**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.5 (Gravitation) Pass Marks = 20

Time Allowed = 1 Hour

**Question No.1: Give short answers. (12x2 = 24)**

1. *What do you mean by Gravitational Force?*
2. *Do you attract the Earth or the Earth attracts you? Explain.*
3. *What is Field Force?*
4. *What do you mean by the strength of gravitational field?*
5. *What is the importance of the law of gravitation?*
6. *The value of is different at different places. Why?*
7. *How the value of changes with altitude?*
8. *What are artificial satellites?*
9. *How the law of gravitation of newton is helpful in understanding the motion of satellites?*
10. *Why the communication satellites are sent to geostationary orbits?*
11. *The two lead balls each of mass* ***1000 kg*** *are at* ***1 m*** *apart. Find the gravitational force between them by which they attract to each other.*
12. *At what height the value of* *becomes one fourth of its value on the surface of the Earth?*

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

1. *Calculate the mass of the Earth by first deriving the expression for it.*
2. *The gravitational force; between the two similar lead balls,* ***1 m*** *apart, is* ***0.006673 N****. Find their masses.*

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

1. *Derive the expression for the orbital speed of Artificial Satellite. Also calculate the orbital speed of artificial satellite near the surface of the Earth.*
2. *A communication satellite is* ***42000 km*** *high from the surface of the Earth. Find its orbital speed.*