Urinalysis (lab 9.3)

A) Background information on Urinalysis (lab 9.3)

The background information for understanding this lab is in lab 9.3. Although we will use a different procedure for urinalysis than the one described in the lab manual, you should read lab 9.3 for the background information.

B) Overview of lab

Seven urine samples are labeled A – G. Each sample contains a substance, or has some other feature, that would not normally be present in the urine of a healthy person. Your job is to try to decide which patient(s) listed on the last page might have produced each particular urine sample because of the patient's medical condition, activity, etc.

For example: If urine sample A had ketones, which patient (or patients) on the list might produce urine with ketones? Once you match a patient with an abnormal urine sample, your next task is to think about additional questions you would ask the patient, or additional tests would you perform to find out why this person has ketones in their urine, and whether this is normal or a sign of disease.

C) Procedure

(1) Take one dipstick urinalysis strip. Submerge it fully in urine sample A for 5 full seconds. Be sure all squares are submerged. As soon as your remove it from the urine, lay it flat so that the dye colors in the squares don't run and contaminate each other. After 1 minute, the read the strip by comparing the colors on the strip to the chart on the strip container tube. (The handle of the strip goes near the cap side of the container).

(2) Record the readings of urine sample A in the data table. After your have recorded the readings, look at the list of the 14 patients and decide which one(s) of the 14 may have produced urine sample A. In the blank space under each urine sample, list the patients (by number) that may have produce it.

(3) Now repeat this procedure with urine samples B – G. When you are done, show your instructor your data table.

D) Data table:

	A	B	C	D	E	F	G
Specific gravity:	_____	_____	_____	_____	_____	*_____	*_____
pH	_____	_____	_____	_____	_____	_____	_____
Protein	_____	_____	_____	_____	_____	_____	_____
Glucose:	_____	_____	_____	_____	_____	_____	_____
Ketone:	_____	_____	_____	_____	_____	_____	_____
Bilirubin:	_____	_____	_____	_____	_____	_____	_____
RBC:	_____	_____	_____	_____	_____	_____	_____
Hemo-globin:	_____	_____	_____	_____	_____	_____	_____
List all patients (by number) that may have produced the urine:	_____	_____	_____	_____	_____	_____	_____

* For the specific gravity of urine samples F and G, use these values: F = 1.035 SG, and G = 1.005 SG. Also note that all urine samples have normal daily urine volume except for samples F and G. Patient F makes 453 ml/day urine volume, and patient G makes 2.7 liters/day urine volume.

E) Patients:

1) A healthy person ate a large amount of candy before giving urine.

2) A person donated urine 3 hours after running the Big Sur marathon (She stayed hydrated to a healthy level throughout the marathon).

3) A strict vegetarian donates urine during a routine physical exam.

4) A person took no liquids for 36 hours before giving a urine sample.

5) A person who has been vomiting regularly gave a urine sample.

6) A person on a low carbohydrate diet donated urine.

7) A person taking diuretics to control their high blood pressure donates urine.

8) A person with uncontrolled diabetes mellitus donates urine.

9) A person who has been drinking whisky heavily donates urine (their liver is not damaged).

10) A person who was kicked in the pelvis by a robber donates urine.

11) A person suffering from renal glycosuria donates urine.

12) A person with diabetes insipidus donates urine.

13) A person with acute kidney failure donates urine. (This person drinks normal amounts of water but makes only 400 ml urine a day)

14) A person with untreated high blood pressure donates urine.

15) A person with hepatitis donates urine.

16) A person with gallstones donates urine.