

## BE Lab Test [Section 2]

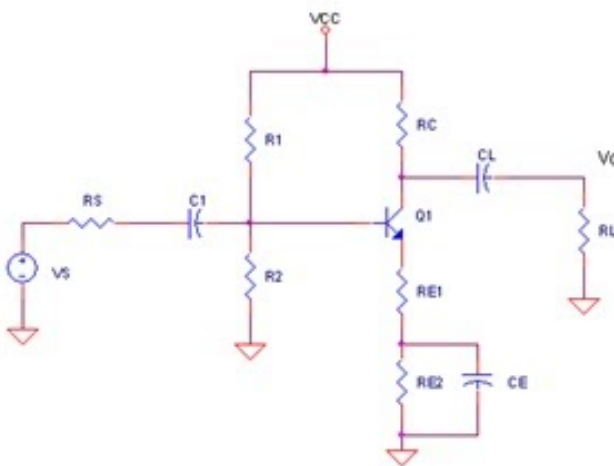
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A diode can act as

- ☐ Amplifier
- ☐ Latch
- ☐ Filter
- ☐ Switch

In the circuit below, what is the most likely scenario:



- ☐  $R_{E2} \gg R_{E1}$ ,  $Z_{CE} \approx 0$
- ☐  $R_{E1} \gg R_{E2}$ ,  $Z_{CE} \approx \infty$
- ☐  $R_{E1} \gg R_{E2}$ ,  $Z_{CE} \approx 0$
- ☐  $R_{E2} \gg R_{E1}$ ,  $Z_{CE} \approx \infty$



Two 50 mH inductors are connected in parallel with each other. What will their combined inductance be in Henrys?

- ☐ 50 mH
- ☐ 100 mH
- ☐ 200 mH
- ☐ 25 mH

Which of the following relates to a Ohmic device

- ☐ None of the other 3 options
- ☐ Its resistance is constant
- ☐ Current through it is proportional to its resistance
- ☐ Voltage across it is inversely proportional to the current through it

How does a capacitor behave at steady state when a DC voltage is applied across it?

- ☐ Charged and Short Circuit
- ☐ Uncharged and Short Circuit
- ☐ Uncharged and Open Circuit
- ☐ Charged and Open Circuit



The maximum output voltage of a certain low-pass filter is 15 V. The output voltage at the 3dB cut-off frequency is

- ☐ 10.1 V
- ☐ 15 V
- ☐ 5.6 V
- ☐ 10.6V

In a four band resistor, we have white, blue, red and golden band. What is the maximum resistance value?

- ☐ 108 Ohm
- ☐ 10.08 KOhm
- ☐ 960 Ohm
- ☐ 9.6 KOhm

An npn BJT is said to be operating in the saturation region, if

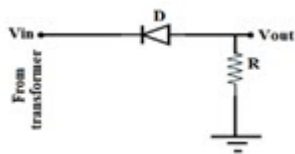
- ☐ Both BE and BC junctions are reversed biased
- ☐ BE junction is reverse biased and BC junction in forward biased
- ☐ Both BE and BC junctions are forward biased
- ☐ BE junction is forward biased and BC junction in reverse biased



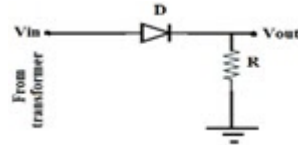
If ground is applied to the (+) terminal of an inverting Op-amp circuit, the (-) terminal will

- ☐ be virtual ground
- ☐ not invert the signal
- ☐ not need an input resistor
- ☐ have high reverse current

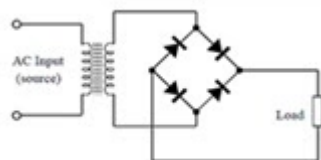
Which one of these circuits will clip off the positive half of the input ac signal?



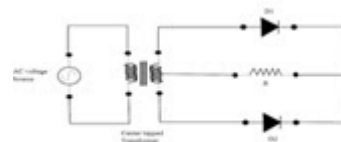
☐ \_Option\_



☐ Option\_



☐ \_Option



☐ Option



Chip number for two-input OR gate is

- ☐ 7404
- ☐ 7432
- ☐ 7486
- ☐ 7408

What is the percentage of tolerance if there is no fourth (tolerance) band on a resistor element?

- ☐ 2%
- ☐ 10%
- ☐ 20%
- ☐ 5%

Pick the option listing only universal gates.

- ☐ NOT and NOR
- ☐ OR and AND
- ☐ NAND and OR
- ☐ NAND and NOR



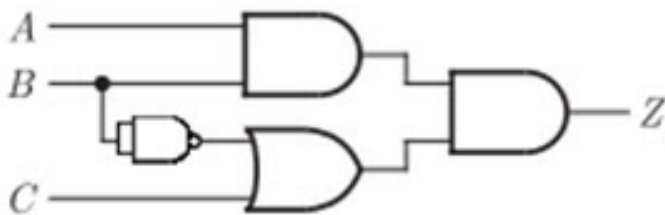
To design 1x4 DeMUX, we need

- ☐ Three-input OR gates and single-input NOT gates
- ☐ Two-input AND gates and three-input OR gates
- ☐ Three-input AND gates and two-inputs OR gates
- ☐ Three-input AND gates and single-input NOT gates

To design a NOR Gate SR latch, you need to use

- ☐ 7402
- ☐ 7400
- ☐ 7404
- ☐ 7432

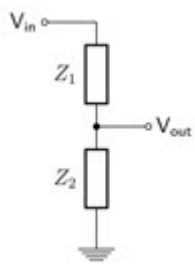
What is the output Z of the following circuit?



- ☐  $\bar{A}BC$
- ☐ 0
- ☐  $A\bar{B}C$
- ☐ ABC

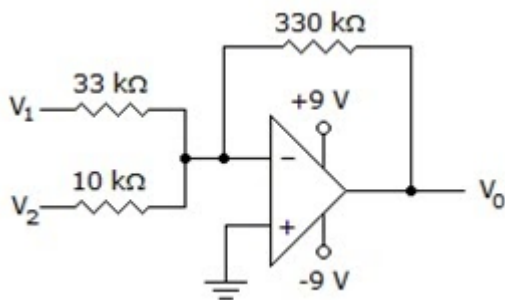


If  $V_{out} = V_{in}/3$ ,  $Z_1/Z_2$  is



- ☐ 2
- ☐ 3
- ☐ 1/3
- ☐ 0.5

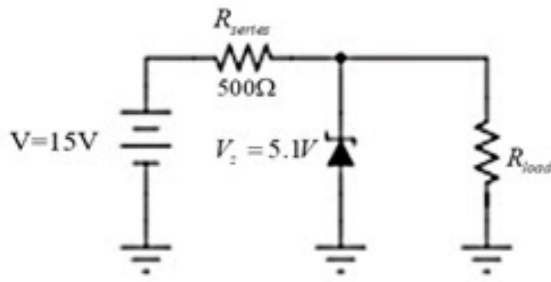
Calculate the output voltage if  $V_1 = V_2 = 0.15$  V.



- ☐ - 9 V
- ☐ - 4.65 V
- ☐ - 6.45 V
- ☐ + 4.65 V



Calculate the current through the Zener diode with a load resistance of  $910\Omega$ :



- ☐ 13.8 mA
- ☐ 14.2 mA
- ☐ 12.4 mA
- ☐ 15.2 mA

Polar capacitors can be easily identified

- ☐ By their legs
- ☐ By their prices
- ☐ By their sizes
- ☐ By their colors

What does a rectifier do?

- ☐ Converts a zero-mean ac signal to a non-zero mean ac signal
- ☐ Converts a zero mean ac signal to a dc signal
- ☐ Converts a ac signal of high amplitude to a ac signal of lower amplitude
- ☐ Converts a dc signal of high amplitude to a dc signal of lower amplitude





A magnitude comparator is defined as a digital comparator which has

- ☐ Two output terminals
- ☐ Three output terminals
- ☐ Only one output terminal
- ☐ No output terminal

Which of the following statement is NOT true?

- ☐ For a center-tapped transformer, the tapping is done on the secondary coil.
- ☐ Bridge rectifier requires more number of diodes than centre-tapped full wave rectifier
- ☐ We require more expensive diodes to design bridge rectifier compared to centre-tapped full wave rectifier
- ☐ Bridge rectifier has better TUF (transformer Utilization Factor) than centre-tapped full wave rectifier

For Chip no. 7408, the pin number for applying +VCC is

- ☐ 7
- ☐ 1
- ☐ 16
- ☐ 14



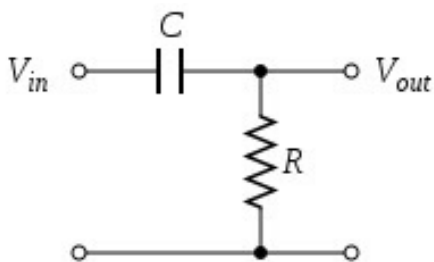
The Op-amp can amplify

- ☐ Only AC Signal
- ☐ Neither AC nor DC signal.
- ☐ Both AC and DC signals
- ☐ Only DC Signal

In a multiplexer, if there are 6 inputs, how many select lines do you need?

- ☐ 6
- ☐ 4
- ☐ 2
- ☐ 3

In the circuit below with cut off frequency 100KHz, if  $R = 400$  ohms what is  $C$ ?



- ☐ 20 $\mu$ F
- ☐ 4pF
- ☐ 4nF
- ☐ None of the options



Minimum number of diodes required for realizing a full wave rectifier is

- ☐ 4
- ☐ 3
- ☐ 2
- ☐ 1

An electronic device with component number 1N5408 is a

- ☐ Zener Diode
- ☐ Silicon Diode
- ☐ Germanium Diode
- ☐ Varactor Diode

In CE amplifier, bypass capacitor is

- ☐ connected in series with the emitter resistor
- ☐ not necessary as the resistor will have very high value
- ☐ connected both in series and parallel with emitter resistor
- ☐ connected in parallel with the emitter resistor

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