

Gravitational force

1. The force that pulls falling objects towards the centre of earth is called
 - A. Air resistance
 - B. Acceleration
 - C. Gravity
 - D. Free fall
2. The region around a body where force of attraction is felt is called.....
 - A. Gravitational force
 - B. Gravitational field
 - C. Centre of gravity
 - D. Magnetic force
3. The force of gravity depends upon the
 - A. Mass and acceleration
 - B. Force and acceleration
 - C. Mass and the distance
 - D. Weight and force
4. The gravitational unit of force is.....
 - A. Newton
 - B. Kilogram force
 - C. Dyne
 - D. Metre
4. One newton is equal to....
 - A.
 - B. 10^{-5} dyne
 - C. 10^5 dyne
 - D. 10^{-7} dyne
 - E. 10^7 dyne
5. One kgf is equal to newton.
 - A. 9.8 N
 - B. 980N
 - C. 0.98N
 - D. 9800N
6. One gf is equal to..... dyne.
 - A. 9.8 N
 - B. 980N
 - C. 0.98N
 - D. 9800N
7. Which statement among the following is incorrect about the gravitational force?
 - A. On the earth's surface, gravitational force produces constant acceleration, $g = 9.81 \text{ m/s}^2$
 - B. The body with larger mass will have more gravitational force and larger gravitational field.
 - C. The gravitational force depends on the distance between the bodies.
 - D. The gravitational force between the two objects is affected by the presence of intervening masses.

Centre of gravity

1. Where is the centre of gravity of a ring situated?
 - A. At its centre
 - B. Its mid-point
 - C. Its geometric centre
 - D. Its axis

2. For an object which has definite geometrical shape and whose density is uniform throughout, will have its centre of gravity at it's.....

- A. At its centre
- B. Its mid-point
- C. Its geometric centre
- D. Its axis

3. The position of centre of gravity of a body depends on

- A. Distribution of the mass
- B. Area of the body
- C. Distribution of the weight
- D. Volume of the body

4. On increasing the area of base of the body, its stability will

- A. Remain same
- B. Increase
- C. Decrease
- D. Becomes zero

5. While climbing uphill, a man should

- A. Lean backward
- B. Lean forward
- C. Remain straight
- D. Keep his feet apart

6. The centre of gravity in the body is located where

- A. More mass is concentrated
- B. Less weight is concentrated
- C. More weight is concentrated
- D. Less mass is concentrate

Stability

1. The stability of the body depends on

- I. Position of the centre of gravity on the body
- II. Area of base of support
- III. Line of gravity due to the weight of the body
- IV. Weight of the body

- A. I, II & IV
- B. II, III & IV
- C. I, III & IV
- D. I, II, III

2. A retaining wall will topple if

- A. It is light
- B. It is less wide
- C. Its centre of gravity lies outside the base
- D. Its centre of gravity lies within the base

3. You are asked to load some heavy cartoons along with some light cartoons in a truck. Which cartoons should you load first?

- A. Light cartoons should be put first, then the heavy cartoons
- B. Heavy cartoons should be loaded first, then the light cartoons
- C. Both light and heavy cartoon should be mixed well
- D. Load the cartoons randomly in a truck

4. The centre of gravity of an object can be increased by

- | | |
|---|---|
| I. Increasing the area of base of support | III. Lowering the position of the centre of gravity |
| II. Increasing the position of the centre of gravity above the ground | IV. Decreasing the area of base of support |
- A. I and II
B. II and III
C. I and III
D. II and IV

Equilibrium

- A book lying on its base on the table is in

A. Stable equilibrium	C. Unstable equilibrium
B. Neutral equilibrium	D. equilibrium
- For the stable equilibrium the centre of gravity of the object must be at

A. Highest point	C. In the middle point
B. Lowest point	D. Outside the body
- For the unstable equilibrium the centre of gravity of the object must be at

A. Highest point	C. In the middle point
B. Lowest point	D. Outside the body
- Which is not the condition for the stable equilibrium from the following?
 - Body must have boarder base of support
 - Mass of the body must be large
 - Centre of gravity must be as low as possible within the body
 - Vertical line drawn from the centre of gravity must fall in between the base of support
- By keeping our legs apart from each other our body attains

A. More stable equilibrium	C. Neutral equilibrium
B. More unstable equilibrium	D. None of the above

Force and equilibrium

What brings about the motion of the body?

Unbalanced force

A body at rest or moving with uniform velocity will have acceleration equal to.....

To satisfy first conditions of equilibrium, if rightward force are positive, leftward force must be.....

Conditions for equilibrium

Algebraic sum of horizontal components of all the forces should be

Algebraic sum of moment of all the forces about a point must be

If a body is at rest or in uniform velocity, it is said to be in

Change in the state of rest or uniform motion of the body is brought about by the

If the sum of all the force acting on the body is zero then the body is in

If the acting on moving body is zero then the body remains in Equilibrium.

Couple

1. Opening of the tap is an example of

A. couple

B. moment of force

C. moment of couple

D. torque

2. A pair of force that causes steering wheel of a car to rotate is called

A. couple

B. moment of force

C. moment of couple

D. torque

3. The turning effect of a couple is called

A. Moment

B. Torque

C. Couple

D. Moment of couple

4. The product of force and the couple arm determines

A. couple

B. moment of force

C. moment of couple

D. torque

5. The moment of couple is depended on

I. Magnitude of the applied force

II. Magnitude of the moment produces

III. Magnitude of the couple arm

IV. Magnitude of the moment arm

A. I and II

B. II and III

C. III and IV

D. I and III

6. 1 Nm is equivalent to

A. 10^{-5} dyne cm

B. 10^5 dyne cm

C. 10^{-7} dyne cm

D. 10^7 dyne cm