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COURSE :- ECD

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Q No :- 3

Part :- (a)

Negative Feed back

Negative feed back is the process where by a portion of output voltage of an amplifier is returned to the output with a phase angle that opposes (subtract from) the input signal. Negative feed back in op amp.

Concept :-

An amplifier we have with a very large number and the output of the amplifier is extremely high than the input. So we take connect from the output to the input for stabilization because it

has very high gain is not stable. For stabilization we use negative feedback in op-amp.

Q No :- 3
Part :- (b)

The output of summing amplifier is positive "it's" statement is not correct because summing amplifier is an inverting operational amplifier configuration which has more than one input and its output will be negative.

Q No :- 2

Answer

Given :-

one loop differential voltage gain is 400,000.

Common mode gain = 0.6

Required :-

$$\text{CMRR} = ?$$

Solution :-
Formula :-

$$\text{CMRR} = A_{od} / A_{cm}$$

$$\text{CMRR} = 400000 / 0.6$$

$$\Rightarrow 666,666.667$$

CMRR is decibels

$$\text{CMRR} = 20 \log (A_{od} / A_{cm})$$

$$\Rightarrow 20 \log (666,666.667)$$

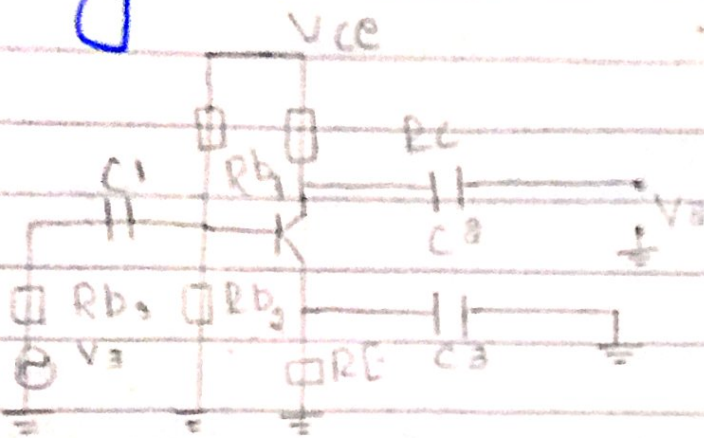
$$\Rightarrow 116.47 \text{ dB}$$

Q No 1

Part :- (b)

Hybrid mode of
transistor

Diagram :-



$$h_{ie} = \frac{v_{be}}{i_b} \rightarrow \text{input impedance}$$

$$h_{re} = \frac{v_{be}}{v_{ce}} \rightarrow \text{Reverse voltage ratio}$$

$$h_{fe} = \frac{i_c}{i_b} \rightarrow \text{forward current gain}$$