1 ANATOMY & PHYSIOLOGY OF THE KIDNEY

أسئلة أخرى

1) Which structure is located medially and contains the renal artery, vein, lymphatics, and pelvis of the ureter? A. Renal cortex B. Renal papillae C. Renal sinus D. Hilum **E.** Columns of Bertini	**D**
2) What is the standard thickness of the outer renal cortex? A. 0.5 cm B. 1 cm C. 2 cm D. 3 cm E. 5 cm	**B**
3) Which anatomical structure is formed by granular-looking tissue extending between the renal pyramids? A. Medullary rays B. Minor calyces C. Columns of Bertini D. Major calyces E. Fibrous capsule	**C**
4) At which vertebral level does the kidney typically lie on the posterior abdominal wall? A. T10 to L1 B. T11 to L2 C. T12 to L3 D. L1 to L4 E. L2 to L5	**C**
5) At what level do the renal arteries typically arise from the aorta? A. T11-12 B. T12-L1 C. L1-2 D. L3-4 E. L5-S1	**C**
6) Which branch of the renal artery runs along the base of the pyramids at the corticomedullary junction? A. Interlobar artery B. Arcuate artery C. Interlobular artery D. Afferent arteriole E. Segmental artery	**B**
7) Which type of nephron is characterized by having long loops of Henle that turn back in the inner medulla? A. Superficial nephron B. Midcortical nephron C. Cortical nephron D. Juxtamedullary nephron E. Peritubular nephron	**D**

8) What structure is formed by the invagination of the glomerular tuft into the Bowman's capsule? A. Renal pelvis B. Renal corpuscle C. Loop of Henle D. Collecting duct E. Vasa recta	**B**
9) Which cell type is found in the inner visceral layer of Bowman's capsule in contact with the capillary tuft? A. Endothelial cells B. Mesangial cells C. Podocytes D. Lacis cells E. Macula densa cells	**C**
10) Which function is attributed to the mesangial cells located at the hilum of the glomerulus? A. Secretion of renin B. Detection of NaCl concentration C. Phagocytic and contractile functions D. Production of erythropoietin E. Reabsorption of glucose	**C**
11) Where do the vasa recta originate? A. Afferent arterioles of superficial nephrons B. Efferent arterioles of juxtamedullary nephrons C. Interlobular arteries D. Arcuate veins E. Renal pelvis	**B**
12) Which component of the Juxta-Glomerular Apparatus is located in the distal convoluted tubule and detects changes in NaCl concentration? A. Epithelioid cells B. Lacis cells C. Macula densa cells D. Peripolar cells E. Podocytes	**C**
13) What is the primary stimulus for the secretion of erythropoietin by the kidney? A. Hypertension B. Hyperglycemia C. Tissue hypoxia D. Hypocalcemia E. Hyperkalemia	**C**
14) Which hormone is primarily activated or synthesized by the kidney? A. Insulin B. Active Vitamin D C. Prolactin D. Growth Hormone E. Vasopressin	**B**

15) What percentage of cardiac output do the kidneys normally receive? A. 5-10% B. 10-15% C. 20-25% D. 30-35% E. 45-50%	**C**
16) What is the normal total glomerular ultrafiltration rate (GFR)? A. 10-20 ml/min B. 40-60 ml/min C. 90-120 ml/min D. 150-200 ml/min E. 250-300 ml/min	**C**
17) Which mechanism describes the constriction of afferent arterioles in response to increased NaCl delivery to the macula densa? A. Myogenic reflex B. Tubulo-glomerular feedback C. Renin-angiotensin system D. Sympathetic activation E. Countercurrent exchange	**B**
18) What percentage of filtered water, sodium, and potassium is typically reabsorbed in the proximal convoluted tubule (PCT)? A. 10-20% B. 25-40% C. 50-60% D. 65-80% E. 90-100%	**D**
19) Which segment of the nephron is impermeable to water? A. Proximal convoluted tubule B. Descending limb of Loop of Henle C. Thick ascending limb of Loop of Henle D. Cortical collecting duct E. Urinary space	**C**
20) Water reabsorption in the collecting duct is primarily controlled by which hormone? A. Aldosterone B. Renin C. Antidiuretic hormone (ADH) D. Parathyroid hormone (PTH) E. Atrial natriuretic peptide (ANP)	**C**
21) What is the reference range for urinary specific gravity (SG)? A. 1.000-1.005 B. 1.005-1.030 C. 1.030-1.050 D. 1.050-1.075 E. 1.080-1.100	**B**
22) Bence Jones protein, which precipitates at 56°C and redissolves at 100°C, is a marker for which condition? A. Diabetes Mellitus B. Multiple Myeloma C. Nephrotic Syndrome D. Acute Pyelonephritis E. Renal Artery Stenosis	**B**

23) In microbiological examination, what bacterial count per ml is generally required to confirm a diagnosis of Urinary Tract Infection (UTI)? A. 1,000 B. 5,000 C. 10,000 D. 50,000 E. 100,000	**E**
24) Which test is used to assess the kidney's ability to acidify urine? A. Water deprivation test B. Vasopressin test C. Ammonium chloride test D. DMSA scan E. Creatinine clearance	**C**
25) A low level of Complement C3 and C4 is typically found in which condition? A. IgA Nephropathy B. Systemic Lupus Erythematosus (SLE) C. Minimal Change Disease D. Renal Cell Carcinoma E. Polycystic Kidney Disease	**B**
26) Which radiological investigation is indicated for diagnosing vesico-ureteric reflux? A. KUB B. IVU C. Voiding cystourethrography D. Renal angiography E. DMSA scan	**C**
27) Which of the following is an absolute contraindication for a kidney biopsy? A. Nephrotic syndrome B. SLE with renal disease C. Uncontrolled bleeding diathesis D. Renal impairment of unknown etiology E. Heavy proteinuria	**C**
28) What is the primary use of a DMSA scan in renal imaging? A. Measuring GFR B. Detecting renal scarring C. Identifying renal vein thrombosis D. Staging renal tumours E. Assessing bladder volume	**B**
29) Which substance is used as a marker for tubular disease, such as Fanconi's syndrome? A. Serum Creatinine B. Blood Urea Nitrogen C. Urinary B2-microglobulin D. Plasma Urea E. Urinary Glucose	**C**
30) What is the minimum urine output (UOP) per day required to maintain adequate excretion of waste products? A. 100 ml B. 200 ml C. 400 ml D. 600 ml E. 800 ml	**C**

31) Which segment of the renal tubule is the primary site for the secretion of weak acids and bases? A. Early PCT B. Distal part of PCT C. Thin descending limb D. Thick ascending limb E. Distal convoluted tubule	**B**
32) Which transport protein is responsible for Na+ entry in the distal convoluted tubule (DCT)? A. Na+-H+ exchanger B. Thiazide-sensitive Na+-Cl– cotransporter C. Epithelial sodium channel (ENaC) D. Na+,K+-ATPase E. Glucose transporter	**B**
33) Which radiological procedure is considered the "simplest, least invasive, and most informative" for initial assessment of renal size and stones? A. CT Scan B. MRI C. Ultrasonography (U.S.) D. Renal Angiography E. IVU	**C**