## Practical Units.

(1) Length:

(i) 1 fermi = 1 fm =  $10^{-15}$  m (ii) 1 X-ray unit = 1XU =  $10^{-13}$  m (iii) 1 angstrom =  $1\text{\AA} = 10^{-10}$  m =  $10^{-8}$  cm =  $10^{-7}$  mm = 0.1 µmm (iv) 1 micron = µm =  $10^{-6}$  m (v) 1 astronomical unit = 1 A.U. = 1. 49 ×  $10^{11}$  m ≈  $1.5 × 10^{11}$  m ≈  $10^{8}$  km (vi) 1 Light year = 1 ly =  $9.46 × 10^{15}$  m

(vii) 1 Parsec = 1pc = 3.26 light year

## (2) Mass:

(i) Chandra Shekhar unit: 1 CSU = 1.4 times the mass of sun =  $2.8 \times 10^{30}$  L

10<sup>30</sup> kg

(ii) Metric tonne: 1 Metric tonne = 1000 kg

(iii) Quintal: 1 Quintal = 100 kg

(iv) Atomic mass unit (amu): amu =  $1.67 \times 10^{-27}$  kg mass of proton or neutron is of the order of 1 amu

(3) Time:

- (i) Year: It is the time taken by earth to complete 1 revolution around the sun in its orbit.
- (ii) Lunar month: It is the time taken by moon to complete 1 revolution around the earth in its orbit.

1 L.M. = 27.3 days

(iii) Solar day: It is the time taken by earth to complete one rotation about its axis with respect to sun. Since this time varies from day to day, average solar day is calculated by taking average of the duration of all the days in a year and this is called Average Solar day.

1 Solar year = 365.25 average solar day

Average solar day  $=\frac{1}{365.25}$  the part of solar year

(iv) Sedrial day: It is the time taken by earth to complete one rotation about its axis with respect to a distant star.

1 Solar year = 366.25 Sedrial day = 365.25 average solar day. Thus 1 Sedrial day is less than 1 solar day.

(v) Shake: It is an obsolete and practical unit of time.

1 Shake =  $10^{-8}$  sec