Physics - ICS Part 1 Physics Chapter 2 Short Questions Test

Q1. 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.

Q2. Define position vector and resultant vector.

Ans 1: Position Vector: A vector which describes the location of a point with respect to origin is called position vector.

Resultant Vector: A Single vector which would have the same effect as all the original vectors taken together.

Q3. How would the two vectors of the same magnitudes have to be oriented,if they were to be combined to give a vector of the same magnitude?

Ans 1: The two vectors of equal magnitudes are combined to give a resultant vector of same magnitude when must be oriented at an angle of 120^0 With each other.

Q4. Why can a vector not have a component greater than the vectors magnitude?

Ans 1: The magnitude of the components of a vector can not be greater than the vectors magnitude because component is always a part of the resultant vector. This relation show that if any two components of a vector are zero then the magnitude of the third components may be equal to the vectors magnitude but it can never be greater.

Q5. Explain how cranes are able to light very heavy load without toppling ?

Ans 1: We know that object with a high centre of gravity are likely to be unstable . For this reason, the bases of the cranes are made low and heavy, so that centre of gravity remains low.
The torque produced by a heavy load lifted by a crane is counterbalanced by its heavy body and large moment arm. Thus the cranes do not topple when they carry heavy loads.

Q6. Two vectors have unequal magnitude.Can their components be equal in magnitude?

Ans 1: No, the components of two vectors cannot be equal in magnitude if the two vector have unequal magnitudes.

Q7. Can you add zero to a null vector?

Ans 1: No, zero can't be added to a null vector because zero is a scalar and scalars can't be added to vectors Only the physical quantities of same nature can be added.

Q8. Explain with the help of an example what is the rang of possible values of the resultant of two vector ?

Ans 1:

Q9. 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.

Q10. Discuss the addition of vector by rectangular component method?

Ans 1: