SELF ASSESSMENT QUESTIONS:

1 What instrument will you choose to measure height of your friend?

Ans: To measure the height of a friend, you can use a measuring tape or a ruler. If you have access to a measuring tape, it would be the most convenient and accurate tool for measuring height.

2 Can you describe how many seconds are there in a year?

Ans we know that one year would equal 365.3 days

$$1\ year = 365.3\ day \quad \{1\ day = 24\ hours\}$$

$$1\ year = 365.3 \times 24\ h \quad \{1\ h = 3600\ sec\}$$

$$1\ year = 365.3 \times 24 \times 3600\ seconds$$

$$1\ year = 31561920\ seconds$$

$$1\ year = 3.15 \times 10^{7}\ seconds$$

3 Which instruments will you choose to measure your mass?

Ans: Mass is always measured using a beam balance or physical balance. Another instrument commonly used to measure mass of solid is a digital scale.

4 Can you tell if the size of a nucleus is up to 10^{-15} m. What prefix shall we use to describe its size?

Ans the size of a nucleus is up to 10^{-15} m can be described using the femto prefix

5 How can you identify which gas is denser among the gases?

Ans For gases, density is directly proportional to molar mass at constant temperature and pressure. A gas with a molecular weight less than that of air will have a density less than air at the same temperature and pressure. For example helium has a molecular weight of 4 g/mol and hence it is less dense than air. Radon has a molecular weight of 222 g/mol hence it is more dense than air.

6 Can you tell how hot air balloon works?

Ans The balloon is made out of a special type of fabric that is very thin and light. It is shaped like a giant bag and has an opening at the bottom. When the pilot turns on the burner, the air inside the balloon gets hot and begins to rise.

7 Determine the number of significant figures in 00.6022009

Ans Seven significant figures.