4.5 Organ histology: urinary, endocrine, reproductive and skin

Name: _____ Class: _____ Date: _____ **Total: 24 marks**

KEY WORDS nephron

Objective

Match nephron segments to their epithelial signatures and reason about endocrine and skin architecture.

1 Key knowledge and worked examples

■ Signatures

Proximal = cuboidal + brush border (~65% reabsorbed); loop = flat squamous; distal = cuboidal; collecting duct = tall columnar. Endocrine = cords on fenestrated capillaries; skin = keratinised stratified squamous, ~4-week turnover.

■ Worked example: naming a field

Capillary tuft in a capsule beside a fuzzy-bordered cuboidal tubule: glomerulus + proximal tubule = renal cortex ✓.

2 Practice

2.1 Which nephron segment reabsorbs ~65% of filtrate? [3]

2.2 Why do endocrine cells sit on fenestrated capillaries? [3]

2.3 What is the epidermal turnover time? [3]

3 Exam-style questions

3.1 For each nephron segment, state the epithelium and its functional reason.

Glomerulus, proximal, loop, distal, collecting duct – five segments, five signatures ✓. [8]

3.2 A burn heals poorly (fictional case).

Explain why basement-membrane survival decides regeneration (the re-seeding template). Contrast partial- and full-thickness injury in one sentence each. State the immediate risks in the first 48 hours. [7]