Ch 44

Osmoregulation:

 Osmosis:

 Osmolarity:

Osmotic challenges (**fig 44.2**)

 Osmoconformer:

 Osmoregulator:

 Stenohaline:

 Euryhaline:

Marine fish – (**fig 44.3**)

Freshwater fish –(**fig 44.3**)

Land animals: (**fig 44.5**)

 Adaptations:

Transport epithelia (**fig 44.7**)

 (**fig 44.7**)

Nitrogenous waste (**fig 44.8**)

 Ammonia:

 Urea:

 Uric acid:

Excretory process (**fig 44.9**)

 Filtration:

 Hydrostatic pressure

 Selective reabsorption:

Secretion:

Types of excretory systems

Protonephridia: (**fig 44.10**)

 Flame bulb

 Cap cell

Metanephridia: (**fig 44.11**)

 Nephrostome:

 Collecting tubule

 Bladder:

Malpighian tubules: (**fig 44.12**)

Mammalian excretory system (**fig 44.13a**)

 Kidney:

 Renal artery:

 Renal vein:

 Ureter:

 Urinary bladder:

 Urethra:

Mammalian kidney (**fig 44.13b**)

 Renal cortex:

 Renal medulla:

 Renal pelvis:

 Ureter:

Nephron: (**fig 44.13c**)

 Nephron:

 Juxtamedullary nephron:

 Cortical nephron:

 (**fig 44.13d**)

 Glomerulus:

 Bowman’s capsule:

 Proximal tubule:

 Descending loop of Henle:

 Ascending loop of Henle:

 Entire loop of Henle:

 Distal tubule:

 Collecting duct:

**Fig 44.15**

Blood vessels: (**fig 44.13a & d**)

 Afferent arterioles:

 Efferent arterioles:

 Peritubular capillaries:

 Vasa recta:

Regulation of the Kidney

 Antidiuretic hormone (ADH):

 Angiotensin II:

 Renin:

 Aldosterone

Renin-angiotensin-aldosterone system (RAAS) (**fig 44.16b**)

Atrial natriuretic factor (ANF)