

## Physics - FSC Part 1 Physics Chapter 2 Short Questions Preparation

Q1. Explain why do buses and heavy trucks have large steering wheels ?

**Ans 1:** We know that the magnitude of torque depends upon the moment arm and applied force  $T = r \cdot f$   
Show that to produce greater torque with a less applied force, the value of moment arm 'r' must be taken as larger due to greater torque, we can turn the heavy trucks and buses have large steering wheels to produce greater torque and to make the drive more easy.

Q2. What is the minimum number of unequal vector in to a null vector? Explain

**Ans 1:** The minimum number of unequal vector to result in to a null vector must be three. If we add three vector of unequal magnitude in such a way that they forms the sides of a triangle, then their resultant must be zero.  
In the given figure three vectors A, B, and C are added according to head to tail rule and they form the side of a triangle. Now for getting their resultant, we will combine the tail of A with the head of C which already coincides each other. Thus we get a null vector or zero vector as a resultant  
 $R = A + B + C = 0$

Q3. The resultant of two vector, one is double in magnitude than the other, perpendicular to the smaller force. What is the angle between the two forces ?

**Ans 1:**

Q4. Define null vector and component of a vector.

**Ans 1:** Null Vector is a vector of zero magnitude and arbitrary direction.  
A component of a vector is its effective vale in a given direction.

Q5. What are coplanar and concurrent forces?

**Ans 1:** All the forces lying in the same plane are called coplanar forces.  
All the forces acting on the same point are called concurrent forces.

Q6. Differentiate between static and dynamic equilibrium.

**Ans 1:** Static Equilibrium: If a body is at rest, then it is said to be in static equilibrium.  
Dynamic Equilibrium: If the body is moving with uniform velocity, then it is said to be in dynamic equilibrium.

Q7. Define torque. Write its units and dimensions,

Ans 1:

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Q8. Define the following?

1. Parallel vectors
2. Equal vectors
3. null vectors
4. Anti parallel vectors
5. Negative of a vectors

**Ans 1: Parallel Vectors:** Vectors are said to be parallel to each other if they are acting in the same direction.

**Anti Parallel Vectors:** Vectors are said to be anti parallel to each other if they are acting in opposite direction.

**Equal vectors:** Two vectors are said to be equal, if they have the same magnitude and same direction.

**Negative of a vector:** Negative of a vector is that vector whose magnitude is the same to that of the given vector but opposite in direction.

**Null Vector:** A vectors whose magnitude is zero is known as null vector.

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Q9. Define and explain position vector ?

Ans 1:

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Q10. What are rectangular components of a vector?

**Ans 1:** The components of a vector which are perpendicular to each are called rectangular components.

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