What comprises the answer to an unknown histology image?

If you don't recognize the first slide you look at, begin with another with which you are more familiar.

Low power scanning of the entire field is essential. Ideally, it should point to 2 or 3 possibilities.

Low power should reveal:
Whether the organ is compact or tubular.
Whether either cartilage or bone is present.
Whether GI layering is present (distinguishing between GI organs and the respiratory, vascular, gall balder, urinary, and reproductive systems).
Whether there is a transition in the epithelium.
Whether more than one organ is present. If a nerve, large blood vessel, lymphatic organ or peripheral or sensory nerve is the section, include it in the identification and justification.

Higher magnification is essential to identify the specific and characteristic features of the organ:

Among these features may be:
the character of the epithelium;
germinal centers in a cortex/medulla organization (lymph node), red/white pulp (spleen), parietal cells (stomach), villar islands (small intestine), wide, uniform-bore glands (large intestine), the presence of spermatids (testes), enclosed follicles (endocrine thyroid vs exocrine mammary gland or prostrate), the presence of separate regions of neurosecretory axons and glandular tissue (pituitary), portal tracts (liver), trilayered cortex with a lightly staining middle cortical region (adrenal), islets of Langerhans (pancrease), only mucous acini (sublingual),

You may answer in literary paragraphs or sentence fragments, in outline or bullet points, using labelled drawings as supplements, However, a straightforward organization will make certain that the response is complete.

Is the organ compact or tubular?

If it is compact,

1) Comment on **the capsule** (i.e., dense connective tissue ± mesothelium or are there efferent lymphatics? Do blood or lymphatic vessels penetrate the capsule? Are septa or trabecula present? Are they dense or delicate? Do they divide the organ into lobules?

2) **Is there a cortex and medulla organization? Is it organized into lobes and lobules?**

3) **Describe the cells and organization of the parenchym**a **and stroma**:
Is the parenchyma glandular (tubuloacinar (salivary glands, pancreas, mammary gland)? Tubuloacinar as in the lung? Are there secondary lymph nodules (lymph nodes, spleen)? Are there cords (liver); clusters, cords and groups (endocrine organs including the adenohypophysis, parathyroid, and the adrenal zona golmerulosa); cortical labyrinth (kidney).

If it is tubular,

1) **Is there GI layering?**

2) **Describe the mucosa, including a full and complete description of the epithelium with the features and any specialized cells present in glands** (e.g., for the small intestine (duodenum) simple columnar with absorptive microvillar and globlet cells; villi and villar islands; submuscosal mucous glands—Brunner's glands—and Paneth cells in the crypts. For the fundic stomach, simple columnar epithelium with surface mucous cells and a pit-gland organization with mucous neck cells, large number of parietal and chief cells) and the nature of the lamina propria (Is any class of leukocytes prevalent?)

3) **Comment on each of the layers including the submucosa and orientation of the smooth muscle in the muscularis or media**, especially if it is a key feature of the organ (e.g., 2 layers inner circular/outer longitudinal).

4) Determine whether it is **longitudinal or cross section (use the orientation of smooth muscle layers)**

Decide what organ is on the section, including the distinguishing fetures indicated above; then, for completeness, note one or two features that distinguish it from organs it may be confused with (i.e, "look-alike" organs).