

## Weights and Volumes Conversion Quiz

Version: #01; January 13<sup>th</sup>, 2011.

This resource has been developed by the Ola During Children's / Princess Christian Maternity Hospitals, Freetown, Sierra Leone – Abertawe BroMorgannwg Health Board, Swansea, UK Link.

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This resource is one of a series developed to support clinical laboratories in low resource settings. These resources are available from the Ibadan-Swansea Partnership website: see <http://isp.swanah.org/>

We hope that this resource will be helpful in ensuring the quality of laboratory practice.

We are keen to further develop our resources so that they are as helpful as possible. Please do let us know of any comments, suggestions or feedback from using these resources. Please contact Angela Allen: [aallengm@yahoo.co.uk](mailto:aallengm@yahoo.co.uk)

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<b>Number:</b>	
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### Reminder

- 1ml = 1000  $\mu$ l
- 1g = 1000mg

1) Write down the missing weights in the empty boxes (1 mark for each)

	mg	=	g	Mark
A	1	=	<input type="text"/>	<input type="text"/>
B	43	=	<input type="text"/>	<input type="text"/>
C	<input type="text"/>	=	0.85	<input type="text"/>
D	<input type="text"/>	=	0.001	<input type="text"/>
E	1050	=	<input type="text"/>	<input type="text"/>

2) In the measurement of blood haemoglobin (Hb) concentration, 20 $\mu$ l of well-mixed blood is added to 2ml of 0.04% ammonia solution

		Mark
A	Write down the volume of blood used in millilitres (ml): <input type="text"/> ml	<input type="text"/>
B	Write down the volume of ammonia solution used in microlitres ( $\mu$ l) <input type="text"/> $\mu$ l	<input type="text"/>
C	What is the maximum volume (ml) that a SL1000 pipette can measure? <input type="text"/> ml	<input type="text"/>
D	What is 2ml + 20 $\mu$ l? <input type="text"/> $\mu$ l	<input type="text"/>
E	What is the total volume (ml) of blood + ammonia solution? <input type="text"/> ml	<input type="text"/>

**CLINICAL LABORATORY SERVICES DEVELOPMENT PROJECT**

3) In haemoglobin (Hb) electrophoresis, a lysate is prepared from washed, packed red cells using toluene and water (preferably distilled or de-ionised water). The required proportions are:

1 volume red cells : 1.5 volumes toluene : 1 volume water

Write down the required volumes in the following table. Give one mark for each box that is completed correctly.

	<b>volume red cells</b>	<b>volume of toluene</b>	<b>volume of water</b>	<b>Mark</b>
A	100µl	<input type="text" value=""/> µl	<input type="text" value=""/> µl	<input type="text" value=""/>
B	1ml	1.5ml	<input type="text" value=""/> µl	<input type="text" value=""/>
C	0.25ml	0.375 ml	<input type="text" value=""/> µl	<input type="text" value=""/>
D	200µl	<input type="text" value=""/> µl	<input type="text" value=""/> ml	<input type="text" value=""/>
E	<input type="text" value=""/> µl	3 ml	<input type="text" value=""/> µl	<input type="text" value=""/>

**Mark**

- |  |                               |                               |
|--|-------------------------------|-------------------------------|
| 4) What factor do you multiply milligrams (mg) to get micrograms (µg)?                             | <input type="text" value=""/> | <input type="text" value=""/> |
| 5) A patient sample has a haemoglobin concentration of 132 g/l. What is the concentration in g/dl? | <input type="text" value=""/> | <input type="text" value=""/> |

**Test total: /20**

**Good mark: 15 or more**

**Excellent mark: 18 or more**

**Signed:**

\_\_\_\_\_  
(Student)

\_\_\_\_\_  
(Assessor)