Kafrelsheikh University **Faculty of Education** **2nd year Mathematics and basic science** **Special program**	**Research topics** **Second Term 2019-2020**	**Subject: Solid Analytic Geometry**

Write on one topic of the following in not less five pages:

1- Define three dimensional rectangular coordinates with giving examples.
2- Find direction cosines of a line and the angle between two lines.
3- Deduce the parametric and the Cartesian equations for the plane.
4- Write the Intercept Form and give examples to show how to reduce to the intercept form.
5- Find the normal form of the plane with all special cases.
6- Deduce the angle between two planes and the perpendicular distance from a plane to a point.
7- Find all forms of the line in three-dimensional space.
8- Talk with examples about: Traces, the Cylinder.
9- Talk with examples about: The cone, the Sphere, the Ellipsoid.
10- Talk with examples about: the Hyperboloid of two sheets, the Elliptic Paraboloid, The Hyperbolic Paraboloid.

Dr. Roshdey Mareay