BCH472
Second semester 1432-1433

Final Practical

Student Name: ***Student Number:***

Question (1):

Read the following sentences and put True or False and correct the false one(s):

1-In a healthy adult (1200 ml of blood) pass renal excretory every minute, and about 125ml of filtrate is formed. ( )

.....

2- -Decrease proteins in serum indicate the severe liver decease ( )

.....

3- Na+ is the principal intracellular cation and K+ the principal extracellular cation ( )

.....

4-calcium and phosphorus concentration are measured together because they are both affected by bone and parathyroid diseases ( )

.....

5- Glycine, arginine, and methionine all participate in creatine biosynthesis. ( )

.....

6-Increased plasma bicarbonate indicates a metabolic acidosis, results in decreasing in blood pH ( )

.....

7- Hypokalemia is the most significant and life-threatening complication of renal failure. ( )

.....

8- Chronic alcoholism is the most common cause of a low Mg2+ level ( ).

.....

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قسم الكيمياء الحيوية
Biochemistry Department
College of Science - King Saud University

Student Name: ***Student Number:***

Experiment (1): Quantitative Estimation of Protein in Urine

Method :

1- It is necessary first to prepare a standard curve as follows.

2-You have provided with a stock protein solution with a concentration of 140 mg/dl of protein..

3- Label a fresh set of test tubes 1 to 7.

4- Set up a series of test tubes as follows:

Protein concentration mg/dl

Protein excretion g/24 hr. (Normal 0-0.150 g)

5-Take two test tubes labeled "unknown" and "blank".

Tube	***Protein Stock Solution(ml)***	***0.85% Saline Solution (ml)***	***sulphosalicylic acid (ml)***	***1.25% HCl. (ml)***	***Urine sample (ml)***	***Protein (mg/dl)***
(blank)	0.0	6.0	8	-	-	-
1	4.5	1.5	8	-	-	
2	3.0	3.0	8	-	-	
3	2.4	3.6	8	-	-	
4	1.5	4.5	8	-	-	
5	0.9	5.1	8	-	-	
6	0.3	5.7	8	-	-	

Unknown blank	-	-	-	**8**	**2 ml**	-
Unknown	-	-	8	-	2 ml	Unknown

Mix well in each and stand for 5 minutes

6- Using 7 (blank) in the spectrophotometer, set the transmittance at 500 nm.

7- Then using solution 1-6, record the respective transmittances of each suspension.

*8- Measure the volume of the 24 hour urine specimen provided for this estimation.(24 hour urine volume ml (**1000 ml**)*

9- Read the protein concentration of the "unknown" from the standard curve.

*If it is above **140 mg/dl** repeat the estimation after diluting the urine 1:10 with saline solution.*

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Results:

Tube	Transmittance at 500nm	Protein conc. (mg./dl)
1		
2		
3		
4		
5		
6		
7		
Unknown blank		
Unknown		

Calculate the concentration in each standard tube?

10- - You will provided with a standard curve, Find the concentration of the sample on this curve.

From the standard curve, obtain the concentration of protein in urine sample ?

protein concentration of the unknown =.....mg/dl

=.....g/24h

Questions:

Why the sulphosalicylic acid was added ?

.....
.....

According to your result which case you except the sample is ?

.....
.....
.....

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Experiment (2):Qualitative analysis of renal calculi

Test for phosphates

Method:

1-Add 2 ml of sample 2 in a test tube
2-Carfully add 2 ml concentrated nitric acid and
3-then add 2ml of volume of ammonium molybdate solution.
Heat in a boiling water bath, for 15 min

.

Record your result

Test	***Observation***
phosphates	

Questions:

Complete the Sentence:

Mainly if phosphates present in renal calculi, it excepted to also presence of .....in a kidney stone with abnormality in .....secretion due to a medical condition called.....