

Question number	Answer	Notes	Marks
5 (a)	<p>MP1. use balance to measure mass;</p> <p>MP2. use of measuring cylinder to measure volume;</p> <p>PLUS</p> <p>Any three from:</p> <p>MP3. ensure balance reads zero before placing rock;</p> <p>MP4. ensure balance is on a level surface;</p> <p>MP5. ensure rock is dry when measuring its mass</p> <p>MP6. recording volume before rock added to water</p> <p>MP7. finding difference in volume of water after rock added</p> <p>MP8. ensure rock is fully submerged;</p> <p>MP9. ensure no water is spilt / all water collected by measuring cylinder;</p> <p>MP10. read measuring cylinder at eye level / on a level surface;</p> <p>MP11. read to bottom of water meniscus;</p>	<p>marks can be awarded from candidate's diagram</p> <p>allow (weighing) scales</p> <p>reject scale</p> <p>allow measure mass before volume</p> <p>fill displacement can to 'top' or 'spout'/eq</p> <p>catch displaced volume when rock added</p> <p>ignore unqualified reference to 'avoid parallax'</p>	5
(b) (i)	density = mass / volume;	allow standard symbols and rearrangements e.g. $\rho = m / V$ allow d for density	1
(b) (ii)	<p>idea that different materials have different densities;</p> <p>correct evaluation of density for at least one rock;</p> <p>correct evaluation of density for all rocks;</p> <p>conclusion from density values that rock A is made from a different material (so student is correct);</p>	<p>A = 2.38 or 2.4 (g/cm³)</p> <p>B = 2.1(3) (g/cm³)</p> <p>C = 2.1(3) (g/cm³)</p> <p>ecf incorrect densities if candidate's conclusion is consistent</p>	4

Total for Question 5 = 10 marks