Which of the following is found in the spermatic cord:

a) Ductus deferens

b) Dartos muscle

c) Testicle

d) Epididymis

e) Bulbourethreal gland

- a) ductus deferns

- What structure is superior to the urogenital diaphragm?
  - A) Bulbourethreal glands
  - B) Bulb of the penis
  - C) Prostate gland
  - D) Membranous Urethra
-

- C) bulb of the penis

- The ovary is attached to?
  a) Fimbrae
  b) Mesosalpinx
  c) Suspensory ligaments
  d) Ampulla
  e) Internal os

- c) Suspensory ligaments

- The primordial follicle secretes estrogen.
  - True
  - False

- False

- Every month, only one:
  a)Primordial follicle is stimulated
  b)Follicle secretes estrogen
  c)Vesicular follicle undergoes ovulation
  d)Ovary is stimulated
  e)All of the above occur once every month

c)Vesicular follicle undergoes ovulation

- Mandy is 18 years old and typically has a 28-day cycle. Which of the following will be true on the 17th day of her cycle?

  a)FSH levels are rising

  b)Progesterone is being secreted

  c)The ovary is in the ovulatory phase

  d)The uterus is in the proliferative phase

  e) The uterus is in the menstrual phase

b)Progesterone is being secreted

- A sudden decline in estrogen and progesterone levels ends inhibition of FSH release.
  - True
  - False

- True

- The muscular layer of the uterus is called the?
  a) Epimetrium
  b) Myometrium
  c) Endometrium
  d) Mucosa
  e) None of the above

b) Myometrium

- Which of the following is a similarity between an ova and a sperm?
  a) About the same number of each is produced per month
  b) They have the same degree of motility
  c) They are about the same size
  d) Produced by the same organ
  e) They have the same number of chromosomes

e)They have the same number of chromosomes

- Which of the following are correctly mismatched?
  - a)Testes – ovary
  - b)Labia majora – scrotum
  - c)Oviduct – ductus deferens
  - d)All of the above
- e)None of the above

d)All of the above

- After ovulation, the ruptured follicle sloughs off as waste material:
  - True
  - False

- False

- Menstruation will result if:
  a) Blood levels of FSH fall off
  b)Blood levels of estrogen and progesterone decline
  c)Blood levels of estrogen and progesterone increase
  d)The corpus luteum secretes estrogen
  e)None of the above

- b)Blood levels of estrogen and progesterone decline

- Testosterone is produced by:
  a) Spermatocytes
  b) Spermatogonia
  c) Sustentacular cells
  d) Granulosa cells
  e)None of the above

e)None of the above

- Normally, fertilization will occur in the?
  a) Fallopian tubes
  b) Ovary
  c) Uterus
  d) Vagina
  e) Ductus deferens

a)Fallopian tubes

- During ovulation, the egg is released into:
  a)Fallopian tube
  b)Uterus
  c)Vagina
  d)Peritoneal cavity
  e)More than one answer is correct

- d)Peritoneal cavity

- Which of the following plays a role in regulating the temperature around the testes?
  a) Cremaster muscle
  b) Dartos muscle
  c) Bulbospongiosus
  d) Ductus deferens
  e)More than one answer is correct

e)More than one answer is correct

- The testes
  a) Develop within the scrotal cavity
  b) Produce sperm in the seminiferous tubule
  c) Contain sustentacular cells that produce testosterone
  d) Contain interstitial cells that maintain a blood-testes barrier
  E) Are enclosed in a mucous membrane called the tunica vaginalis

b)Produce sperm in the seminiferous tubule

- Which of the following organelles is the most prominent in the neck of a spermatozoa?
  a) Centriole
  b) Lysosomes
  c) Mitochondria
  d) Nucleus
  e) None of the above

- c) Mitochondria

- Which of the following is not true about semen?
  a) A man is probably infertile if his semen contains less than 20 million sperms/ml
  b) It contains sperm and seminal fluid
  c) It protects sperm from the hostile alkaline environment of the male urethra and female vagina
  d) It contains an antibiotic called seminal plasmin
  e) It provides sperm with a transportation medium and nutrients

c)It protects sperm from the hostile alkaline environment of the male urethra and female vagina

- Oogenesis is complete only after the secondary oocyte has been fertilized
  - True
  - False

- True

- Fibrous connective tissue that surrounds each kidney is the

A) cortex.

B) hilum.

C) medulla.

D) renal capsule.

E) renal pyramids.

- D) renal capsule.

- The apex of the renal pyramid is called the
  A) major calyx.
  B) minor calyx
  C) renal papilla.
  D) renal pelvis.
  E) ureter.

- C) renal papilla.

- The major calyces of the kidney converge to form an enlarged channel called the

  A) renal fascia.

  B) renal pelvis.

  C) renal pyramids.

  D) renal papillae.

  E) renal sinus.

- B) renal pelvis.

- The basic histological and functional unit of the kidney is the

  A) glomerulus.

  B) filtration membrane.

  C) nephron.

  D) podocyte.

  E) renal corpuscle.

- C) nephron.

Given these parts of a nephron:

1. renal corpuscle
2. collecting duct
3. loop of Henle
4. distal tubule
5. proximal tubule

Arrange the parts in order as fluid flows from the filtration membrane through the nephron.

A) 1,5,3,4,2
B) 2,4,1,3,5
C) 2,1,4,5,3
D) 4,2,3,5,1
E) 5,1,3,4,2

- **A)** 1,5,3,4,2

- The tuft of capillaries in the renal corpuscle is called the

  A) podocytes.

  B) glomerulus.

  C) calyx.

  D) renal pyramid.

  E) renal sinus.

- B) glomerulus.

- The juxtaglomerular apparatus is formed where the _____ projects between the afferent arteriole and efferent arteriole next to Bowman's capsule.

  A) glomerulus

  B) arcuate arteries

  C) proximal tubule

  D) distal tubule

  E) collecting duct

- D) distal tubule

- Collectively, the capillary epithelium, basement membrane, and podocytes form the

  A) filtration membrane.

  B) glomerulus.

  C) juxtamedullary nephron.

  D) nephron.

  E) renal corpuscle.

- **A)** filtration membrane.

- The part of a nephron between Bowman's capsule and the Loop of Henle is the

  A)collecting duct.

  B) distal tubule.

  C) juxtaglomerular apparatus.

  D) macula densa.

  E) proximal tubule.

- E) proximal tubule.

- The _____ are specialized portions of the peritubular capillaries that extend deep into the medulla of the kidney.

  A) interlobar arteries

  B) arcuate arteries

  C) efferent arterioles

  D) afferent arterioles

  E) vasa recta

- E) vasa recta

- Given these vessels:

  1. arcuate vein
  2. afferent arteriole
  3. efferent arteriole
  4. interlobular vein
  5. peritubular capillaries

  Arrange the vessels in the order in which a drop of blood from the interlobular artery passes through them.

  A) 1,2,4,5,3
  B) 2,3,5,4,1
  C) 3,5,4,2,1
  D) 4,2,5,3,1
  E) 5,2,4,1,3

- **B)** 2,3,5,4,1

- The triangular area of the urinary bladder between the two ureters posteriorly and the urethra anteriorly is the

  A) external urinary sphincter.

  B) internal urinary sphincter.

  C) smooth muscle.

  D) transitional epithelium.

  E) trigone.

- E) trigone.

- Skeletal muscle that surrounds the urethra as it extends through the pelvic floor is the

  A) external urinary sphincter.

  B) internal urinary sphincter.

  C) trigone.

- **A)** external urinary sphincter.

- Active transport of substances from the blood into the nephron is called

  A) filtration.

  B) tubular reabsorption.

  C) tubular secretion.

- C) tubular secretion.

- The movement of substances from the filtrate back into the blood of the peritubular capillaries is called

  A) filtration.

  B) tubular secretion.

  C) backflow.

  D) tubular reabsorption.

  E) micturition.

- D) tubular reabsorption.

- The part of the total cardiac output that passes through the kidneys is called the

  A) filtration fraction.

  B) plasma clearance.

  C) renal blood flow rate.

  D) renal fraction.

  E) tubular maximum.

- D) renal fraction.

- The part of the plasma volume that passes through the filtration membrane is the

  A) filtration fraction.

  B) plasma clearance.

  C) renal blood flow rate.

  D) renal fraction.

  E) tubular maximum.

- **A)** filtration fraction.

- Which of these substances normally cannot pass through the filtration membrane?

  A) hemoglobin

  B) water

  C) sodium ions

  D) bicarbonate ions

  E) glucose

- **A)** hemoglobin

- Of the filtrate that enters the nephron, about what percent is reabsorbed during urine formation?

  A) 99%

  B) 95%

  C) 80%

  D) 65%

- **A)** 99%

- A decrease in plasma proteins results in

  A) decreased colloid osmotic pressure.

  B) increased colloid osmotic pressure.

  C) increased glomerular capillary pressure.

  D) decreased filtration pressure.

  E) increased tubular reabsorption.

- A)decreased colloid osmotic pressure.

- As filtrate moves through the thin segment of the descending limb of the loop of Henle, water moves _____ the nephron, and solutes move _____ the nephron.

  A) into, into

  B) into, out of

  C) out of, into

  D) out of, out of

- C) out of, into

- During tubular reabsorption in the proximal tubule of the nephron, most solutes are moved across the apical membrane by _____ , and across the basal membrane by _____ .

  A) cotransport, cotransport

  B) cotransport, facilitated diffusion

  C) counter transport, cotransport

  D) facilitated diffusion, cotransport

  E) primary active transport, cotransport

- **B)** cotransport, facilitated diffusion

- In kidney nephron epithelial cells, solutes are cotransported with

  A) Ca^{2+} ions.

  B) Cl^{-} ions.

  C) K^{+} ions.

  D) Mg^{2+} ions.

  E) Na^{+} ions.

- E) Na+ ions.

- In kidney nephron epithelial cells, _____ are moved by counter transport through the basal membrane in exchange for K+ ions.

  A) Ca^{2+} ions

  B) Cl^- ions

  C) H^+ ions

  D) Mg^{2+} ions

  E) Na^+ ions

- E) Na+ ions

- The ascending limb of the loop of Henle is _____ to water.

  A) impermeable

  B) moderately permeable

  C) permeable

- **A)** impermeable

- The percentage of filtrate volume reabsorbed in the proximal tubule is

  A) 99%.

  B) 80%.

  C) 65%.

  D) 19%.

  E) 15%.

- C) 65%.

- These ions are cotransported across the apical membrane in the ascending limb of the loop of Henle.

  A) K+ ions and Cl- ions

  B) K+ ions and Mg2+ ions

  C) Ca2+ ions and K+ ions

  D) Ca2+ ions and Cl- ions

  E) Ca2+ ions and Mg2+ ions

- **A)** K+ ions and Cl- ions

- The permeability of the distal tubule and the collecting duct is controlled by

  A) ADH.

  B) aldosterone.

  C) atrial natriuretic factor.

  D) carrier molecules.

  E) sodium ions.

- **A)** ADH.

- All of these compounds are reabsorbed from the filtrate back into the blood EXCEPT

  A) amino acids.

  B) fructose.

  C) Na+ ions.

  D) penicillin.

  E) Ca2+ ions.

- D) penicillin.

- At which of these locations is the osmolality of the filtrate the highest?

  A) Bowman's capsule

  B) proximal tubule

  C) bottom of the loop of Henle

  D) distal tubule

  E) top of the collecting duct

- C) bottom of the loop of Henle

- Renal tubules are _____ permeable to urea than they are to water, therefore urea concentration in the tubules _____ .

  A) less, decreases

  B) less, increases

  C) more, decreases

  D) more, increases

- **B)** less, increases

- Which of these substances is actively transported into the filtrate in the proximal and distal tubule?

  A) H^+ ions

  B) Na^+ ions

  C) glucose

  D) amino acids

  E) Cl^- ions

- **A)** H^+ ions

- The countercurrent multiplier mechanism of the nephron is in the

  A) proximal tubule and distal tubule.

  B) Loop of Henle and vasa recta.

  C) distal tubule and collecting duct.

  D) glomerulus and Bowman's capsule.

  E) glomerulus and collecting duct.

- **B)** Loop of Henle and vasa recta.

- Urea diffuses out of the _____ , and into the _____ .

  A) proximal tubule, distal tubule

  B) proximal tubule, descending limb of the Loop of Henle

  C) descending limb of the Loop of Henle, ascending limb of the Loop of Henle

  D) ascending limb of the Loop of Henle, descending limb of the Loop of Henle

  E) collecting duct, descending limb of the Loop of Henle

- **E)** collecting duct, descending limb of the Loop of Henle

- Juxtaglomerular cells secrete
  - **A)** ADH.
  - **B)** oxytocin.
  - **C)** renin.
  - **D)** aldosterone.
  - **E)** angiotensin

- C) renin.

- Drinking a large amount of beer results in

  A) increased aldosterone secretion.

  B) increased permeability of the collecting ducts of the nephrons.

  C) decreased urine osmolality.

  D) increased urine volume.

  E) both c and d

- **E)** both c and d

- Which of these conditions increases the amount of urine produced?
- **A)** increased ADH secretion
- **B)** increased atrial natriuretic hormone secretion
- **C)** increased aldosterone secretion
- **D)** decreased blood pressure in the glomerular capillaries
- **E)** sympathetic stimulation of the renal arteries

- **B)** increased atrial natriuretic hormone secretion

- Angiotensin II causes
  - **A)** increased ADH secretion.
  - **B)** increased thirst.
  - **C)** increased salt appetite.
  - **D)** increased peripheral resistance.
  - **E)** all of these

- E) all o f these

- When the tubular load of a substance exceeds the tubular maximum, that substance will

  A) be actively transported into the blood.

  B) diffuse into the blood.

  C) appear in the urine.

  D) cause a backflow of filtrate from Bowman's capsule into the glomerulus.

  E) be broken down by carbonic anhydrase.

- C) appear in the urine.

- The micturition reflex

  A) can be stimulated or inhibited by higher centers in the brain.

  B) is stimulated by increased pressure in the bladder.

  C) can be stimulated by irritation of the bladder or urethra.

  D) all of these

- D) all of these

What are the 3 parts of the male urethra?

Prostatic, membranous, spongy

The nephron consists of:

Renal corpuscle, proximal convoluted tubule, Loop of Henle, distal convoluted tubule, collecting duct

What is the GRF?

GLOMERULAR FILTRATION RATE

(The amount of filtrate produced in the kidneys each minute.)

What does the GFR produce?

Renin and erythropoietin

What are the 2 types of muscle around testes?

Dartos and cremaster

What are the male accessory organs?

Seminal vesicles, prostate gland, bulbourethral glands, scrotal sac, penis

The testes are formed in the ___ and descend into the scrotum at _____.

Abdomen; 28 weeks

What are the 3 phases of spermatogenesis?

Spermatogonial phase (mitosis), spermatocyte phase (meiosis),& spermatid phase

What are the 3 materials produced by seminal vesicles?

Fructose, prostaglandins,& fribrinogen

In the female, what are the two types of cysts?

Functional (shrinks after cycle); pathological (increases or stays the same size)

Human fertilization normally takes place in the _____.

Fallopian tubes

What structure does the term fimbrated refer to?

Uterine (fallopian) tube

What is the pathway of urine flow in the kidney?

Renal cortex, renal pyramid, renal papilla, minor calyx, renal pelvis, ureter

How many pyramids are normally in the medulla?

Normally 8, but you can have between 7-12.