**Gulistan Academy**

Physics (11th) Max.Marks = 40

Chapter No.2 (Vectors and Equilibrium) Pass Marks = 20

**Time Allowed = 1 Hour**

**Question No.1: Give short answers. (2x12 = 24)**

1. *Differentiate between vectors and scalars.*
2. *When two vectors are said to be equal?*
3. *How can you determine a vector from its rectangular components?*
4. *A force* *units, has its point of application moved from point A (1,3) to the point B (5,7). Find the work done.*
5. *The vector sum of three vectors gives a zero resultant. What can be the orientation of the vectors?*
6. *If one of the rectangular components of a vector is not zero, can its magnitude be zero? Explain.*
7. *If* ***,*** *What can you say about the components of the two vectors?*
8. *Is it possible to vector quantity to a scalar quantity? Explain.*
9. *Two vectors have unequal magnitudes. Can their sum be zero? Explain.*
10. *Suppose the sides of a closed polygon represent vector arranged head to tail. What is the sum of these vectors?*
11. *Name the three different conditions that would make* ***12.***
12. *Can a body rotate about its centre of gravity under the action of its weight?*

**Question No.2: (5+3 = 8)**

1. *What is the Vector Product of two vectors? Write some of its properties.*
2. *Find the projection of vector* ***A*** *= 2****i*** *- 8****j*** *+* ***k*** *in the direction of the vector* ***B*** *= 3****i*** *- 4 j - 12****k****.*

**Question No.3: (5+3 = 8)**

1. *What do you mean by the Term Torque? Derive expression for the Torque produced in a rigid body.*
2. *A load is suspended by two cords as shown in the figure.*

*Determine the maximum load that can be suspended at P, If* ***60o  20o***

*Maximum breaking tension of the cord used is* ***50 N.***

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