Questions:

1. Define a vector quantity with an example.
2. What is the formula for the magnitude of a resultant vector in two-dimensional motion?
3. State the triangle law of vector addition.
4. How is the direction of a vector represented in a plane?
5. Write the formula for the horizontal range of a projectile.
6. Define uniform circular motion.
7. What is the relationship between angular velocity and linear velocity?
8. State the conditions for the equilibrium of a particle in a plane.
9. What is the unit vector, and how is it represented?
10. Write the equation for the maximum height reached by a projectile.

Key Answers:

1. A vector quantity has both magnitude and direction. Example: Velocity.
2. $\sqrt{A^2 + B^2 + 2AB\cos\theta}$, where A and B are magnitudes, and θ is the angle between vectors.
3. If two vectors are represented by two sides of a triangle taken in order, their resultant is given by the closing side of the triangle taken in the opposite order.
4. By its angle with the reference axis or using the direction cosines.
5. $R = \frac{u^2 \sin 2\theta}{g}$, where u is the initial velocity, θ is the angle, and g is the acceleration due to gravity.
6. Motion along a circular path with constant speed.
7. $v = r\omega$, where v is linear velocity, r is the radius, and ω is angular velocity.
8. The net force and net torque acting on the particle must be zero.
9. A unit vector has a magnitude of 1 and is represented as $\hat{A} = \frac{\vec{A}}{|\vec{A}|}$, where $\vec{A}$ is the vector.
10. $H = \frac{u^2 \sin^2\theta}{2g}$.

Let me know if you need these in a specific format or additional questions!