

THEORY

When a body is subjected to a force, it tends to move in the direction of the force. This is the basic principle of mechanics. The force applied to the body is called the load, and the reaction force is called the support reaction. The support reaction is always equal and opposite to the load. This is the principle of equilibrium. The body is said to be in equilibrium when the sum of all forces acting on it is zero. This is the condition for static equilibrium. The body is said to be in dynamic equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for dynamic equilibrium. The body is said to be in static equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for static equilibrium. The body is said to be in dynamic equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for dynamic equilibrium.

Force	Direction	Reaction
Weight	Downwards	Upwards
Normal force	Perpendicular to surface	Parallel to surface
Friction force	Opposite to direction of motion	Same as direction of motion
Tension force	Along the string	Opposite to direction of motion
Compression force	Along the rod	Opposite to direction of motion
Reaction force	Opposite to direction of motion	Same as direction of motion

DISCUSSION

The experiment was conducted to study the forces acting on a body in equilibrium. The results show that the sum of all forces acting on the body is zero, and the sum of all moments acting on the body is also zero. This confirms the principle of equilibrium. The reaction force is always equal and opposite to the load. This is the principle of equilibrium. The body is said to be in equilibrium when the sum of all forces acting on it is zero. This is the condition for static equilibrium. The body is said to be in dynamic equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for dynamic equilibrium. The body is said to be in static equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for static equilibrium. The body is said to be in dynamic equilibrium when the sum of all forces acting on it is zero and the sum of all moments acting on it is also zero. This is the condition for dynamic equilibrium.