

銘傳大學 97 學年度研究所碩士班招生考試

電子工程學系碩士班

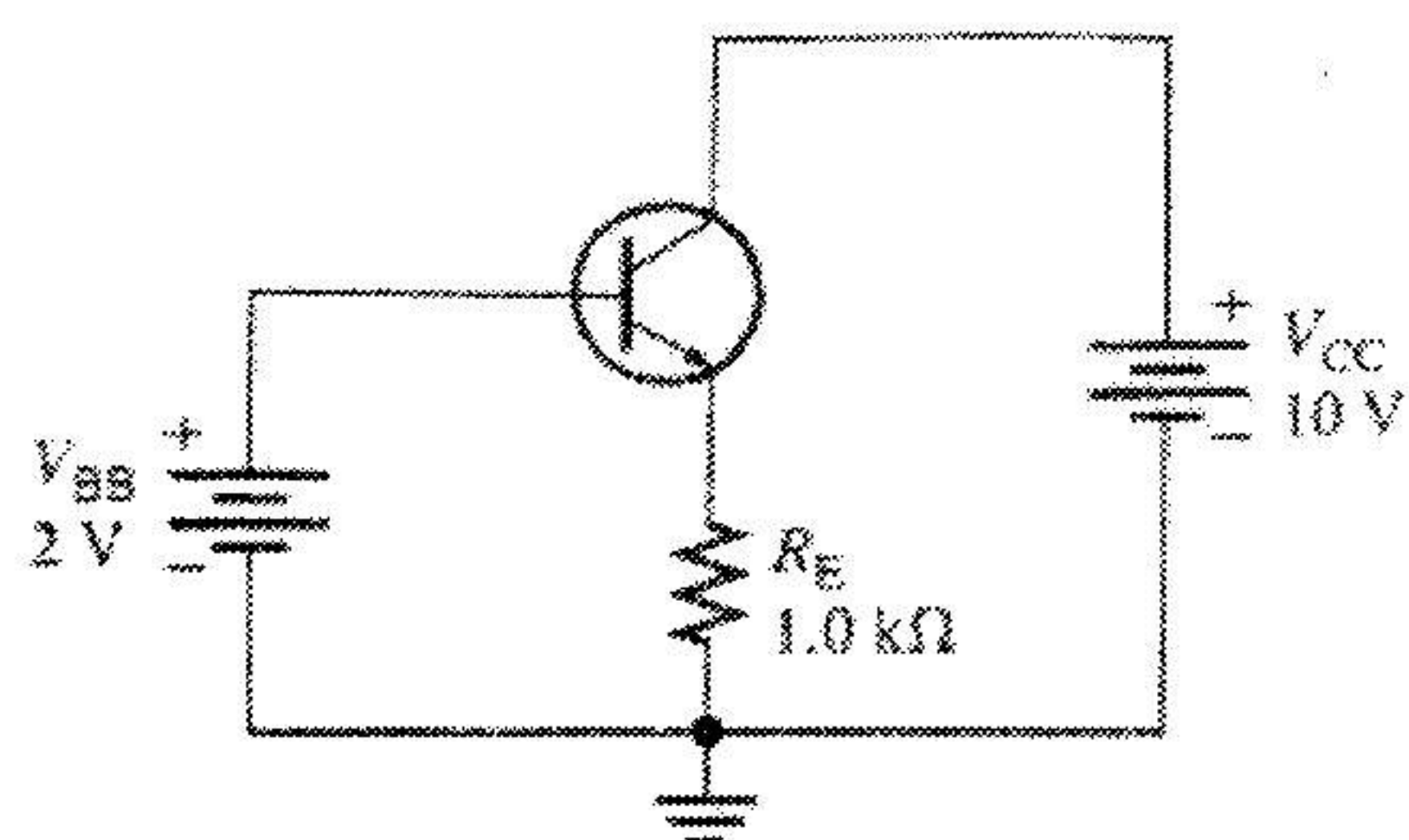
電子學試題(第三節)

(第 1 頁共 2 頁) (限用答案本作答)

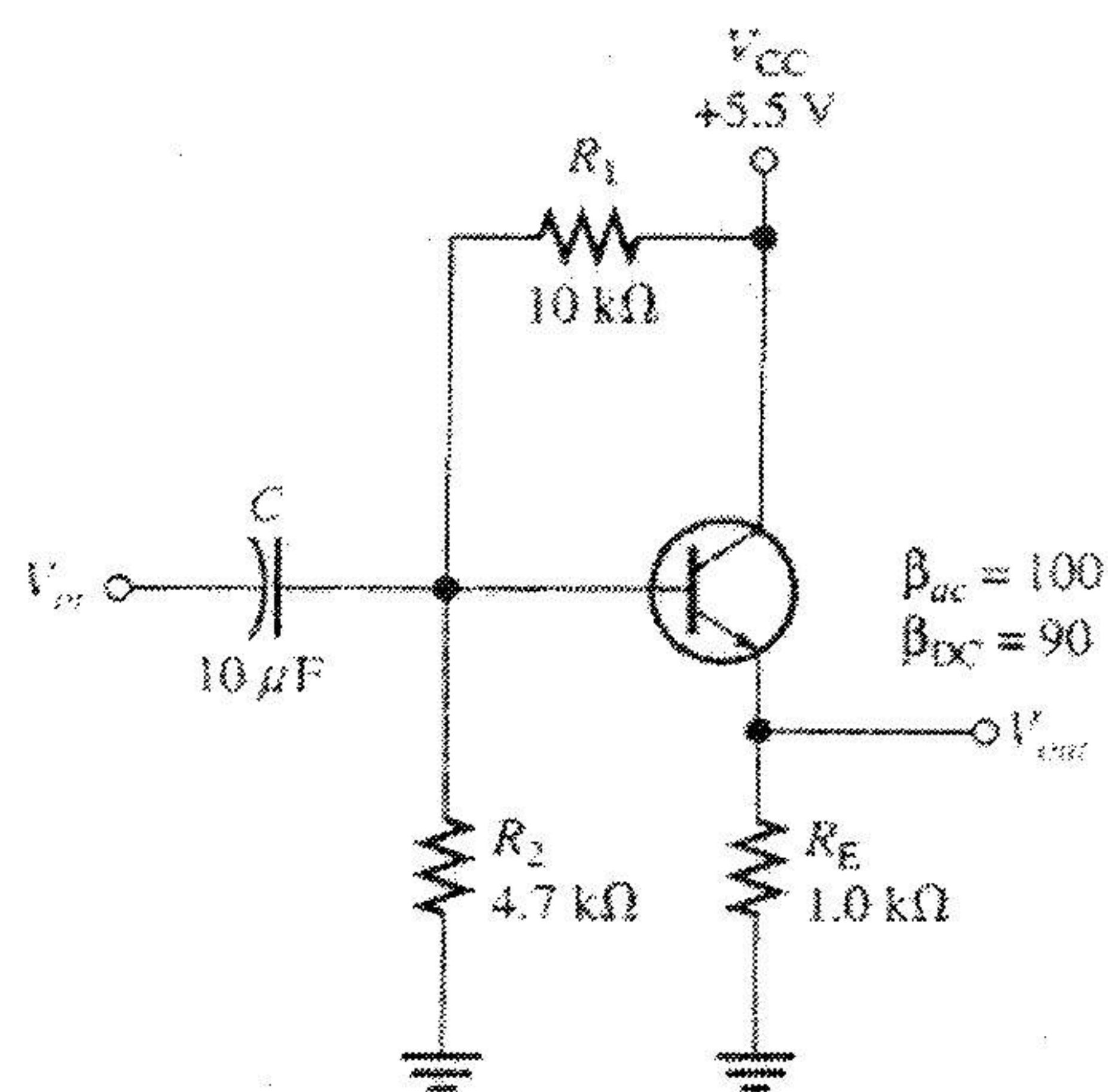
☐ 可使用計算機 ☐ 不可使用計算機

可使用計算機

1. (20%) Find $I_B = ?$ $I_C = ?$ $I_E = ?$ $V_{CE} = ?$ $\alpha = 0.98$, $\alpha = \frac{\beta}{1 + \beta}$



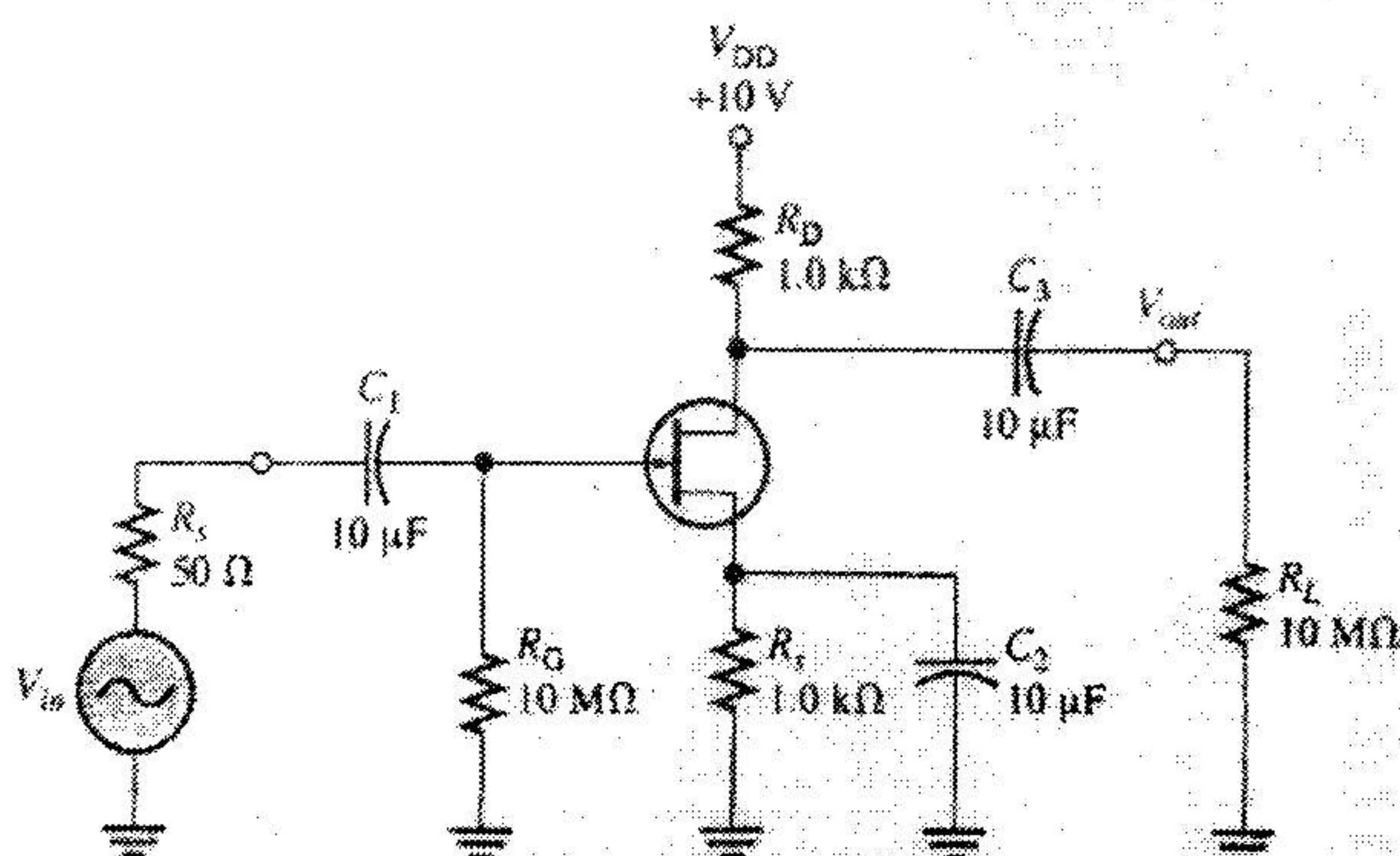
2. (20%) Find $R_{in(tot)} = \underline{\hspace{2cm}}$; $A_v = \underline{\hspace{2cm}}$;



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3. (20%) For the value $C_{iss} = 8\text{pF}$, $C_{rss} = 3\text{pF}$,
and $g_m = 6500\mu\text{S}$,

- (1) the voltage gain at midrange
- (2) the input critical frequency of internal capacitance
- (3) the output critical frequency of internal capacitance
- (4) show the high frequency response of the amplifier with Bode plot



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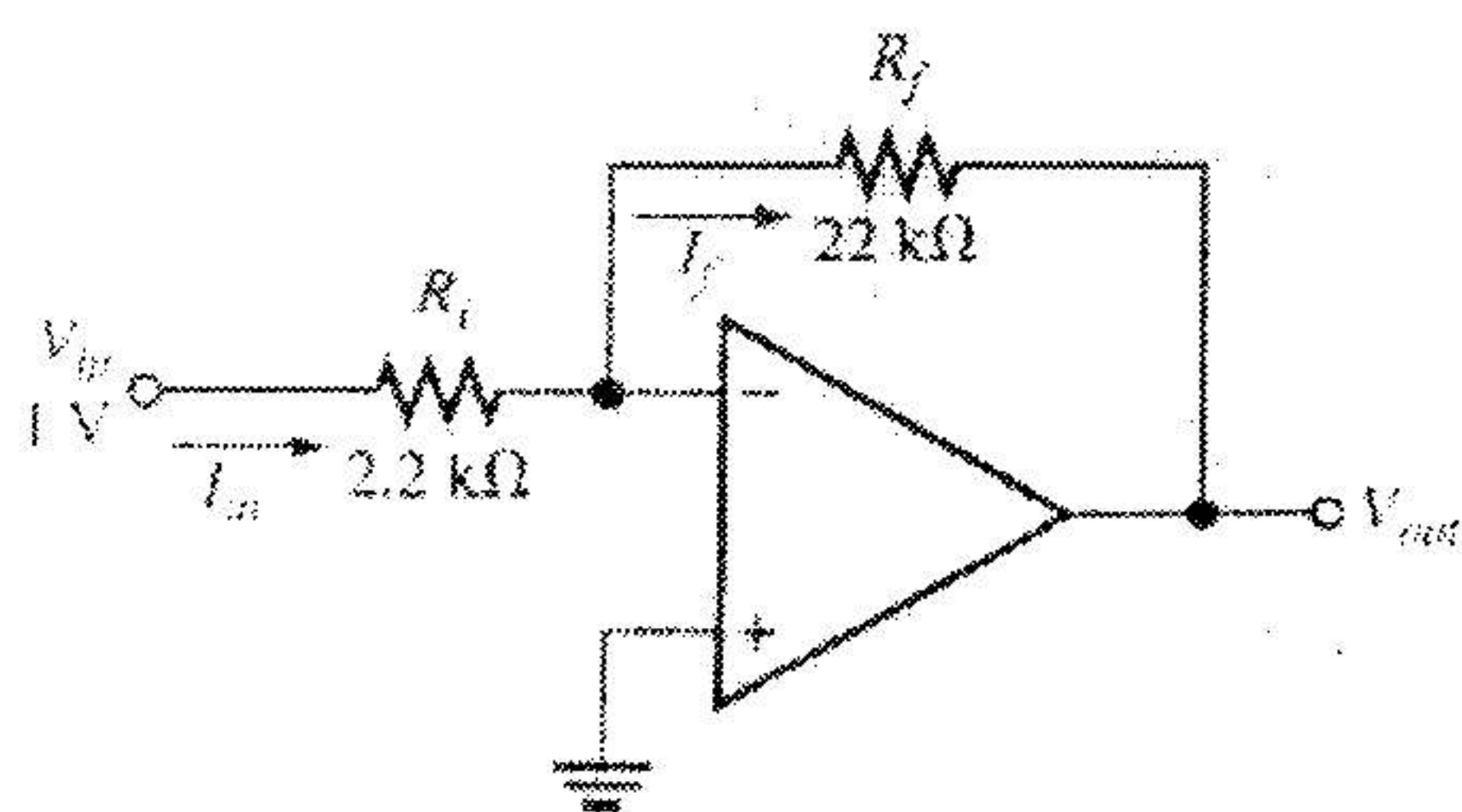
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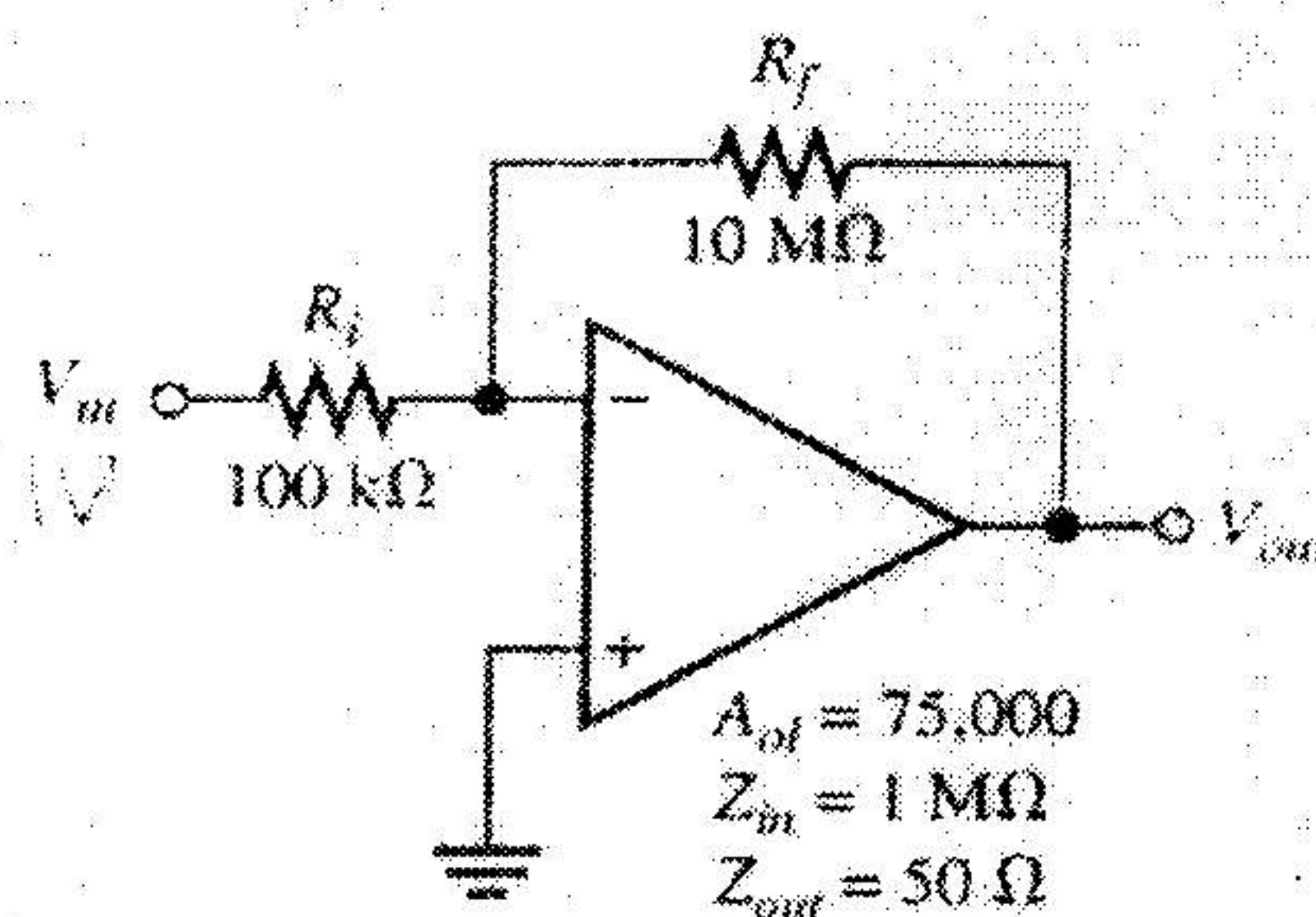
(第二頁共二頁)(限用答案本作答)

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4. (20%) Determine the V_{out} of the figures.

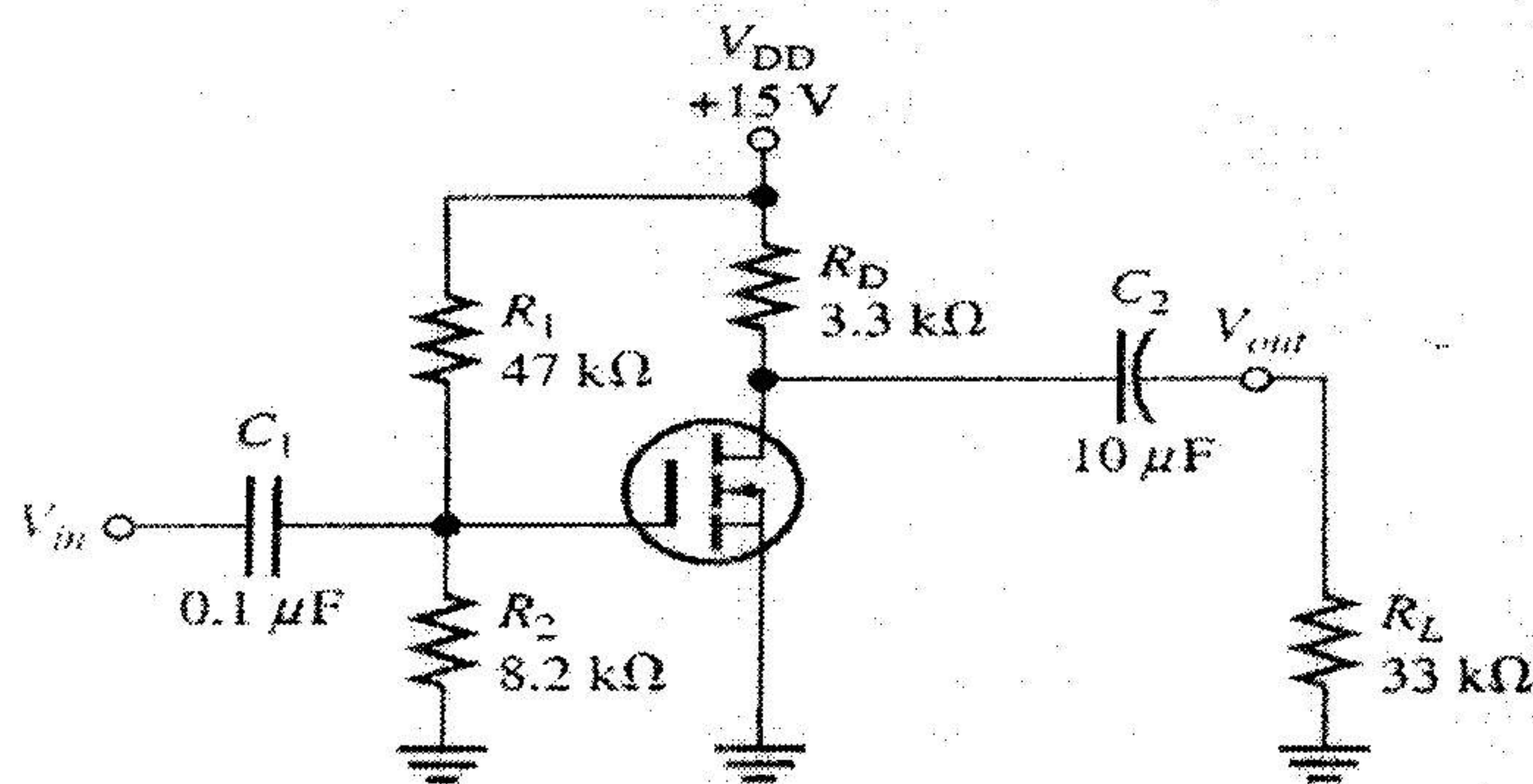


(a)



(b)

5. (20%) A common-source amplifier is as shown. Find I_D and the ac output voltage. Assume $I_{D(on)} = 200\text{ mA}$, at $V_{GS} = 4\text{ V}$, $V_{GS(th)} = 2\text{ V}$, and $g_m = 23\text{ mS}$. $V_{in} = 25\text{ mV}$.



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試題完