Physics (New Book) - 9th Class Physics English Medium Chapter 4 Preparation

Q1. Define torque

Ans 1: Turning effect of a force is called torque or moment of force

Ans 2: Unit: Its unit is newton metre (Nm)

Q2. Define equilibrium and give its example

Ans 1: Equilibrium: A body is said toi be in equilibrium if no net force acts on it

Ans 2: Examples: A book lying on a table is equilibrium because the weight of book and force of reaction of table are in opposite direction and hence cancel their effect.
Consider a log of wood of weight W supported by two ropes Here the W is balanced by two forces f1 and f2 pulling the log upwards

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Q3. Differentiate between torque and couple

Ans 1: Torque: Turing effect of force is called torque .
To produce a torque we need only one force at least
Torque or moment of force is equal to product of force F and moment arm L

Ans 2: Couple Couple is formed by the two unlike parallel forces of the same magnitude but not along the same line
To produce a couple we need two unlike parallel forces at least
The torque of a couple is equal to product of any force of couple and perpendicular distance between them

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Q4. At which point an applied force does not produce rotation

Ans 1: A force applied at the centre of mass of a body does not produce any rotation rather the body moves in the direction of applied force

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Q5. Define Resolution of forces

Ans 1: Forces into their component forces is called resolution of forces

Ans 2: Perpendicular components: The components of a vector which make an angle of 90 with each other are called perpendicular components.

Ans 3: Direction of force F: The direction of force F with X-axis is given by using the trigonometric ratio.

Q6. Define Centre of mass of a body

Ans 1: Centre of mass: The point where when the force is applied, the system move without rotation is called centre of mass.

Ans 2: Centre of gravity: A point where the whole mass of body appears to act vertically downwards
Example: Center of round plate is its center of gravity

Q7. Why a body does not regain its previous state in unstable equilibrium

Ans 1: Because in this state centre of gravity of body is at highest position.

Q8. Differentiate between like and unlike forces.

Ans 1: Like parallel forces: such a parallel forces whoe direction is same are called like parallel force. Example: the weights of apples in a sack are parallel to each other and also in the same direction.

Ans 2: Unlike parallel forces.:Such parallel forces which are opposite to each other are called unlike parallel forces. Example: Two forces acting on a steering wheel to turn it are unlike parallel forces.

Q9. Can force be added by ordinary addition of number

Ans 1: No, forces cannot be added by ordinary addition of number They can be added by head to tail rule because force is vector quantity

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Q10. Why the height of vehicles is kept as low as possible

Ans 1: The height of vehicles is kept as low as possible to make them more and more stable because stability increased as height of vehicle decrease.

Ans 2:
