1. Use the following steady-state data collected from a patient to answer this question.

120 kg male subject
The subjects GFR is 200 L/Day
His 24 hour urine collection = 3.0 liters
His urine creatinine concentration = 100 mg%

Which one of the following statements regarding this patient is correct?

a) The amount of creatinine produced was 300 mg/24 hours
b) His plasma creatinine concentration was 1.0 mg% x

c) The amount of creatinine produced was 6000 mg/24 hours
d) His plasma creatinine concentration was 1.5 mg%
e) None of the above statements is correct

2. A decrease in the filtration fraction (the ratio of GFR/RPF):

a) will result in an increase in the hematocrit in efferent arteriolar plasma compared to normal
b) occurs when mean arterial, renal perfusion pressure increases from 100 to 120 mmHg

c) will result in a decreased colloid osmotic pressure in efferent arteriolar plasma compared to normal
d) none of the above statements is correct

3. The amount of glucose filtered

\[GFR \times P_{gluc} \times \frac{120 \text{ mg/min}}{100 \text{ mg/min}} = \frac{100 \text{ mg}}{120 \text{ min}} \times \frac{600 \text{ mg}}{120 \text{ min}} \]

a) is given by the product of the plasma glucose concentration and the renal plasma flow
b) attains a maximum value when the plasma glucose concentration reaches the renal threshold
c) is normally more than 1000 mg/min
d) plus the amount of glucose reabsorbed equals the amount of glucose excreted

e) none of these statements is correct

Use the following p-aminohippurate (PAH) data illustrating amounts per unit time secreted, filtered, and excreted (expressed in mg/min) as a function of the plasma PAH concentration (expressed in mg/ml) to answer question #4.

4. Based on the data illustrated you would conclude that

a) line 1 represents the amount per unit time of PAH excreted and line 3 represents the amount per unit time of PAH filtered
b) the amount per unit time illustrated on line 2 divided by the plasma PAH concentration would be equal to the clearance of PAH
c) the amount per unit time illustrated on line 3 times the GFR would equal the amount of PAH filtered
d) the slope of line 2 would be equal to the transport maximum of PAH
e) line 2 represents the amount per unit time of PAH filtered and line 3 represents the amount per unit time of PAH secreted

5. If the tubular fluid to plasma concentration ratio (TF/P) of urea is 1.5 and the TF/P inulin ratio is 3/1 at the end of a proximal tubule, what will be the TF/P sodium concentration ratio at that same point?

a) Between 1.5 and 3.0
b) 3.0
c) More than 3.0
d) 1.5
e) Less than 1.5