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Class - 9A

School no - 2011

Subject - Physics

H.W
28.6.21

Q1) State Newton's 2nd law of motion
The rate of change of momentum of a body is directly proportional to the force applied in the same direction in which the force acts. The rate of change of momentum of a body can be obtained by dividing the "change in momentum" by time taken for change.

$$\text{Force} \propto \frac{\text{Change in momentum}}{\text{Time taken}}$$

Q2) Define force. Name the SI unit of force and define it.
Force are used in our everyday action like pushing, pulling, lifting, stretching, twisting and pressing. The SI unit of force is newton which is denoted by N. A newton is that force which

When a force acting on a body of mass 1 kg produces an acceleration of 1 m/s^2 in it.

$$F = m \times a$$

Putting $m = 1 \text{ kg}$ and $a = 1 \text{ m/s}^2$,
 F becomes 1 newton.

$$1 \text{ newton} = 1 \text{ kg} \times 1 \text{ m/s}^2$$