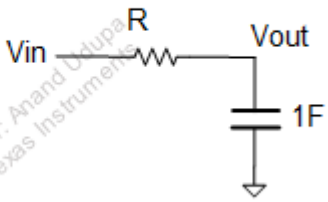
Quiz 7

* Full Name

* WISH Participant ID

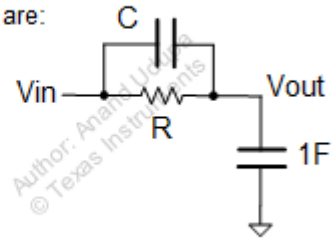
701. At a frequency of 100 rad/sec, Vout is -46 dB with respect to Vin. The value of R is equal to:
(a) 100Ω
(b) 4Ω
(c) 1Ω
(d) 2Ω
(e) 200Ω
(f) 10Ω
(g) 20Ω
(h) 5Ω



Answer the Question 701

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

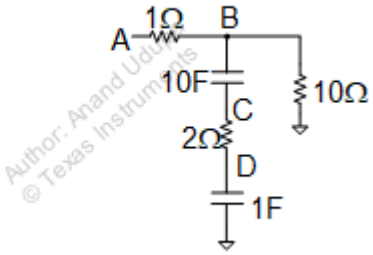
702. With respect to Vin, Vout is -32 dB lower at 100 rad/sec and -52 dB lower at 10,000 rad/sec. The value of R and C are:
(a) 160Ω, 2.5 mF
(b) 0.4Ω, 2.5 mF
(c) 2.5μΩ, 400F
(d) 2.5Ω, 1F
(e) 10Ω, 1F
(f) 40Ω, 1 mF
(g) 4Ω, 20 mF
(h) Insufficient information



Answer the Question 702

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

703. For input at A, output at D, the pole location is:
(a) 1.2 rad/s
(b) 0.63 rad/s
(c) 0.55 rad/s
(d) 1 rad/s
(e) 4.24 rad/s
(f) 6.36 rad/s
(g) 0.38 rad/s
(h) 0.22 rad/s



Answer the Question 703

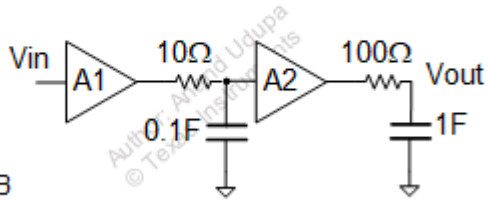
- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

704. In circuit of Q3: For input at B, output at D, the pole location is:
(a) 1.2 rad/s
(b) 1 rad/s
(c) 0.05 rad/s
(d) 0.38 rad/s
(e) 0.55 rad/s
(f) 0.63 rad/s
(g) 0.46 rad/s
(h) 0.22 rad/s

Answer the Question 704

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

706. A1 and A2 are ideal buffers with gain of 2 and 5 respectively. Magnitude of Vout with respect to Vin at a frequency of 100 rad/s is:
(a) -40 dB
(b) -50 dB
(c) 0 dB
(d) 20 dB
(e) -80 dB
(f) -60 dB
(g) -120 dB
(h) -100 dB

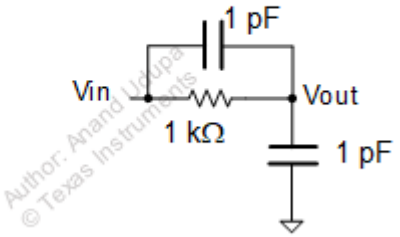


Answer the Question 706

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

710. In the circuit shown below, the input is driven with a waveform VIN=1.u(t). At a time of 2ns, the voltage at VOUT is roughly equal to:

(a) 1 V
(b) 0.315 V
(c) 0.93 V
(d) 0 V
(e) 0.81 V
(f) 0.5 V
(g) 0.63 V
(h) 0.99 V

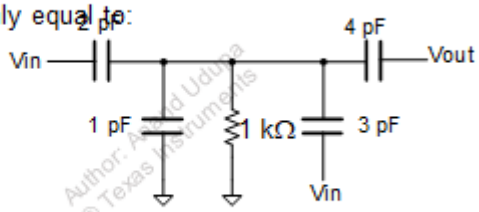


Answer the Question 710

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

711. A sine wave of amplitude 1V and frequency 100 Grad/s is applied at VIN. The amplitude at VOUT is roughly equal to:

(a) 1 V
(b) 0.33 V
(c) 0.5 V
(d) 0 V
(e) 0.99 V
(f) 0.25 V
(g) 0.63 V
(h) 0.83 V

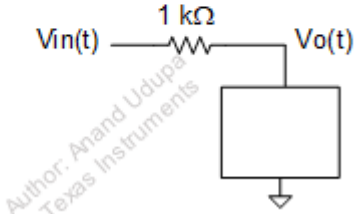


Answer the Question 711

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

712. A 2-port electrical component is recovered from an alien space ship. After some characterization in the TI lab, it is found to have a characteristic of i=(1e-3).v+(1e-6).dv/dt, where i is the current through the component and v is the voltage across the component. The component (represented by the box below) is then used in a circuit as shown below. What will be the 3-dB bandwidth between Vin(t) and Vo(t)?

(a) 1 Krad/s
(b) 500 rad/s
(c) 100 rad/s
(d) 2 Krad/s
(e) 4 Krad/s
(f) 250 rad/s
(g) 10 Krad/s
(h) Infinite



Answer the Question 712

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

713. A system has a DC gain of 3 and a gain at infinite frequency equal to 6. Which of the following statements is TRUE?

(a) Number of poles is greater than number of zeros
(b) Number of poles is equal to number of zeros
(c) Number of poles is less than number of zeros
(d) The system has neither poles nor zeros

Answer the Question 713

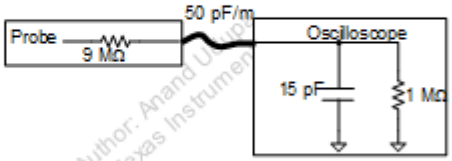
- ◯ a
- ◯ b
- ◯ e
- ◯ f

◯ c ◯ g

◯ d ◯ h

715. An oscilloscope probe has the RC model as shown below. What is the 3-dB bandwidth when it is hooked to the oscilloscope with a 1m cable?

(a) 12.4 kHz
(b) 17 kHz
(c) 1.8 kHz
(d) 0.26 kHz
(e) 5.6 kHz
(f) 10.2 kHz
(g) 2.7 kHz
(h) 11.7 kHz



Answer the Question 715

◯ a ◯ e

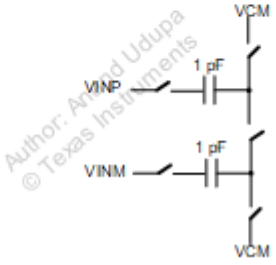
◯ b ◯ f

◯ c ◯ g

◯ d ◯ h

717. The circuit shown below is an example of a differential sampling circuit. The input signal is a differential sine wave on VINP and VINM. VCM is a DC voltage. The phase where the 5 switches are ON is referred to as the sampling phase and during this phase, (VINP-VINM) gets stored as a voltage difference between the 2 capacitors. What is the 3 dB bandwidth of this circuit if the equivalent resistance of each of the switches is 100 Ohm

(a) 4 Grad/s
(b) 10 Grad/s
(c) 3.33 Grad/s
(d) 1 Grad/s
(e) 0.25 Grad/s
(f) 7.5 Grad/s
(g) 12.5 Grad/s
(h) 5 Grad/s



Answer the Question 717

- ◯ a
- ◯ b
- ◯ c
- ◯ d
- ◯ e
- ◯ f
- ◯ g
- ◯ h

Done