NEATH PORT TALBOT COLLEGE
COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science
Science Practical

Urine Analysis

◆ Aim

To carry out a number of tests to identify the main chemical components and properties of urine samples.

◆ Introduction

Urine tests are very useful for providing information about a wide range of diseases. A series of simple visual and biochemical tests can be used to identify protein, glucose and the pH of glucose.

◆ Safety

Control Measures

- The wearing of **safety goggles** and a **laboratory coat** at all times will be sufficient to take account of most hazards and significant risks.
- All waste is to be placed in the labelled container immediately after use.
- You are reminded of the need for good laboratory practice in order to maintain a safe working environment.

Hazards

Irritant Urine

Bio Hazard Urine

◆ Procedure

1. Examine the urine carefully by eye and nose. Comment on the colour of the urine. Try to use words like **yellow**, **amber**, **dark** and **pale**. Examine the sample for its odour (smell). Also note whether the sample is clear or cloudy. Note your observations in your Piddle Chart.

2. **Test for protein.**
   Next, find out if the sample contains protein (protein leaks into the urine if the kidneys are damaged). Divide the sample equally between two test tubes. Put one tube into the hot water bath, and leave the other at room temperature. After a few minutes, take the test tube out of the water bath, and compare the heated and unheated urine. If the heated sample is **cloudier**, it contains protein. Note your result in your Piddle Chart. Flush away the heated urine, and keep the unheated sample.

3. **pH testing.**
   Now you need to find out the pH of the unheated urine. Dip a piece of universal indicator paper into the urine. Quickly take it out, and leave it for 30 seconds. Compare the new colour with the pH colour chart, and note the pH number on your Piddle Chart.

4. **Testing for glucose.**
   The last test is to find out if the urine contains glucose, which may indicate that the patient has diabetes. Dip a Clinistix into the unheated urine sample, and immediately take it out. Count to ten, then check the colour with the colour chart. Record whether the urine is negative, light, medium or dark (dark means a lot of glucose).

Record your results for sample 0 in the table below:

Colour	
Odour	
Unheated	
Heated	
Universal indicator	
pH	
Clinistix result	

Record your results for samples 1 to 4, and the villain's sample, in the table below:

	Sample 1	Sample 2	Sample 3	Sample 4	Villain
Colour					
Odour					
Protein? ✓ or x					
pH					
Glucose?					

I think that sample…… belonged to the villain.