Question number	Answer	Notes	Marks
9 (a)	downward arrow labelled weight; upward arrow of equal length to downward arrow (by eye);	ignore starting position of arrows horizontal arrows allow <u>force</u> of gravity ignore label on upward force	2
(b) (i)	pressure difference = height x density x g	allow in standard symbols or in words e.g. $p = h \times \rho \times g$ condone d for density	1
(ii)	substitution; answer seen in pascals / conversion to kPa; e.g. (P =) 48 x 1030 x 10 (P =) 490 000 (Pa)	allow use of g=9.8 allow ÷1000 seen anywhere 1 mark max for RA allow 494 400, 500 000 (Pa)	2
(c) (i)	600 (kPa);	allow 594.4, 594, 590 (kPa) ecf from (b)(ii)	1
(ii)	substitution into $p_1V_1 = p_2V_2$; rearrangement; evaluation; e.g. $100 \times 24 = 600 \times V_2$ $V_2 = 100 \times 24 / 600$ (V_2 =) 4.0 (m^3)	ecf from (c)(i) -1 for POT error allow 2 marks max for use of 500 (kPa) as final pressure, giving 4.8 m^3 allow answers in range 4.0 - 4.1(m^3)	3

Total for question 9 = 9 marks