

Physics of Spin (10 points)

Part A. Larmor Precession (1.6 points)

Question	Answer	Marks
1. 0.8 pts		
2. 0.8 pts	$\omega_0 =$	

Part B. Rotating Frame (3.4 points)

Question	Answer	Marks
1. 0.8 pts		
2. 0.4 pts	$\Delta =$	
3. 1.2 pts		
4. 1.0 pts	$\mathbf{B}_{eff} =$ $\overline{\mathbf{B}_{eff}} =$	

Part C. Rabi Oscillation (3.0 points)

Question	Answer	Marks
1. 1.2 pts	$\Omega =$	
2. 0.6 pts	$\alpha =$	
3. 1.2 pts	$P_{\uparrow} = \frac{N_{\uparrow}}{N} =$ $P_{\downarrow} = \frac{N_{\downarrow}}{N} =$	

Part D. Measurement incompatibility (2.0 points)

Question	Answer	Marks
1. 1.0 pts		
2. 1.0 pts		