

## Phys102 Assignment Cover Sheet

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_ Mark: \_\_\_\_\_

Student ID: \_\_\_\_\_ Date: \_\_\_\_\_

### Phys102 Written Assignment #3

Due Friday Oct 1, 10:30am.

Textbook (Giancoli, SFU edition), page 605, question #61.

- 61.** A sphere of radius  $r_0$  carries a volume charge density  $\rho_E$  (Fig. 22–46). A spherical cavity of radius  $r_0/2$  is then scooped out and left empty, as shown. (a) What is the magnitude and direction of the electric field at point A? (b) What is the direction and magnitude of the electric field at point B? Points A and C are at the centers of the respective spheres.

(Hint: The charged object can be considered as equivalent to the combination of a positively charged solid sphere and a small negatively charged solid sphere.)

