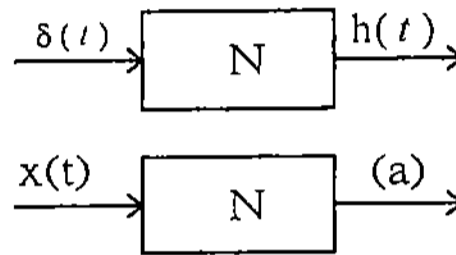


大葉大學九十一學年度碩士在職專班招生考試試題紙

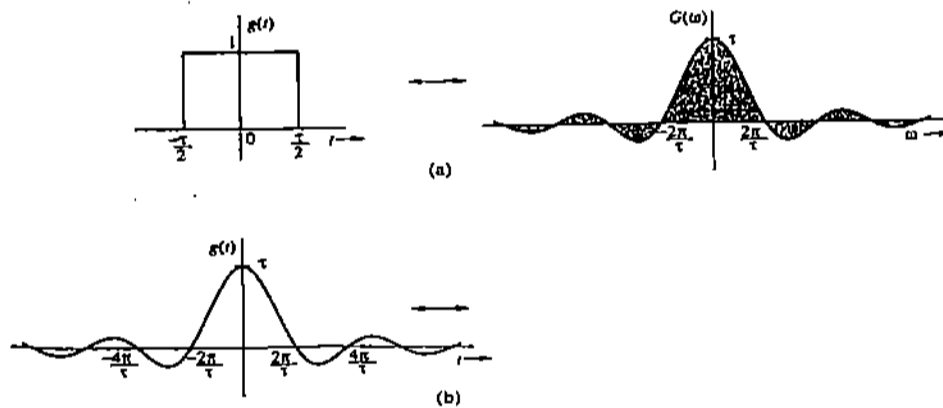
系 所	組 別	考 試 科 目 (中 文 名 稱)	考 試 日 期	節 次	備 註
電信工程研究所碩士在職專班	乙組	通訊原理	4月14日	第一節	共兩頁 P2-1

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶）

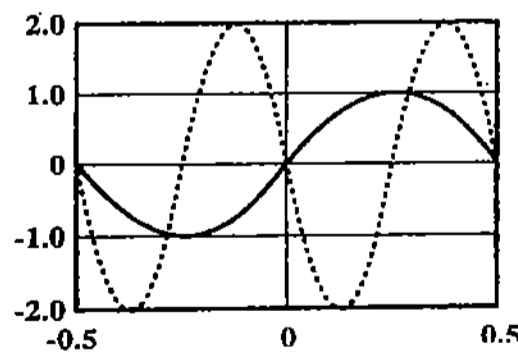
1. (10%) Let N be a linear electric network without initial stored energy, δ be the unit-impulse function and x be a (time domain) forcing function. State the responses observed at output (a).



2. (10%) Given the Fourier transform pair of figure (a) below, sketch the transform of (b).



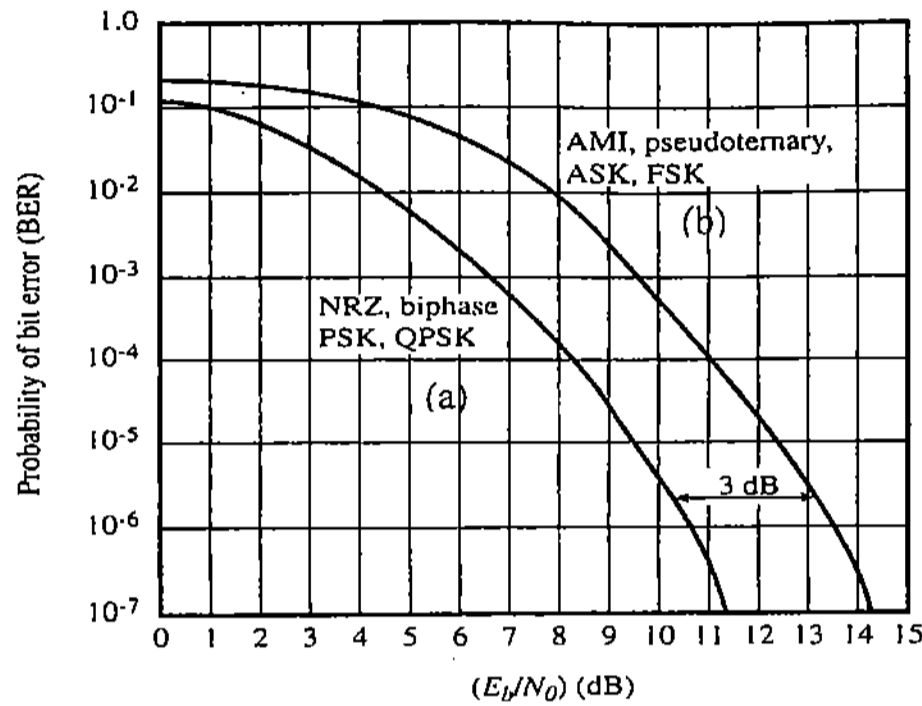
3. (10%) If the solid curve in the following figure represents $\sin(2\pi t)$, what does the dotted curve represent?



4. (20%) Evaluate the following integral,

$$\int_{-\infty}^{+\infty} e^{j\omega t} d\omega$$

5. (10%) Let $u(t)$ be the unit step function, sketch the graph of $u(5-t)$.
6. (20%) The average power P_g for a real signal is defined by $P_g = \lim_{T \rightarrow \infty} \frac{1}{T} \int_{-T/2}^{T/2} g^2(t) dt$. Determine the power and the rms value of $g(t) = C \cos(\omega_c t + \theta)$, where $C > 0$.
7. (20%) A theoretical Bit Error Rate (BER) for various encoding schemes is given below.



- (a) What are the definitions of E_b ? And N_0 ?
- (b) In general, to achieve a lower BER value, does one increase or decrease the (E_b/N_0) dB value?