Q1

If we want to use BJT as an amplifier, what biasing condition need to be applied across base-emitter and base-collector junctions?

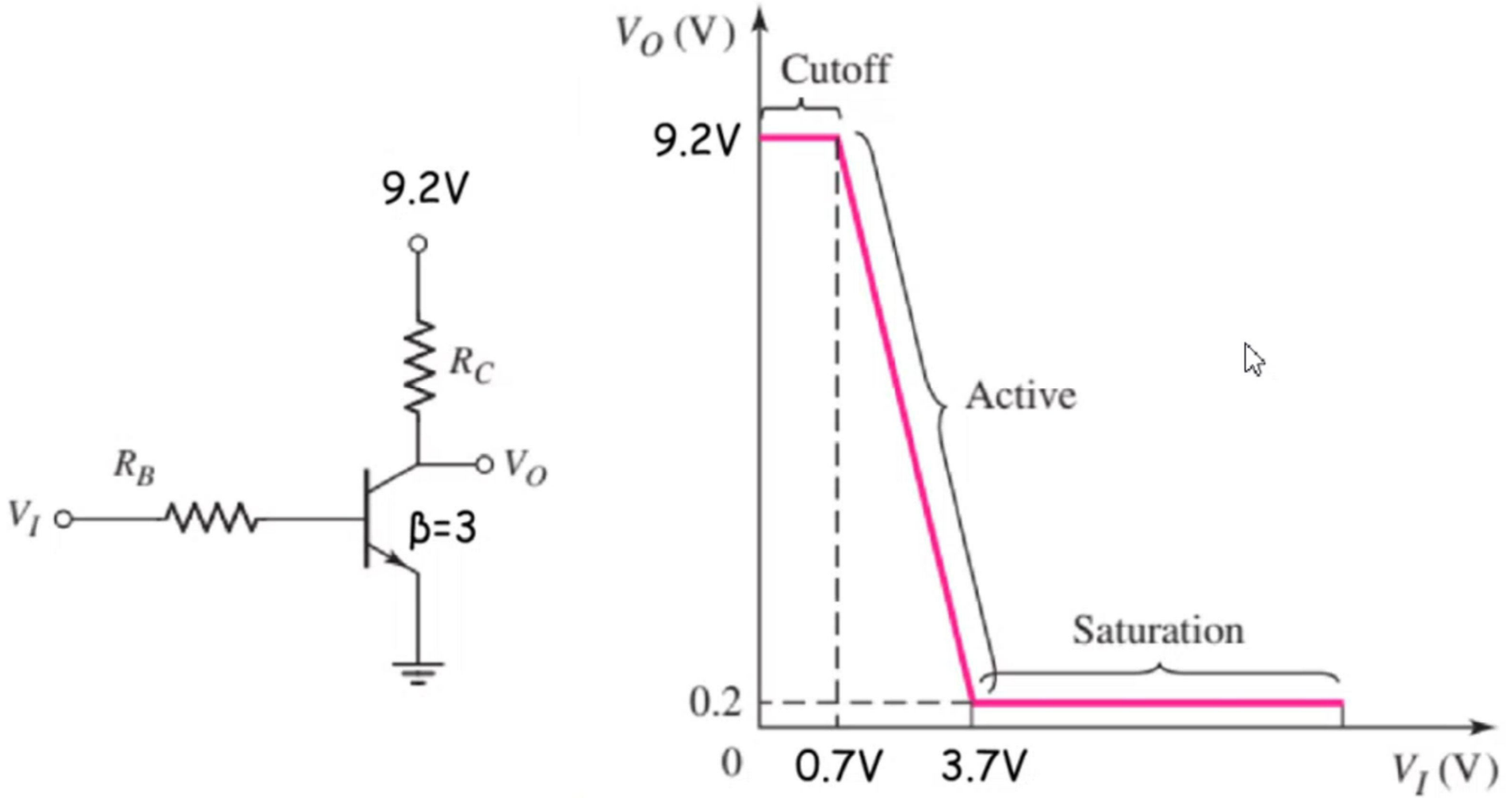
Q2

If we want to use BJT as a switch, what should be regions of operations?

Q3

Most of the carriers flowing through the base of a BJT are majority carriers or minority carriers?

Q4 What is the approximate gain of the amplifier shown in the Fig. below. The slope of the $V_o - V_I$ graph in the active region is equal to -3



Q5

In the transfer characteristics of a MOSFET, the threshold voltage is the measure of the

(a) minimum voltage to induce a n-channel/p-channel for conduction
(b) minimum voltage till which temperature is constant
(c) minimum voltage to turn off the device
(d) none of the above mentioned is true

Q6

For the MOS capacitor with a n-type substrate, a _____ gate voltage must be applied to create the hole inversion layer.

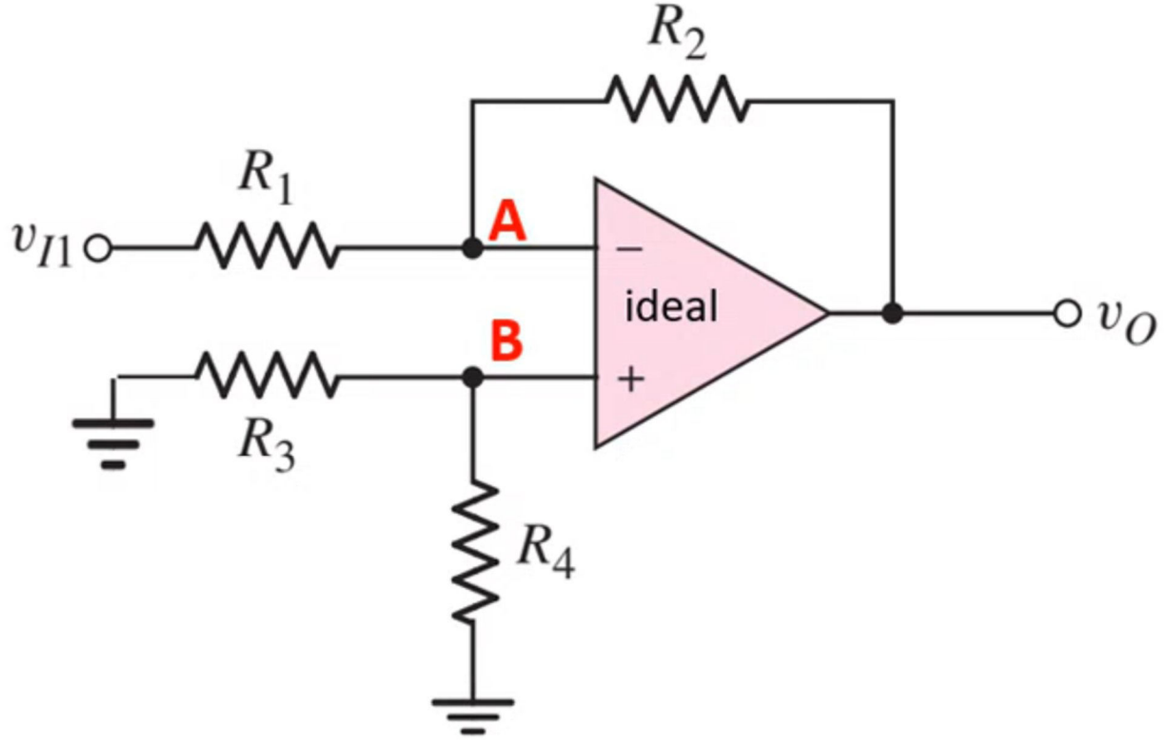
(a) zero
(b) positive
(c) negative
(d) either positive or negative

Q7

What are the important characteristics of an ideal op-amp?

Q8

What is the voltage at node A in the following op-amp circuit?



Q1

If for a BJT, the common base current gain is 0.98, then what is the value of its common emitter current gain?

Q2

Why do we use an emitter resistance in a common emitter biasing configuration?

Q3

The BJT small signal output impedance r_o accounts for

(a) change in i_c with v_{CE} in the active regime

(b) change in i_c with v_{CE} in the saturation regime

(c) change in i_b with v_{BE} in the active regime

(d) change in i_b with v_{BE} in the saturation regime

Q4

In a BJT biased in common emitter configuration, V_{CEQ} depends on

(a) collector resistance R_C
(b) emitter resistance R_E
(c) DC base current I_{BEQ}
(d) all of the above

Q5

Which is the correct statement among the following?

(a) MOSFET is an uncontrolled device
(b) MOSFET is a voltage controlled device
(c) MOSFET is a current controlled device
(d) MOSFET is a temperature controlled device

Q6

The output characteristics of a MOSFET is a plot of

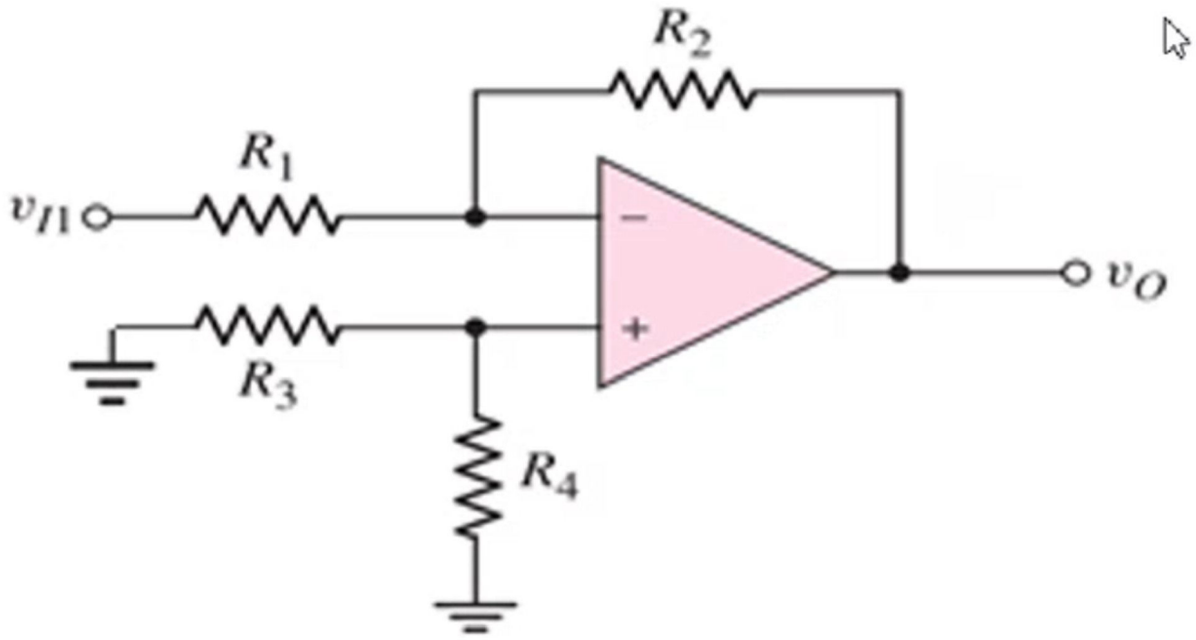
(a) I_d as a function of V_{gs} with V_{ds} as a parameter
(b) I_d as a function of V_{ds} with V_{gs} as a parameter
(c) I_g as a function of V_{gs} with V_{ds} as a parameter
(d) I_g as a function of V_{ds} with V_{gs} as a parameter

Q7

What is the value of common-mode gain for an ideal op-amp?

Q8

What is the output voltage (in terms of resistances)



Q3

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