observed structural feature from an inferred physiological effect.

5. Draw and label

Prepare a simple labelled sketch showing the pathway or relationships. Label arrows consistently and record one structure you initially confused.

Human Anatomy, Physiology and Pathophysiology II

Observations and Record

Structure	Identification cue	Function
Stomach	Expanded segment after oesophagus	Mixing, acid secretion and early protein digestion
Small intestine	Duodenum, jejunum and ileum	Major digestion and nutrient absorption
Colon	Larger distal intestinal segment	Water/electrolyte handling and stool formation
Liver	Large upper-abdominal organ	Bile production and metabolic processing
Gallbladder	Sac below liver	Stores and concentrates bile
Pancreas	Gland near duodenum	Digestive enzymes/bicarbonate; endocrine function

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Complete a recall check: cover the model labels and identify five structures. Record the number correctly located and explain the correction for any error; this is a classroom learning record.

Result

Record the identified structures, the traced pathway and the completed labelled sketch.

Precautions

- Use models and institution-approved teaching specimens; do not undertake dissection independently.
- Handle specimens as directed by the laboratory and avoid confusing the viewer's right with anatomical right.

Viva Questions and Answers

1. Where does most nutrient absorption occur?

In the small intestine.

2. Does the gallbladder produce bile?

No. The liver produces it; the gallbladder stores and concentrates it.

3. Why distinguish endocrine and exocrine pancreas?

Hormones enter blood, while digestive secretions enter ducts leading to the intestine.

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