**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.3 (Dynamics) Pass Marks = 20

Time Allowed = 1 Hour

**Question No.1: Give short answers. (122 = 24)**

1. *Differentiate between* ***mass*** *and* ***weight****.*
2. *What is the law of inertia?*
3. *Why is it dangerous to travel on the roof of a bus?*
4. *If action and reaction are equal and opposite in direction then how a body moves?*
5. *What is the importance of the law of conservation of momentum?*
6. *When a gun fires, it recoils. Why?*
7. *Why the rolling friction is less than the sliding friction?*
8. *What will be the* ***time*** *required to produce a* ***22 Ns*** *change in momentum by a force of* ***20 N****?*
9. *Define momentum. Also write its expression and units.*
10. *A force produces an acceleration of* ***10 ms-2*** *in a mass of* ***5 kg****. What will be the amount of acceleration produced by this force in a mass of* ***8 kg****?*
11. *Differentiate between Centripetal and Centrifugal forces.*
12. *Write a short note on Cream Separator.*

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

1. *Derive the expression for the acceleration and the tension in the string when the objects attached to the string are in vertical motion.*
2. *The weight of a body is* ***20 N****. What will be the force needed to take it vertically up with a uniform acceleration of* ***2 ms-2****?*

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

1. *What is the law of conservation of momentum? Explain it by taking the example of a rifle and a bullet.*
2. *What will be the force of friction between a wooden block of* ***5 kg*** *and a stone of Calcium Carbonate? The value of coefficient of friction between wood and Calcium Carbonate is* ***0.6****.*