

Study Guide for Exam 4
Part 1 of 2 - The Urinary System
 (Page #s indicate where topic begins.)

GLOMERULAR FILTRATION p. 1007 / 969

The Filtration Membrane

Net Filtration Pressure

Glomerular Filtration Rate

Clinical Applications – What if...

Regulation of NFP and therefore GFR

Intrinsic Controls (Renal Autoregulation)

Extrinsic Controls (Sympathetic stimulation and Hormonal Controls)

REGULATION OF ECF (and therefore Urine) CONCENTRATION AND VOLUME p. 1015 / 978

The Countercurrent Multiplier and Exchanger

Formation of Dilute urine

Formation of Concentrated Urine

Diuresis and Diuretics

SOLVENT DRAG (not in text)

RENAL CLEARANCE (a.k.a. Plasma Clearance) p. 1021 / 984

TUBULAR MAXIMUM (not in text)

Related Terms you should know:

micturition	diuresis	GFR	polyuria	ADH
inulin	diuretic	NFP	ACE	reabsorption
	aldosterone	solvent drag	secretion	angiotensin I & II
tubular max.	renin	filtrate	urine	glucosuria
anuria	proteinuria	osmolality	dysuria	renal clearance
pH of blood	acidosis	alkalosis	furosemide	renal calculi
hematuria	acid vs. base	urea	creatinine	dialysis & how it works

MICTURITION (OYO from text)

pH AND ACID-BASE BALANCE (OYO from lab, 2 weeks)

Know the concept of pH, pH values for blood, sources of H⁺, pH values for urine, and how each of the 3 compensatory mechanisms works to maintain proper pH of the blood.

This was covered in two labs. That information from lab is fair game for the lecture exam.

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Part 2 of 2- Fluid, Electrolyte, and Acid-Base Balance

FLUID COMPARTMENTS

Identify the fluid compartments and the percentages of fluids they contain.

COMPOSITION OF BODY FLUIDS

Learn which components are most abundant in each compartment

Osmolality – how to predict it.

FLUID MOVEMENT AMONG COMPARTMENTS

WATER BALANCE

Input vs. Output (OYO)

Thirst

Dehydration, Hypotonic hydration, Edema (OYO)

ELECTROLYTE BALANCE

Potassium, Calcium, Sodium

ACIDOSIS: Criteria, Causes, and Effects

Respiratory Acidosis

Metabolic Acidosis

ALKALOSIS: Criteria, Causes, and Effects

Respiratory Alkalosis

Metabolic Alkalosis

THE ABCs of ABGs

EXAM #4