How Does Structure of the Nephron and Collecting Ducts Relate To Kidney Function?

1. Distinguish between the terms "Bowman's capsule", "glomerulus" and "renal corpuscle".

2. Explain how pressure filtration works, including the role of afferent and efferent arterioles; what components are present in the initial filtrate?

3. Explain the structure and function of the glomerular filter, including the role of:
   - fenestrated capillaries
   - podocytes
   - the basement membrane

4. Trace filtrate from Bowman's capsule through the proximal tubule, Henle's loop and the distal tubule, indicating changes which occur in the filtrate in each region.
5. Compare the histology of the proximal vs. distal tubule and indicate how this relates to their function.

6. Explain the location within a nephron and the function of the
   juxtaglomerular apparatus
   mesangium
   capillary plexus

7. Describe the "vasa recta" and the thin and thick limbs of Henle's loop; what role does each play in reabsorption?

8. Explain the role of collecting tubules and collecting ducts in modification of the filtrate; which hormone plays a role?

9. Describe the general structure, function, and location within the kidney of the ducts of Bellini.