

بسم الله الرحمن الرحيم

King Fahd University of Petroleum and Minerals
Department of Electrical Engineering

Semester II 2006/2007

Electronics II EE303

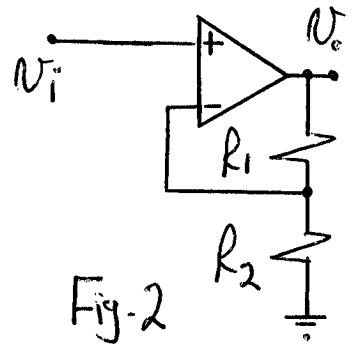
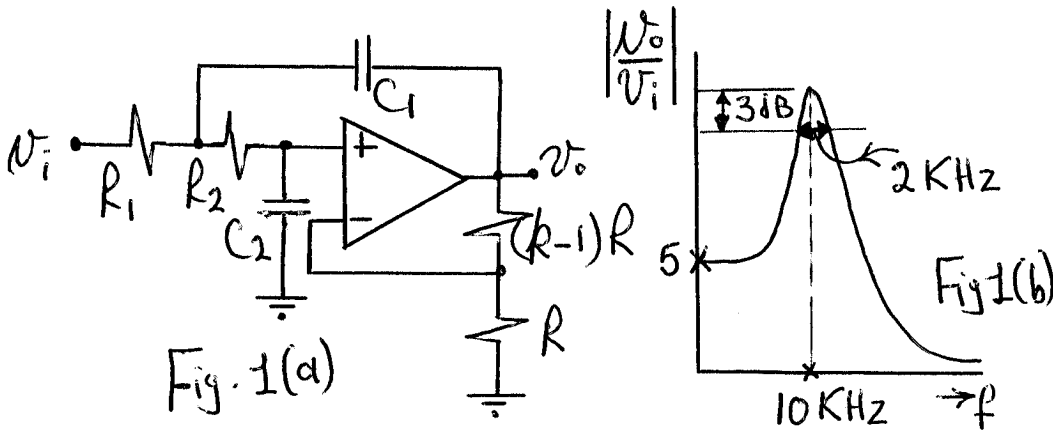
Major (2)

ATTEMPT ALL QUESTIONS
TIME ALLOWED 50 MINUTES

Q1. For the circuit shown in Fig. 1(a) select values of the resistors and capacitors to satisfy the transfer function shown in Fig. 1(b)

Q2. Using **ideal** operational amplifier(s), design an amplifier with gain = +20, input resistance = ∞ . **REMEMBER THAT A GOOD DESIGN USES THE MINIMUM NUMBER OF ACTIVE AND PASSIVE COMPONENTS.**

Q3. Obtain an expression for the output voltage of the circuit of Fig. 2. **DO NOT IGNORE THE BIASING CURRENT OF THE INVERTING INPUT.**



$$\frac{V_o}{V_i} = \frac{K / C_1 C_2 R_1 R_2}{s^2 + s \left[\frac{1}{C_1 R_1} + \frac{1}{C_1 R_2} + \frac{1-K}{C_2 R_2} \right] + \frac{1}{C_1 C_2 R_1 R_2}}$$

For Fig. 1(a)
