Class Test (SET 6), Course PHY 103: Electromagnetism and Optics Answer the following questions. Total marks 10, Time: 40 minutes.

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| 1. | What is the unit of Electric charge explain it. | 2 |
| 2. | State explain Coulomb’s Law. | 2 |
| 3. | Four equal charges q = 6×10−6 C are situated at the corners of a square as shown in the above diagram. What is the net force on the test charge  Q =6×10−6 C at the center? | 4 |
| 4. | Consider an infinitely long, very thin metal tube with radius *R*=2.90 cm. The above figure shows a section of it. If the linear charge density of the cylinder is *λ*=1.50×10-8 C/m, what is the approximate magnitude of the electric field at radial distance *r*=2*R*? | 2 |