Chapter 14 - MEASURING INSTRUMENTS

1. Pitch = $\frac{\text{Distance travelled on the pitch scale}}{\text{No.of rotations of the head scale}}$
2. Least Count (L.C) = $\frac{\text{Pitch}}{\text{No.of divisions on the head scale}}$

Chapter 15 - LAWS OF MOTION AND GRAVITATION

1) $p = mv$

Where p is momentum

m is mass

v is velocity

SI unit of momentum is kg ms^{-1}

2) Rate of change of momentum = $\frac{\text{Change of momentum}}{\text{time}} = \frac{m(v-u)}{t}$

3) $F = ma$

Where F is Force and m is mass and a is acceleration

S.I unit of force is Newton

4) $m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$

5) Moment of force = F x d

The unit of moment of force is N m

6) $F = \frac{Gm_1m_2}{d^2}$

Where G is Gravitational Constant and its value is 6.673×10^{-11} Nm^2kg^{-2}

7) $g = \frac{GM}{R^2}$

Where g is gravity and R is radius of earth

Chapter 16 - ELECTRICITY AND ENERGY

1. $I = \frac{Q}{t}$

Where I is current and its Unit is Ampere (A)

Q is electric charge and its unit is Coulomb (C)

2. Potential difference (V) = $\frac{\text{Work done}}{\text{Charge}}$

Or

$V = \frac{W}{Q}$

S.I Unit of potential difference is volt (V)

3. $V = IR$

Where V is Potential difference and I is current and R is resistance

The Unit Of Resistance is Ohm

4. Resistors in Series

$R_s = R_1 + R_2 + R_3$

Resistors in parallel

$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

5. $Q = It$

Where Q is electric charge and I is current and t is time

6. $H = I^2Rt$

Where H is heat and its S.I. Unit is Joule

7. $P = VI$

Where P is Power and Its S.I Unit is Watt (W)

8. $E = mc^2$

Where E is energy and its Unit is Joule

M is mass and its unit is kg

c is speed of light and its value is 3×10^8 ms^{-1}

Chapter 17 - MAGNETIC EFFECT OF ELECTRIC CURRENT AND LIGHT

1) Mirror Formula

$1/v + 1/u = 1/f$

Where u is object distance

V is image distance

F is focal length

2) $\mu = \frac{\sin i}{\sin r}$

Where μ is refractive index and i is the angle of incidence and r is the angle of refraction

3) $R = 2f$

4) $m = \frac{\text{Height of the image } (h') }{\text{Height of the object } (h)} = \frac{v}{u}$

5) $P = \frac{1}{F}$

Where P is power of lens and its unit is Dioptre

6) Lens Formula

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$