30.06.21 Ch-1 # Matter in our Surroundings

Home Assignment

1) Difference between Plasma and BEC giving examples

Plasma State	BEC (Bose-Einstein condensate)
① It has neither a definite volume nor a definite shape.	① Indian physicist Satyendra Nath Bose had done some calculations to see with matter in state.
② Plasma often is seen in ionized gases.	② Building on his calculations Albert Einstein predicted a new state of matter - the Bose-Einstein condensate.
③ Plasma is distinct from a gas because it possesses unique properties. Free electrical charges cause plasma to be electrically conductive	③ BEC is formed by cooling a gas of extremely low density.
④ Plasma may be formed by heating and ionizing a gas.	④ Bose-Einstein condensate refers to the collapse of atoms into a single quantum state.
⑤ Eg → Stars, lightning, inside the fluorescent	⑤ It is found at low temperatures when atoms are not able to move at all. Eg → Helium.

3. convert the following temperature measures:
473K = ____ deg Farenheight.

Ans)

$$F = \frac{9}{5}(K - 273) + 32$$

$$= \frac{9}{5}(473 - 273) + 32$$

$$= 9 \times 40 + 32$$

$$= 360 + 32$$

$$= 392\ ^\circ F$$