

S.3 WEEK 2

2. (a) (i) Define pressure and state its unit. (02 marks)
- (ii) Describe an experiment to show that pressure in a liquid increases with depth. (04 marks)
- (iii) Find the length of the mercury column in a simple barometer when the barometer is raised from sea level to a height of 2.5 km given that the average density of air is 1.2 kg m^{-3} and the density of mercury is 1.36 kg m^{-3} . (*Atmospheric pressure at sea level is 76 cm of mercury*). (04 marks)
- (b) A spring balance reads 2.42 N when a metal cube of side 3.0 cm is suspended in air from the spring balance.
- (i) Find the density of the metal. (03 marks)
- (ii) What will the spring balance read when the metal is completely submerged in a liquid of density 1200 kg m^{-3} ? (03 marks)