

Name Usama Khurshid

ID 7983

Section B

Subject Differential Equation

Assignment -

Applications of Partial Differential Equations:

Partial Differential Equations are used to formulate problems involving functions of several variables, and are either solved by hand or used to create a computer model.

1) It can be used to describe a wide variety of phenomena (can be formalized) such as sound, heat, diffusion, electrostatics, electrodynamics, fluid dynamics, elasticity, gravitation and quantum mechanics. These seemingly distinct physical phenomena can be formalized similarly in terms of PDE.

*1)- It can be used mathematically formulate, and thus aid the solution of physical and other problems involving functions of several variables such as the Propagation of heat or sound.

*1)- The theory of partial equations stems from the intensive and extensive study of a few basic equations of mathematical physics.

*1)- Such equations arise in the study of gravitation, electromagnetism, perfect fluids, elasticity, heat-transfer and quantum mechanics.