



Space Debris

Part A. Rotation (3.8 points)

A.1 (0.2 pt)

$$\omega_x =$$

$$\omega_y =$$

A.2 (0.4 pt)

$$E_x =$$

$$E_y =$$

$$E(L, \theta) =$$

A.3 (1.2 pt)

$$\psi =$$

A.4 (2.0 pt)

$$\omega_{sx1}(t) =$$

$$\omega_{sy1}(t) =$$

$$\Omega(t) =$$

Part B. Transient process (1.6 points).

B.1 (0.6 pt)

$$\theta_2 =$$

B.2 (0.6 pt)

$$\omega_2 =$$

**Part C. Magnetic Field (4.6 points).****C.1** (1.0 pt)

$$\mu_x =$$

$$\mu_y =$$

$$\mu_z =$$

C.2 (0.3 pt)

$$M_x =$$

$$M_y =$$

$$M_z =$$

C.3 (0.4 pt)

$$B_{EX} =$$

$$B_{EY} =$$

$$B_{EZ} =$$

C.4 (1.3 pt)

$$M_x(u) =$$

$$M_y(u) =$$

$$M_z(u) =$$

C.5 (1.0 pt)

$$\omega(t) =$$

C.6 (1.0 pt)

$$T/T_s =$$