Material covered on exam:
Net filtration pressure
Be able to identify the structures of a nephron
Renin-angiotensin system
ADH and water permeability
Characteristics of the glomerular capillary bed
Countercurrent mechanism and medullary osmotic gradient
The mechanism by which concentrated or dilute urine is formed
Mechanism and function of the juxtaglomerular apparatus
How filtrate is generated
Production and components of semen
Gonadotropins and their roles
The role of the corpus luteum in ovulation and pregnancy
The different cell types of the testes and their function
The processes involved in obtaining the male erection
Oogenesis
Spermatogenesis
Meiosis
Sperm transport
Menstrual (uterine) cycle
Sertoli cells
Brain-testicular axis and hormonal regulation of testicular function
Embryonic germ layers and their fates
The process of implantation
Apgar score and its components
The processes surrounding fertilization
Parturition
The stages of labor and what happens when
Selectivity of the placental barriers
Somites
Mother’s physiological changes associated with pregnancy

Essay Question (20 points!): Describe in words or diagramatic fashion the countercurrent mechanism for establishing and maintaining the medullary osmotic gradient as well as the mechanism for forming dilute and concentrated urine. (e.g. Figures 25.14 & 25.15)