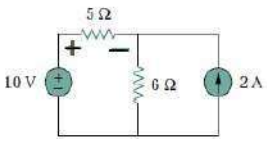
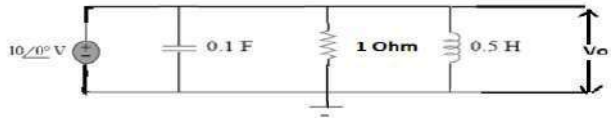
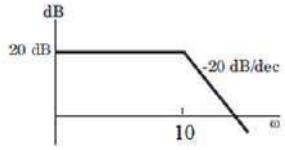
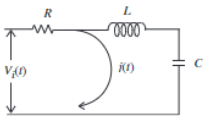
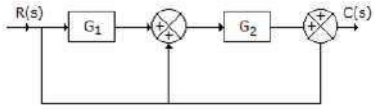
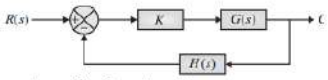
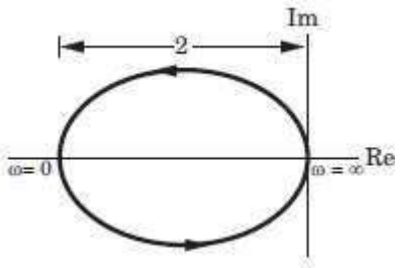
For the transfer function $G(s)H(s) = \frac{1}{s(s+1)(s+0.5)}$ the phase cross-over frequency is	1. 0.5 rad/sec 2. 0.707 rad/sec 3. 1.732 rad/sec 4. 2 rad/sec
The gain margin of the unity feedback system $G(s)H(s) = \frac{2}{(s+1)(s+2)}$ is	1. 1.76 dB 2.3.5 dB 3.-0.5 dB 4.-1.76 dB
In the Bode-plot of a unity feedback control system, the value of phase of $G(j\omega)$ at the gain crossover frequency is -120°. The phase margin of the system is	1. -120° 2. 60° 3. -60° 4. 120°
What is the Thevenin voltage across 6 ohm for the following circuit? 	1. 5.45 V 2. -5.45 V 3. 12 V 4. -12 V
What is the voltage across 0.5 H inductor in the following circuit? 	1. 3.33 V 2. 5 V 3. 7 V 4.10V

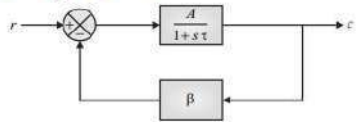
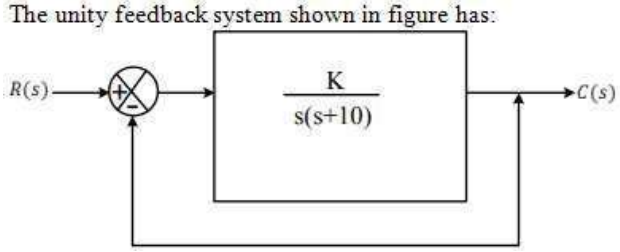
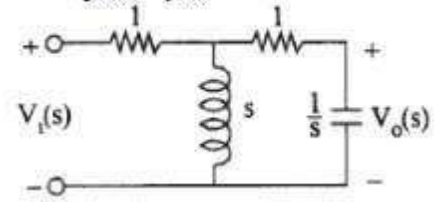
The electric field component of a wave in free space is given by $\vec{E} = 10\cos(10^7 t + kz)\hat{a}_y$ it can be inferred that	1. The wave propagates along $\hat{a}_y$ 2, The wavelength $\lambda = 188.5$ 3. The wave amplitude is 20 V/m 4. The wave number k = 0.33 rad/m
The electric flux density $D = 2x^3 a_x$ C/m^2. The volume charge density at P(3mm,-2mm,4mm) is	1. 54 C/m^3 2. 54 μC/m^3 3. 54 mC/m^3 4.54 nC/m^3
Consider the following statements regarding a linear system $y = f(x)$ 1. $f(x_1 + x_2) = f(x_1) + f(x_2)$ 2. $f[x(t+T)] = f[x(t)] + f[x(T)]$ 3. $f(Kx) = K f(x)$ Of these statements	1. 1, 2, 3 are correct 2. 1 & 2 are correct 3. 1 & 3 are correct 4. 3 alone is correct

Bode plot of a stable system is shown in the following figure. The open-loop transfer function of the unity feedback system is  	1. $\frac{100}{(s+10)}$ 2. $\frac{10}{(s+10)}$ 3. $\frac{1}{(s+10)}$ 4. $\frac{100}{(s+100)}$
The system with the open loop transfer function $G(s)H(s)=\frac{1}{s(s^2+s+1)}$ Has a gain margin of	1. - 6 dB 2. 0 dB 3. 3.5dB 4. -6 dB
The open-loop DC gain of a unity negative feedback system with closed loop transfer Function $\frac{s+4}{s^2+7s+13}$ is	1. 4/13 2. 4/9 3. 4 4. 13

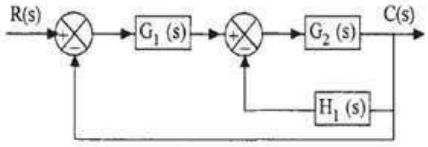
The relationship between the force $f(t)$ and the displacement $x(t)$ of a spring-mass system (with mass M, viscous damping D and spring constant K) is $M\frac{d^2x(t)}{dt^2}+D\frac{dx(t)}{dt}+kx(t)=f(t)$. With M = 0.1, D = 2, K = 10 in appropriate units, the transfer function $G(s)=\frac{X(s)}{F(s)}$ is	1. $\frac{10}{s^2+20s+100}$ 2. $\frac{10}{s^2-20s-100}$ 3. $s^2+20s+100$ 4. $s^2-20s-100$
For the network shown in Figure below $V_i(t)$ is the input and $i(t)$ is the output, the transfer function $I(s)/V(s)$ of the network is 	1. $\frac{s}{LCs^2+RCs+1}$ 2. $\frac{Cs}{LCs^2+Cs+1}$ 3. $\frac{Cs}{LCs^2+RCs+1}$ 4. $\frac{Cs}{LCs^2+Ls+1}$
For the system in the given figure. The transfer function C(s)/R(s) is 	1. $G_1 + G_2 + 1$ 2. $G_1 + G_2 + 1$ 3. $G_1 G_2 + G_2 + 1$

A feedback control system with high gain K, is shown in the figure below.  Then the closed loop transfer function is	1. Sensitive to perturbations in G(s) and H(s). 2. Sensitive to perturbations in G(s) but not to perturbations in H(s). 3. Sensitive to perturbation in H(s) but not to perturbations in G(s). 4. Insensitive to perturbations in G(s) and H(s).
A unity feedback system has open loop transfer function $\frac{2s+1}{s^2}$ The closed loop transfer function is	1. $\frac{s^2}{2s+1}$ 2. $\frac{2s}{s^2+2s+1}$ 3. $\frac{5s}{s^2+2s+1}$ 4. $\frac{2s^2}{s^2+2s+2}$
A unity feedback system has open-loop transfer Function $G(s)=\frac{1}{s(2s+1)(s+1)}$ The phase crossover and gain crossover frequencies are	1. 1.414 rad/sec, 0.57 rad/sec 2. 1.414 rad/sec, 1.38 rad/sec 3. 0.707 rad/sec, 0.57 rad/sec 4. 0.707 rad/sec, 1.38 rad/sec

The transfer function of an open-loop system is $$G(s)H(s) = \frac{(s+2)}{(s+1)(s-1)}$$ The Nyquist plot will be of the form	4. 
The phase margin of a system with the open loop transfer function $$G(s)H(s) = \frac{(1-s)}{(1+s)(3+s)}$$	1. 68.3° 2. 90° 3. 0 4. infinity
For a second-order system with the closed-loop transfer function $F(s)=\frac{9}{s^2+4s+9}$, the settling time for 2-percernt band, in seconds, is	1. 1.5 2. 2 3. 3 4. 4
The characteristic polynomial of system is $q(s)=2s^5+s^4+4s^3+2s^2+2s+1$ The system is	1. stable 2. marginally stable 3. unstable 4. oscillatory

Consider a system with the transfer function $G(s)=\frac{s+6}{Ks^2+s+6}$, its damping ratio will be 0.5 when the value of K is	1. $\frac{2}{6}$ 2. $\frac{1}{6}$ 3. 3 4. 6
In the feedback scheme shown in figure, the time-constant of the closed system will be 	1. $A\beta\tau$ 2. τ 3. $(1+A\beta\tau)$ 4. $\frac{\tau}{(1+A\beta)}$
The unity feedback system shown in figure has: 	1. Zero steady state position error 2. Zero steady state velocity error 3. Steady state position error K/10 units 4. Steady state velocity error K/10 units
Find $V_0(s)/V_i(s)$ 	1. $\frac{s}{2s^2+2s+1}$ 2. $\frac{s}{2s^2-2s+1}$ 3. $\frac{s}{2s^2+2s-1}$ 4. $\frac{s}{s^2+2s+1}$

Find the transfer function $C(s)/R(s)$



1.

$$\frac{G2}{1+G2H1+G1G2}$$

2.

$$\frac{G1G2}{1+G2H1+G1G2}$$

3.

$$\frac{G1}{1+G2H1+G1G2}$$

4.

$$\frac{G1G2}{1+G2+G1}$$

The open-loop transfer function of a system is

$$G(s)H(s) = \frac{K}{s(1+2s)(1+3s)}$$

The phase crossover frequency is

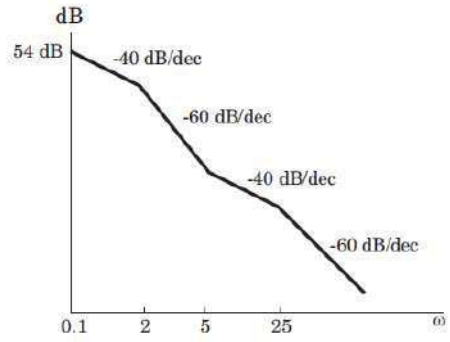
1.
6 rad/sec

2.
2.46 rad/sec

3.
0.41 rad/sec

4.
3.23 rad/sec

The asymptotic approximation of the log-magnitude versus frequency plot of a certain system is shown in the following figure. Its transfer function is



1.

$$\frac{50(s+5)}{s^2(S+2)(s+25)}$$

2.

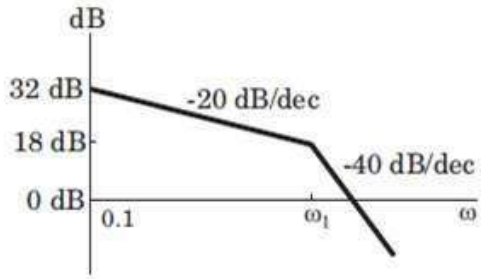
$$\frac{20(s+5)}{s^2(S+2)(s+25)}$$

3.

$$\frac{10s^2(s+5)}{(S+2)(s+25)}$$

4.

$$\frac{20(s+5)}{s(S+2)(s+25)}$$

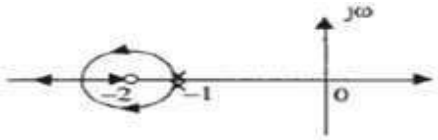
Consider the Bode plot of a unity feedback system shown in following figure  The damping ratio is	1. 0.063 2. 0.179 3. 0.483 4. 0.639
The open-loop transfer function of a *ufb* system is $G(s) = \frac{(1+s)}{s(1+0.5s)}$ The corner frequencies are	1. 0 and 2 2. 0 and 1 3. 0 and -1 4. 1 and 2
An open loop transfer function G(s) of a system is $G(S) = \frac{K}{s(s+1)(s+2)}$,for a unity feedback system, the breakaway point of the root loci on the real axis occurs at,	1. -1.58 2. -0.42 and -1.58 3. -0.422 4. -1.26
The second order dynamic system $\frac{dx}{dt} = PX + Qu$, $Y = RX$ has the matrices P,Q and R a follows : P= $\begin{bmatrix} -1 & 1 \\ 0 & -3 \end{bmatrix}$, Q= $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$, R= [0 1] The system has the following controllability and observability properties:	1. Controllable and observable 2. Not controllable but observable 3. Controllable but not observable 4. Not controllable and not observable
Consider a second order system whose state space representation is of the form $\dot{x} = Ax + Bu$ $x_1(t) = x_2(t)$, then the system is	1. Controllable 2. uncontrollable 3. Observable 4.unstable

A unity feedback system has an open loop Transfer function $\frac{K(S+2)}{(S+1)^2}$. The root Locus plot is

1.

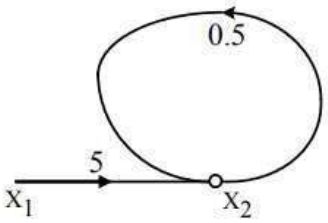
2.

3.



4.

In the signal flow graph shown in figure $X_2 = TX_1$ where T, is equal to



1.
2.5

2.
5.5

3.
5

4.
10

A system described by the following differential equation $\frac{d^2y}{dt^2}+3\frac{dy}{dt}+2y=x(t)$ is initially rest. For the input $x(t)=2u(t)$, the output $y(t)$

1.

$$\left(1-2e^{-t}+e^{-2t}\right)u(t)$$

2.

$$\left(1+2e^{-t}+e^{-2t}\right)u(t)$$

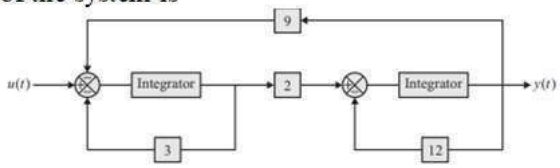
3.

$$\left(1-2e^{-t}-e^{-2t}\right)u(t)$$

4.

$$\left(1-2e^{-t}+e^{t}\right)u(t)$$

The block diagram of a control system is as shown in figure. The transfer function $G(s)=\frac{Y(s)}{U(s)}$ of the system is



1. $$\frac{1}{27\left(1-\frac{s}{6}\right)\left(1-\frac{s}{9}\right)}$$

2. $$\frac{1}{27\left(1+\frac{s}{6}\right)\left(1+\frac{s}{9}\right)}$$

3. $$\frac{2}{27(1+6s)(1+9s)}$$

4. $$\frac{2}{27(1-6s)(1-9s)}$$

The forward path transfer function of a unity feedback system is

$$G(s)=\frac{1000}{(s+20(s^2+4s+10)}$$

For input of $60u(t)$ steady state error is

1.
0

2.
300

3.
Infinity

4.
10

The unit-step response of a system starting from rest is given by $c(t)=1-e^{-2t}, t>0$, the transfer function of the system is

1. $$\frac{1}{1+2s}$$

2. $$\frac{1}{2+s}$$

3. $$\frac{2}{2+s}$$

4. $$\frac{2}{2-s}$$

The unit impulse response of a system is $h(t)=e^{-t}, t \geq 0$ For this system, the steady-state value of the output for unit step input is equal to	1. -1 2. 0 3. 1 4. infinity
Which of the following systems is time invariant?	1. $y(t) = x(2t) + x(t)$ 2. $y(t) = x(t) + x(1-t)$ 3. $y(t) = -x(t) + x(1-t)$ 4. $y(t) = x(t) + x(t-1)$
Which block of the discrete time systems requires memory in order to store the previous input?	1. Adder 2. Signal Multiplier 3. Unit Delay 4. Unit Advance
$y[n] = r^n x[n]$ is _____ system.	1. Linear time invariant 2. Time varying 3. Linear and time varying 4. Causal and time invariant

If the input-output relationship is given by $y(t) = 2x(t)\frac{d\,x(t)}{dx}$ What kind of system it represents?	1. Linear system 2. Non linear system 3. LTI system 4. Linear but time-invariant system
The convolution sum of two sequences x(n) = {1, 2, 1, 3} and h(n) = {1, 2, 1, 1} is_____.	1. y(n) = {1,4,6,7,8,4,3} 2. y(n) = {1,4,6,9,8,4,4} 3. y(n) = {1,4,6,8,9,4,3} 4. y(n) = {1,4,6,8,9,3,3}
If $\boldsymbol{X}$ is uniform random variable distributed between $-\mathbf{2}$ and 3, then what is its mean and variance?	1. 0.25 and 2.08333 2. 0.5 and 2.08333 3. 0.5 and 4.1666 4. 1 and 2.08333

If X is Gaussian with mean 3 and standard deviation 2, then what is the $Prob\{X \leq 5.5\} =?$	1. 0.75 2. $\int_{-\infty}^{1.25} \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt$ 3. 0.5 4. $\int_{1.25}^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt$
Laplace transform of $-te^{-at}u(-t)$	1. s^2 2. $\frac{1}{(s+a)^2}$ 3. $\frac{1}{s+a}$ 4. $\frac{1}{s^2+a^2}$

Which among the following is an output provided by transresistance amplifier?

1. Output current proportional to signal voltage

2. Output voltage proportional to signal current

3. Output voltage proportional to input voltage

4. Output current proportional to signal current

When the bypass capacitor is removed from a common source amplifier, the voltage gain

1. increases 2. decreases 3. Has no effect 4. Has very little effect

When a multistage amplifier is to amplify d.c. signal, then one must use …….. coupling

1. RC 2. Transformer 3. Direct 4. None of the above

What is the other name of 3 dB frequency?

1. Gain cross-over frequency 2. Phase cross-over frequency 3. Corner frequency 4. Band pass frequency

What is the scale multiplier (factor) of a basic integrator?

1. R / C 2. C / R 3. –RC 4. –1 / RC

What is the minimum number of gates required to implement the Boolean function (AB+C) if we have to use only 2-input NOR gates?

1.2 2.3 3.4 4.5

Which one of the following is the most likely reason for large overshoot in a control system

1. High gain in a system 2. Presence of dead time delay in a system 3. High positive correcting torque 4. High retarding torque

Which one of the following set of gates are best suited for 'parity' checking and 'parity' generation

1.AND,OR , NOT Gates 2.XOR and XNOR Gates 3.NAND Gates 4.NOR Gates

Which of the following adders can add three or more numbers at a time ?

1. Ripple Carry Adder 2. Carry Look Ahead Adder 3. Carry Save Adder 4. All the above

Which mode of operation is being used when a 555 timer chip has two external resistors and an external capacitor?

1. monostable 2. pulse stretching 3. Schmitt triggering 4. astable

Without any additional circuitry an 8:1 MUX can be used to obtain

1. Some but not all Boolean functions of 3 variables

2. All function of 3 variables but none of 4 variables

3. All functions of 3 variables and some but not all of 4 variables

4. All functions of 4 variables

With most monostable multivibrators, what is the Q output when no input trigger has occurred?
1. LOW 2. +5 V 3. SET 4. HIGH
Which tool is used to find similarities between signals

1.Auto correlation 2. Cross correlation A 3.Spectrum 4.Periodocity

Which tool can quantify the relationships among pairs of biosignals
1.Cross correlation and coherence 2.Auto correlation and periodogram 3.Periodogram 4.PSD
Which point on root locus specifies the meeting or collision of two poles?
1. Centroid 2. Break away point 3. Stability point 4. Anti-break point
What is the minimum number of NAND gates required to implement a 2-input EXCLUSIVE-OR function without using any other logic gate?
1.2 2.4 3.5 4.6
What is the level of the voltage between the input terminals of an op-amp?
1. 0 V 2. 5 V 3. 5 mV 4. 0.5 V
What is the function of the comparators in the 555 timer circuit?
1. to compare the output voltages to the internal voltage divider
2. to compare the input voltages to the internal voltage divider
3. to compare the output voltages to the external voltage divider
4. to compare the input voltages to the external voltage divider
What is the frequency of the astable multivibrator with R = 1 kΩ, R = 3 MΩ and C = 1nF
1. 241 Hz 2. 178 Hz 3. 78 Hz 4. 8 Hz
What is the cutoff frequency of an op-amp if the unity-gain frequency is 1.5 MHz and the openloop gain is 100,000?
1. 5 Hz 2. 15 Hz 3. 10 Hz 4. 20 Hz
What is the band of frequencies where there is maximum attenuation of the signal?
1. Pass band 2. Transition band 3. Transmission band 4. Stop band
What is the difference output voltage of any signals applied to the input terminals?

1. The differential gain times the difference input voltage.
2. The common-mode gain times the common input voltage
3. The sum of the differential gain times the difference input voltage and the common-mode gain times the common input voltage.
4. The difference of the differential gain times the difference input voltage and the common-mode gain times the common input voltage.
Voltage feedback connections tend to _____ the output impedance. Current feedback connections tend to _____ the output impedance.

1. decrease, increase 2. increase, decrease 3. increase, increase 4. decrease, decrease

Two coils with self inductance 4 H are connected in series (aiding). The mutual inductance is 2 H. What is the effective inductance of the series combination is 1. 8 H 2. 10 H 3. 12 H 4. 6H

Turning point algorithm reduces the sampling frequency of an ECG signal from

1. 200 to 100 samples/s 2.100 to 50 samples/s 3.75 to 50 samples/s 4. 100 to 75 samples/s

Transistors are biased in -------- for class B operation

1. Active mode 2. Reverse active mode 3. Cut off 4. saturation

To detect the duration of QRS complex one has to use _____ methods

1. Template matching 2. Derivative based operators 3. Pan – Tompkins 4. RLS method

To analyze the common-emitter amplifier, what must be done to determine the dc equivalent circuit?

1. leave circuit unchanged

2. Open circuit the coupling and bypass capacitors

3. Short circuit the coupling and bypass capacitors

4. replace V with ground

The velocity of an EM wave

1. Inversely proportional to β 2. inversely proportional to α

3. directly proportional to β 4. Directly proportional to α

The transient response, with feedback system

1. rises slowly 2. rises quickly 3. decays slowly 4.decays quickly

The start-conversion on the ADC0804 is done by using the:

1. WR 2. CS line 3. INTR line 4. V line

The Phase margin of the system 0 . It represents a

1. Stable System 2. Conditionally Stable System 3. Unstable System 4. Marginally Stable System

The output of the astable circuit _____.

1. constantly switches between two states 2. is LOW until a trigger is received

3. is HIGH until a trigger is received 4. floats until triggered

The need for Digital Image Processing on Medical Images (Pick all the most suitable ones) 1. To have better storage and safe transmission 2. To manipulate the image for our need 3. To get better understanding on disease and its prognosis 4. To save ☐me and make process automated

1. 1,2,3 2. 1,3,4 3. 2,3,4 4. 1,2,4

The most widely used approach to IIR filter design is based on

1. Fourier transform 2. Bi linear transform 3.Cosine transform 4.Discrete Fourier transform

The I/O ports that are used as address and data for external memory are:

1. Ports 1 and 2 2. Ports 1 and 3 3. Ports 0 and 2 4. Ports 0 and 3

The frequency range of 1GHz to 30 GHz are referred to as

1. Sound waves 2. Microwaves 3. Mini waves 4. None of these

The circuit shown below implements a 2-input NOR gate using two 2-4 MUX (control signal 1 selects the upper input). What are the values of signals x, y and z?

1.1,0,B 2.1,0,A 3.0,1,A 4.0,1,B

The admittance of a circuit is (0.05 - j 0.08) Siemens. The impedance of the circuit is

1. (5.6 – j 8.98) Ohm 2. (5.6 + j 8.98) Ohm 3. (20 – j 12.5) Ohm 4. (20 +j 12.5) Ohm

The _____ amplifier configuration has the highest input impedance and the lowest output impedance of the four basic op-amp configurations.

1. non-inverting 2. inverting 3. voltage-follower 4. differential

State space analysis is applicable even if the initial conditions are _____

1. Zero 2. Non-Zero 3. Equal 4. Not equal

Simpson's rule is the most widely used numerical_____ algorithm

1. Integration 2. Differentiation 3. Addition 4. Averaging

Quiescent power is the power dissipation of a transistor

1. With no signal input 2. With no load. 3. Under full load. 4. Along the dc load line

Out of the given I I R filters the following filter is the efficient one

1. Circular filter 2. Elliptical filter 3. Rectangular filter 4. Chebyshev filter

Negative feedback in a closed loop system does not

1. Reduce the overall gain 2. Reduce bandwidth

3. Improve disturbance rejection 4. Reduce sensitivity to parameter variation

Low frequency oscillators have a frequency range of

1. 20 Hz-20 kHz 2. 20 Hz-100 kHz 3. 1 Hz-20 kHz 4. 50 Hz-100 kHz

Mass, in force-voltage analogy, is analogous to

1. charge 2. Current 3. Inductance 4. resistance

In a comparator with output bounding, what type of diode is used in the feedback loop?

1. Schottky 2. junction 3. zener 4. varactor

How many RC pairs will be present in a second order low pass filter?

1. 1 2. 2 3. 3 4. 4

If the value of R decreases in the circuit, the voltage gain will _____ and the input impedance will _____.

1. increase, increase 2. increase, decrease 3. decrease, decrease 4. decrease, increase

In 8086 microprocessor one of the following statements is not true.

1. Coprocessor is interfaced in MAX mode 2. Coprocessor is interfaced in MIN mode

3. I/O can be interfaced in MAX / MIN mode 4. Supports pipelining

In 8086 the overflow flag is set when

1. The sum is more than 16 bits

2. Signed numbers go out of their range after an arithmetic operation

3. Carry and sign flags are set 4. During subtraction

For a phase-shift oscillator, the gain of the amplifier stage must be greater than _____.

1. 19 2. 29 3. 30 4. 1

How many 1-of-16 decoders are required for decoding a 7-bit binary number?

1. 5 2. 6 3. 7 4. 8

If an emitter bypass capacitor is installed, what would the new A be?

1. 4.96 2. 125 3. 398 4. 600

Find the value of I in the circuit

1. 2 mA 2. 4 mA 3. 5 mA 4. 6 mA

Emitter follower is a …….. circuit

1. Voltage feedback 2. Current feedback

3. Both voltage and current feedback 4. None of the above

Consider the following statements on a network at resonance 1. The impedance is maximum 2. The power factor of the network is unity irrespective of the network 3. The Q of the network is independent of R Of these statements

1. 1 and 3 are correct 2. 1 and 2 are correct

3. 2 and 3 are correct 4. 1 alone is correct

Consider an eight-bit ripple-carry adder for computing the sum of A and B, where A and B are integers represented in 2's complement form. If the decimal value of A is one, the decimal value of B that leads to the longest latency for the sum to stabilize is _____

1. -1 2. 2 3. -2 4. 1

Consider a carry lookahead adder for adding two n-bit integers, built using gates of fan-in at most two. The time to perform addition using this adder is

1.O(1) 2.O(log n) 3.O(n) 4.O(√n)

Consider a Class AB circuit with VCC=15V,IQ=2mA and RL=100Ω.Determine VBB given IS=10-13 A.

1. 1.186 V 2. 2.8 V 3. 5.3 V 4. 4.2 V

Calculate the efficiency of a class B amplifier for a supply voltage of VCC = 20 V with peak output voltage of VL(p) = 18 V. Assume RL = 16Ω.

1. 78.54% 2. 75% 3. 70.66% 4. 50%

Calculate the output voltage if V = 300 mV and V = 700 mV.

1. 0 V 2. -12 V 3. 12 V 4. - 4 V

Calculate the output voltage for this circuit when V = 2.5 V and V = 2.25 V.

1. –5.25 V 2. 2.5 V 3. 2.25 V 4. 5.25 V

Calculate the input voltage when V = 11 V.

1. 1.1 V 2. -1.1 V 3. 1 V 4. -1 V

At what input voltage level does the output voltage level become numerically equal to the value of the differential gain of the amplifier?

1. V = –V = 0.25 V 2. V = –V = 0.50 V 3. V = –V = 0.75 V 4. V = –V = 1.00 V

Lempel-Ziv algorithm is

1. Variable to fixed length algorithm 2. Fixed to variable length algorithm

3. Fixed to fixed length algorithm 4. Variable to variable length algorithm

The propagation model that estimates radio coverage of a transmitter is called as

1. Large scale propagation model 2. Small scale propagation model

3. Fading model 4. Okumura model

Which of the following is reverseable and lossless compression technique

1. Huffman Encoding 2. JPEG Encoding 3. Run Length Encoding

Which antennas are renowned as patch antennas especially adopted for space craft applications?

1. Aperture 2. Microstrip 3. Array 4. Lens

Hall Effect sensors are used in

1. Flow meter 2. Fuel level indicator 3. Both (A) and (B) 4. None of the above

Which of the following is a binary weighted DAC?

1. R-2R ladder DAC 2. PWM DAC 3. Switched resistor DAC 4. Sampling DAC

Amplifier with power supply and output circuits galvanically isolated are called _____

1. Differential amplifier 2. Isolation amplifier 3. Inverting amplifier 4. None of the mentioned

Difference between levels on input that causes transition in Schmitt trigger is _____

1. Hysteresis 2. Threshold 3. Cut-off value 4. Peak value

For a particular op-amp hysteresis is governed by _____

1. Resistor R1 2. Resistor R2 3. Both resistors R1 and R2 4. Op-amp parameters

In 741 IC, pin number 4 is represented by _____

1. Offset null 2. Positive input 3. Negative input 4. Negative supply

Threshold voltage for switching in Schmitt trigger is determined by _____

1. Resistor R1 2. Resistor R2 3. Both resistors 4. None of the mentioned

Voltage follower is also known as _____

1. Unity gain amplifier 2. Differential amplifier 3. Comparator 4. None of the mentioned

What is the Common Mode Rejection Ratio?

1. Output of a differential amplifier 2. Ability of an amplifier to reject common mode signals 3. Ability of an amplifier to accept common mode signals 4. None of the mentioned

What is the purpose of a differential amplifier in voltmeter?

1. Elimination of unwanted signals 2. To find difference of voltages 3. To eliminate DC components 4. To set a certain voltage level

Which configuration of op-amp is used for filter circuit?

1. Differential 2. Non-inverting 3. Inverting 4. None of the mentioned

Which of the following are used in DAC?

1. Ladder network 2. Successive approximation technique 3. Both Ladder and successive approximation technique 4. None of the mentioned

Which of the following can act as a comparator?

1. Op-amp with negative feedback 2. Op-amp with positive feedback 3. Op-amp without feedback 4. None of the mentioned

Which of the following cannot be treated as a requirement of the instrumentation amplifier?

1. Low drift 2. Low input impedance 3. High linearity 4. High CMRR

Which of the following detect the presence of a voltage between two voltages?

1. Zero crossing detector 2. Differential comparator 3. Window comparator 4. None of the mentioned

Which of the following device is similar to analog comparator?

1. Analog switch 2. MCB 3. Energy meter 4. Digital switch

Which of the following is an indication by settling time?

1. Accuracy of conversion 2. Speed of conversion 3. Precision in conversion 4. All of the mentioned

Which of the following is converted to square wave in Schmitt trigger?

1. Sine wave 2. Triangular wave 3. Pulse wave 4. All of the mentioned

Which of the following is not a characteristic of an ideal op-amp?

1. Zero slew rate 2. Infinite bandwidth 3. Infinite input impedance 4. Zero output impedance

Which of the following method is employed for ADC?

1. Ladder network 2. Successive approximation type 3. PWM type 4. None of the mentioned

"Hot-wire anemometers" are differential pressure measurement type of Flow sensors.

1. True 2. False 3. Not always true (depends upon single or multi type) 4. Always true (depends upon single or multi type)

_____ describes current flow between two junctions formed by two different metals.

1. Peltier effect 2. Thomson effect 3. Seebeck effect 4. None of the mentioned

A metal with temperature coefficient of resistance has a value 200/°C, its initial resistance is given by 40Ω. For an increase in 300 °C to350 °C. What will be the final resistance value?

1. 40 KΩ 2. 4 KΩ 3. 40 Ω 4. 400 Ω

A Multi hot wire anemometer can sense

1. Only flow velocity of the fluid 2. Direction of velocity of fluid 3. Both flow velocity and direction of flow 4. None of the above

Analogous quantities of heat flow and temperature in electrical are _____ and _____

1. Potential and current 2. Current and potential 3. Power and potential 4. Current and power

At equilibrium Lorentz forces will be _____ of force due to Electric field.

1. Double 2. Half 3. Equal 4. No proportionality

Ceramic materials are made piezoelectric by polarizing them using a process called

1. Polling 2. Fluxgate effect 3. Polishing and grinding 4. Annealing

Coriolis effect is used for flow detection in which type of flow meters?

1. Venturi tubes 2. Pitot tube 3. Mass flow meters 4. Ultrasonic Flow sensors

Doppler type ultrasonic sensors measure the flow through:

1. Frequency shift caused by flow 2. Amplitude shift caused by flow velocity 3. Time shift caused by flow velocity 4. None of the above

For a material capacitance increases with _____

1. Decrease in area of plates, all other factors constant 2. Increase in distance between plates, all other factors constant 3. Decrease in distance between plates, all other factors constant 4. None of the mentioned

For a piezoelectric sensor, the sensor's discharge time constant (DTC) is generally determined by

1. product of Maximum resistance path and total capacitance of the system 2. product of lowest insulation resistance path and total capacitance of the system 3. addition of lowest insulation resistance path and total capacitance of the system 4. addition of Maximum resistance path and total capacitance of the system

If the absolute pressure at any place is 5 bar, what is the gauge pressure at that place?

1. Can't be measured 2. 6 bar 3. 4 bar 4. 1 bar

In a capacitive type level sensor which among the following is generally the variable quantity?

1. Surface area between the electrodes 2. Distance between the electrodes 3. Dielectric constant of the material 4. None of the above

In a Voltage Mode, Low-Impedance Piezoelectric Force Sensor, the connecting cables must be:

1. ordinary cables/wires 2. low noise cables 3. No cable connection is required at all 4. Thick and highly insulating cable

In flexure mode piezoelectric accelerometer, the seismic mass is

1. A beam shaped bar which is suspended on a pivot 2. Is sandwiched between and outer ring and a piezo disk 3. Simply sits/compresses a piezo disk 4. None of the above

In GMR sensors a higher Resistance is obtained when: 1. The magnetization of adjacent ferromagnetic layers is parallel to each other. 2. The magnetization of adjacent ferromagnetic layers is antiparallel to each other. 3. Independent of the magnetization of the ferromagnetic layers. 4. GMR sensors don't show a high resistance.

In Pyroelectric effet, output voltage due to induced stress is caused by:

1. external mechanical pressure 2. external magnetic field 3. external torque 4. external thermal radiation

LDR's are also called _____

1. Photo voltaic cell 2. Photo resistive cell 3. Photo emissive cell 4. All of the mentioned

Several thermocouples connected together in series, such that all the reference junctions are at the same cold temperature and all the hot junctions are exposed to the temperature being measured is called a:

1. Thermopile 2. Thermometer 3. Pyroelectric 4. Piezoelectric

Static pressure is measured in a Pitot tube

1. Along the flow direction 2. In a void space along the flow 3. Right angles to the flow direction 4. None of the above

The Bragg Cell in a LDA is used for:

1. Splitting the laser beam 2. Merging the splitted laser beams 3. Creates the fringe patters 4. None of the abov

Questions	Choices
LDR’s are also called _____	1. Photo voltaic cell 2. Photo resistive cell 3. Photo emissive cell 4. All of the mentioned
Several thermocouples connected together in series, such that all the reference junctions are at the same cold temperature and all the hot junctions are exposed to the temperature being measured is called a:	1. Thermopile 2. Thermometer 3. Pyroelectric 4. Piezoelectric
Static pressure is measured in a Pitot tube	1. Along the flow direction 2. In a void space along the flow 3. Right angles to the flow direction 4. None of the above
The Bragg Cell in a LDA is used for:	1. Splitting the laser beam 2. Merging the splitted laser beams 3. Creates the fringe patters 4. None of the above

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Comprehensive Question Preview

Search:

Questions	Choices
The functional phase in Screen printing consists of:	1. metal and/or metal-oxide powders 2. inorganic binder materials 3. Liquid that suspends the inorganic constituents 4. No functional phase is present
Thermocouple is a _____	1. Primary device 2. Secondary transducer 3. Tertiary transducer 4. None of the mentioned
What is the principle of operation of LVDT?	1. Mutual inductance 2. Self-inductance 3. Permanence 4. Reluctance

Questions	Choices
What will happen for resistivity metal and semiconductor if the temperature is increased?	1. Increases 2. Decreases 3. For metal increases and for semiconductor decreases 4. For metal decreases and for semiconductor increases
What will happen to resistance, if the length of the conductor is increased?	1. Decreases 2. No change 3. Increases 4. Doubles
Which among the following flow sensors is a differential pressure (d/p) flowmeter?	1. Pitot tube 2. Hot wire anemometer 3. Laser Doppler Anemometer 4. Doppler sensors
Which mode of piezo accelerometers are used for low gravitational (g) acceleration applications	1. Shear Mode 2. Flexural beam mode 3. Compression mode 4. None of the above

Questions	Choices
Which mode of piezo accelerometers are used for testing high-g shock level applications	1. Shear Mode 2. Flexural beam mode 3. Compression mode 4. None of the above
Which of the following are used to form photo transistors?	1. Two photo diodes 2. Three photo diodes 3. Normal diodes 4. None of the mentioned
Which of the following device is used for measuring relative humidity?	1. Capacitive pressure transducer 2. Hygrometer 3. Capacitive strain transducer 4. Capacitive moisture transducer

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Comprehensive Question Preview

Search:

Questions	Choices
Which of the following is an analog transducer?	1. Encoders 2. Strain gauge 3. Digital tachometers 4. Limit switches
Which of the following is true for a charge-mode accelerometers?	1. There is no in-built signal conditioning circuit 2. They use ordinary two-wire or coaxial cables 3. Both a & b 4. Neither a nor b
Which of the following materials can be used as photoconductive transducer?	1. Selenium 2. Silicon 3. Germanium 4. All of the mentioned

Questions	Choices
Which of the following materials shows an increase in permeability with increase in tensile stress?	1. Negative magnetostriction materials 2. Non magnetostriction materials 3. Positive magnetostriction materials 4. None of the mentioned
Which of the following represents correct conversion for magnetostrictive transducers?	1. Mechanical energy to magnetic energy 2. Mechanical energy to electrical energy 3. Magnetic energy to electrical energy 4. Mechanical energy to acoustic energy
Which of the following represents the output of Hall Effect transducer?	1. Hall potential 2. Emf 3. Applied voltage 4. Lorentz Voltage
Which one among the following is the most expensive differential type pressure sensor?	1. Mass Flowmeters 2. Pitot tube 3. Concentric orifice plate 4. Venturi tubes

Questions	Choices
Which sensor among the following is used in a quasi-static application?	1. Piezoelectric 2. Thermocouple 3. Magnetostrictive 4. Hall effect
Which type of inertial force forms the basis of mass flowmeters?	1. Centrifugal force 2. Frictional force 3. Gravitational force 4. Coriolis force
A Non-linear variation between Capacitance and displacement is observed for Capacitive type of transducers involving	1. Variable overlapping area between the plates 2. Variable distance between the plates 3. Variable dielectric constant 4. None of the above

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Comprehensive Question Preview

Search:

Questions	Choices
A piezo-electrical crystal generates voltage when subjected to ____ force.	1. Electrical 2. Mechanical 3. Gravity 4. All of the above
A temperature sensitive transducer when subjected to sudden temperature change takes 9 seconds to reach equilibrium conditions (3 time constants). Calculate the time constant and the time taken by the transducer to read half of the temperature difference.	1. 2 sec and 1.06 sec respectively 2. 3 sec and 2.08 sec respectively 3. 4 sec and 4.06 sec respectively 4. 3 sec and 4.06 sec respectively
A thermocouple works on which principle?	1. Joule effect 2. Thompson effect 3. Peltier effect 4. Seebeck effect

Questions	Choices
A car covers a distance of 5 km in 5 mins, its average speed is equal to	1. 1 km/h 2. 25 km/h 3. 60 km/h 4. 50 km/h
A girl with a mass of 40 kg wears heels with an area of 1 cm2 in contact with ground, pressure on ground is (take earth's gravitational field strength)	1. 4×10^{-5} 2. 4×10^{4} 3. 4×10^{5} 4. 40×10^{5}
A vibrating level sensors consists of	1. One piezoelectric oscillators 2. Two piezoelectric oscillators 3. Three piezoelectric oscillators 4. Four piezoelectric oscillators
A zero order system is the one in which output changes instantaneously as the input changes. The example of zero order system is	1. Potentiometer 2. Liquid-in-glass thermometer 3. Accelerometer 4. Transducer

Questions	Choices
Accelerometer is an example of which order instrument?	1. First order instrument 2. zero order instrument 3. second order instrument 4. third order instrument
All pH measurements are made with a	1. Glass electrode 2. Solid state electrode 3. Liquid ion exchange electrode 4. Redox electrode
Average angular velocity of body rotating at angle of 30° during time interval 5 seconds will be:	1. 6 rad/s 2. 7 rad/s 3. 8 rad/s 4. 10 rad/s

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Comprehensive Question Preview

Search:

Questions	Choices
Chromatographic analyser is used to measure the	1. Oxygen content in a sample 2. CO_2 content in a sample 3. CO content in a sample 4. Amount of individual gases in a sample
Compressions are formed where air pressure is	1. higher 2. lower 3. normal 4. zero
Consider a 1 cm thick specimen in which the acoustic power emerging is one half of that entering. Determine the attenuation coefficient of the medium	1. -4dB/cm 2. -3.01dB/cm 3. -3.7dB/cm 4. -3.98dB/cm

Questions	Choices
Determine the wavelength of ultrasound travelling in water with a velocity of 1480m/s and a frequency of 1MHz	1. 1.58 2. 1.62 3. 1.48 4. 1.34
Dipsticks are used for	1. Pressure measurement 2. Flow measurement 3. Displacement measurement 4. Level measurement
Following acts as detector in Optical sensor	1. Light emitting diode 2. Photo diode 3. Transistor 4. All of the above
For measuring air flow, _____ is used	1. Vane type anemometer 2. Electromagnetic flowmeter 3. Ultrasonic flowmeter 4. Vortex shedding meter
For a Strain gauge with negligible piezoresistive effect, the maximum Gauge factor for metals can be	1. 1 2. 0.5 3. 2 4. can't be calculated

Questions	Choices
For an inverting amplifier positive terminal of input is connected to _____ of 741 IC.	1. Pin number 3 2. Pin number 2 3. Pin number 1 4. Pin number 7
Hysteresis error in Bourdon tube can be minimized by	1. Using proper tube material 2. Using proper diameter and thickness of tube 3. Avoiding temperature cycling 4. Using it well within the designed pressure range

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Comprehensive Question Preview

Search:

Questions	Choices
If the velocities of ultrasound in soft tissue and bone are 1500 and 1400m/s, respectively, the critical angle of incidence is given by	1. 22 deg 2. 30 deg 3. 28 deg 4. 38 deg 69 deg
In radiation methods, the detector system is located at	1. The top of the liquid filled tank 2. The bottom of liquid filled tank 3. Middle of the liquid filled tank 4. Outside a liquid filled tank
In sound, reflection coefficient of 1 means	1. all incident energy is transmitted 2. none of the incident energy is transmitted 3. 1% of energy is reflected 4. 1% of energy is transmitted

Questions	Choices
In ultrasonic level gauge, the ultrasonic source is placed at the	1. Bottom of the vessel containing the liquid 2. Top of the vessel containing the liquid 3. Middle of the vessel containing the liquid 4. Far from the vessel containing the liquid
In a resistance thermometer, a metal wire shows a resistance of 500 Ω at ice point and 550 Ω at steam point, calculate temperature that corresponds to resistance of 535 Ω.	1. 60 °C 2. 65 °C 3. 70 °C 4. 75 °C
Local velocity is measured by a_____	1. Pitot tube 2. Venture tube 3. Orifice plate 4. Nozzle
Low resistance measurements are used in which of the following applications?	1. Armatures winding of machines ✓ 2. Resistors employed in electronic circuits 3. Insulation measurement 4. None of the above

Questions	Choices
Mass-spring seismic sensors measure directly the	1. Displacement 2. Velocity 3. Acceleration 4. Shock
Mercury in rubber strain gauge was wrapped around the forearm of a subject and it covers 6 cm of length. Venous occlusion was applied at time t=0 and the circumference of the forearm was increased by 0.5 cm in 64 secs. The initial limb circumference was 25.3 cm. the perfusion is _____ mL/min per 100mL of tissue.	1. 4 2. 3 3. 4.5 4. 3.7
Paramagnetic analyser is used to measure following gas sample in air	1. Oxygen 2. Nitrogen 3. Hydrocarbons 4. Carbon

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Comprehensive Question Preview

Search:

Questions	Choices
Pick up false statement about pressure measurements:	1. Low pressure is normally measure by manometers 2. Medium pressure by diaphragms or bellows 3. Medium and high pressure by Bourdon gauge 4. Absolute pressure by piezoelectric crystal
Pick up the false statement	1. Copper constantan thermocouple is used as a reference standard for calibration purposes 2. Iron- constantan thermocouple suffers from oxidation attack on iron wire, if exposed 3. Both wires of chromel-alumel thermocouples are prone to damage by sulphurous gases 4. Iron- constantan thermocouple is a stable couple resistant to both ocxidizing and reducing atmosphere, but needs protection from acidic vapours

Questions	Choices
The commonly used unit of conductivity is	1. Mho 2. m ohm/m 3. n mho/cm 4. ohm/m
The error caused in vibration measuring equipment due to non- compliance of bond made between sensor and the surface it is mounted is called:	1. Cross-coupling 2. Coupling compliance 3. Influence error 4. Subject loading by sensor
The primary and secondary coils in an LVDT are connected in which configuration?	1. In series but 180° out of phase either side of the primary 2. In parallel but 180° out of phase either side of the primary 3. In series but 90° out of phase either side of the primary 4. In parallel but 90° out of phase either side of the primary
The purpose of compensation for a thermocouple is	1. to increase voltage output 2. to decrease temperature sensitivity 3. to cancel unwanted voltage output of a thermocouple 4. used for high-temperature circuits

Questions	Choices
The smallest change which can be measured by the transducer of the range of 0 to 150 N force and resolution of 0.1% of full scale is	1. 0.1 N 2. 0.15 N 3. 0.3 N 4. 0.35 N
Thermal expansion of a solid is employed in:	1. Thermocouple 2. Resistance thermometer 3. Bulb thermometer 4. Bimetal element
To prevent self-heating errors becoming too great, the current through platinum element (100 ohm) is kept at a very small value:	1. 1 mA 2. 5 mA 3. 20 mA 4. 50 mA
To produce a change in deflection of 1.5 mm of the galvanometer of Wheatstone bridge, a change of 5Ω in the unknown arm of bridge is required. The sensitivity is	1. 0.2 mm/ Ω 2. 0.3 mm/ Ω 3. 0.4 mm/ Ω 4. 0.5 mm/ Ω

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Comprehensive Question Preview

Search:

Questions	Choices
Which effect is useful in measuring rapidly varying forces?	1. Piezoelectric 2. Photovoltaic 3. Strain gauge 4. Change of capacitance
Which measurement is a good guide to the quality of water	1. pH 2. conductivity 3. dissolved O2 content 4. turbidity
Which of the following sensors provide electrical voltage as the primary output?	1. Pressure measurement using strain gauge 2. Temperature measurement using thermocouple 3. Gas sensors 4. None of the above

Questions	Choices
Which one among the following is used as a reference electrode?	1. platinum electrode 2. calomel electrode 3. glass electrode 4. hydrogen electrode
Which temperature sensor has the highest sensitivity among the following?	1. Thermocouple 2. RTD 3. Thermistor 4. Thermometer
Which type bridge configuration of Strain gauge produces a non-linear output?	1. Full Bridge configuration 2. Half Bridge configuration 3. Quarter Bridge configuration 4. None of the above
Which type of device is suitable for dynamic force measurement?	1. Spring balance 2. Lever balance 3. Piezoelectric transducer 4. Proving ring

Questions	Choices
Which type of sensors develops an electric charge due to thermally induced stress upon exposure to heat energy/radiation?	1. Piezoelectric sensors 2. Pyroelectric sensors 3. Thermoelectric sensors 4. Photoelectric sensors
While going through a heap of junk in her garage, Jackie found an uncalibrated mercury thermometer. After a few experiments, she succeeded in calibrating it. Her notes show that ice point of thermometer corresponds to 3 cm while steam point corresponds to 30 cm of mercury. If Jackies calculations are fine then length = 15 cm would correspond to:	1. 46 °C 2. 44 °C 3. 42 °C 4. 40 °C
LEACH stands for	1. • Low Energy Adaptive Clustering Hierarchy 2. Low Energy Agglomerative Clustering Hypothesis 3. Low Energy Aggregate Channel Hypothesis 4. Low Energy Aggregate Channel Hierarchy

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Comprehensive Question Preview

Search:

Questions	Choices
Which of the following is the main advantage of PCM system	1. Lower power 2. Lower Bandwidth 3. Lower noise 4. High power
If a noiseless channel bandlimited to 5 kHz is sampled every 1msec, what will be the value of sampling frequency?	1. 10 samples/sec 2. 10000 samples/sec 3. 100 samples/sec 4. 1000 samples/sec
Information rate basically gives an idea about the generated information per _____ by source.	1. Second 2. Minute 3. Hour 4. Year

Questions	Choices
Which of the following is true about the AM and FM systems?	1. BW of FM < BW of AM; power FM > power AM; noise FM < noise AM 2. BW of FM < BW of AM; power FM < power AM; noise FM < noise AM 3. BW of FM > BW of AM; power FM < power AM; noise FM < noise AM 4. BW of FM < BW of AM; power FM > power AM; noise FM > noise AM
With respect to the envelopes of the AM and FM signal, which of the following is true	1. Both are of constant amplitude 2. Both vary according to the shape of the message signal 3. Envelope of AM is constant, FM is variable 4. Envelope of AM varies and FM envelope is constant
QPSK requires ----------transmission bandwidth of the BPSK	1. ¼ 2. ½ 3. 1/3 4. Twice
The constellation diagram of QPSK has	1. 2 2. 1 3. 8 4. 4

Questions	Choices
Which one of the following is used to detect the unknown signal	1. 16-PSK 2. PSK 3. QPSK 4. DPSK
A sinusoidal 400 Hz modulating signal of 2V amplitude frequency modulates a carrier and produces 70 kHz frequency deviation. The frequency sensitivity is given	1. 140 kHz/V 2. 110 kHz/V 3. 72 kHz/V 4. 35 kHz/V
Find the value of Quantization noise in Watts, in a Pulse code modulation system when a signal of 0-16 volts amplitude is quantized using 3-bit quantization.	1. 1/2 2. 1/3 3. 1/4 4. 1/5

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Comprehensive Question Preview

Search:

Questions	Choices
How many carrier frequencies are used in BFSK	1. 2 2. 1 3. 3 4. 4
Step size can be made smaller for smaller signals and larger for larger signals	1. PCM 2. DPCM 3. DM 4. ADM
Suppose we sample a signal at frequency Fs. If we collect 1500 samples in 5 seconds, what is Fs in Hz?	1. 300 2. 400 3. 500 4. 200
Symbols 1 and 0 are represented by pulse of equal positive and negative amplitudes is called as	1. NRZ- Polar 2. RZ- Polar 3. UNRZ- BiPolar 4. RZ- Unipolar

Questions	Choices
The modulating frequency in frequency modulation is increased from 10 kHz to 20 kHz. The bandwidth is	1. Doubled 2. Halved 3. Increased by 20 kHz 4. Increase tremendously
The Nyquist sampling rate for a signal band limited 5 kHz is	1. 100 kHz 2. 10 kHz 3. 2.5 kHz 4. 12.5 kHz
The output is zero for zero input, and the idle channel noise is correspondingly Zero	1. Mid-tread 2. Mid-riser 3. Non Uniform 4. Uniform
The peak amplitude of one signal level is 0; the other is the same as the amplitude of the carrier frequency	1. PSK 2. FSK 3. ASK 4. QPSK
The pulse rate in Delta modulation (DM) system is 50,000 per sec. The input signal is 5cos (5000t) + 10 cos (2000t). The minimum value of step size to avoid slop overload distortion.	1. 0.4 2. 0.5 3. 0.44 4. 0.9 ✓

Questions	Choices
Typical human voice is centred around	1. 1400-6000Hz 2. 400-600Hz 3. 280-3000Hz 4. 1400-1800Hz

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Comprehensive Question Preview

Search:

Questions	Choices
When the modulating frequency is doubled, the modulation index is halved, and the modulating voltage remains constant. The modulation system is	1. amplitude modulation 2. phase modulation 3. frequency modulation 4. none
In PCM, the parameter varied in accordance with the amplitude of the modulating signal is	1. Phase 2. Amplitude 3. Frequency 4. None
The process of converting the analog sample into discrete form is called	1. Modulation 2. Multiplexing 3. Quantization 4. Sampling
Which modulation technique transmits at higher data rate	1. BPSK 2. QPSK 3. 16 – PSK 4. 32 – PSK

Questions	Choices
An FM station is operating at 100 MHz. Maximum frequency deviation is 75 kHz. If the highest modulating frequency is limited to 15 kHz, find the modulation index and approximate bandwidth required by the system	1. 10, 180kHz 2. 5, 150kHz 3. 5, 180kHz 4. 10, 150kHz
A FM signal has a carrier swing of 100 kHz when the modulating signal has a frequency of 8 kHz. The modulation index is	1. 22.5 2. 12.5 3. 7.5 4. 15.5
An FM wave uses a 2 – 5V amplitude and 1500Hz modulating frequency and has a modulation index of 10. What is the frequency sensitivity when the amplitude of message is maximum?	1. 2500Hz 2. 500Hz 3. 50000Hz 4. 5000Hz
A signal has frequency components from 300 Hz to 1.8 KHz. The minimum possible rate at which the signal has to be sampled is ---	1. 3600 samples 2. 36000 samples 3. 360 samples 4. 36 samples
A carrier is frequency modulated with a sinusoidal signal of 8 kHz, resulting in a maximum deviation of 20 kHz. If amplitude of modulating sinusoid is increased by a factor 3 and its frequency is lowered to 1 kHz. The bandwidth of new modulated signal is:	1. 320 kHz 2. 3.2 kHz 3. 32 kHz 4. 3200 kHz

Questions	Choices
A 4 GHz carrier is DSB-SC modulated by a low-pass message signal with maximum frequency of 2 MHz. The resultant signal is to be ideally sampled. The minimum frequency of the sampling impulse train should be	1. 4 MHz 2. 8 MHz 3. 8 GHz 4. 8.004 GHz

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Comprehensive Question Preview

Search:

Questions	Choices
If a carrier of a 100 percent modulated AM wave is suppressed, the percentage power saving will be:	1. 166.66 2. 36.66 3. 6.66 4. 66.66
If the amplitude of the modulating signal applied to a phase modulator is constant, the output signal will be	1. Zero 2. Above the carrier frequency 3. The carrier frequency 4. Below the carrier frequency
In a double side-band (DSB) full carrier AM transmission system, if the modulation index is doubled, then what is the factor that the ratio of total sideband power to the carrier power increases?	1. 1 2. 2 3. 4 4. 3
In an FM system the deviation is 4 kHz where the modulating voltage is 3 V and modulating frequency is 400 Hz. If the modulating frequency is increased to 1000 Hz and its amplitude to 5 V, then the modulation index will:	1. remains the same 2. increase 3. decrease 4. be indeterminate

Questions	Choices
In commercial TV transmission in India, picture and speech signals are modulated respectively	1. VSB and VSB 2. VSB and SSB 3. VSB and FM 4. FM and VSB
One of the following methods cannot be used to remove the unwanted sidebands in SSB, that is:	1. filter system 2. phase shift method 3. third method 4. balanced modulator
The choice of the product RC in a simple envelope detector using a diode and an RC circuit is governed by	1. both the lowest and the highest modulation frequencies 2. the depth of modulation and the lowest modulation frequency 3. the highest modulation frequency and the depth of modulation 4. the carrier frequency ✓
The maximum frequency deviation for the signal $x_c(t) = 10 \cos [1010 \pi t + 10 \sin 2\pi(104t)]$	1. 600 kHz 2. 160 kHz 3. 60 kHz 4. 100 kHz ← closest 1040 Hz
The maximum power efficiency of an AM modulator is	1. 25% 2. 15% 3. 33% 4. 95%

Questions	Choices
1 bit quantizer is a	1. Hard limiter 2. Two level comparator 3. Hard limiter & Two level comparator 4. None of the mentioned

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Comprehensive Question Preview

Search:

Questions	Choices
Antipodal signal sets are those vectors that can be illustrated as	1. Two 90 opposing vector 2. Two 180 opposing vector 3. Two 360 opposing vector 4. none
CDMA rejects	1. Narrow band interference 2. Wide band interference 3. Narrow & Wide band interference 4. None of the mentioned
CDMA uses	1. Hard hand off 2. Soft hand off 3. Hard & Soft hand off 4. None of the mentioned
For maximal length sequence, the sequence repetition clock pulses p is given by	1. 2^n-1 2. 2^n+1 3. 2^n 4. 2n-1

Questions	Choices
FSK reception is	1. Phase Coherent 2. Phase Non Coherent 3. Phase Coherent & non coherent 4. None of the above
Granular noise occurs when	1. Step size is too small 2. Step size is too large 3. There is interference from the adjacent channel 4. Both a and b are correct
If step size is increased _____ occurs.	1. Slope overload distortion 2. Granular noise 3. Both of the mentioned 4. None of the mentioned
If the initial pulse of 1000 is fed to shift register, after how many clock pulses does the sequence repeat?	1. 14 2. 15 3. 16 4. 17

Questions	Choices
In Alternate Mark Inversion (AMI) is	1. 0 is encoded as positive pulse and 1 is encoded as negative pulse 2. 0 is encoded as no pulse and 1 is encoded as negative pulse 3. 0 is encoded as negative pulse and 1 is encoded as positive pulse 4. 0 is encoded as no pulse and 1 is encoded as positive or negative pulse
In Binary Phase Shift Keying system, the binary symbols 1 and 0 are represented by carrier with phase shift of	1. $\pi/2$ 2. π /4 3. π 4. 2π

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Comprehensive Question Preview

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Questions	Choices
In Delta modulation,	1. One bit per sample is transmitted 2. All the coded bits used for sampling are transmitted 3. The step size is fixed 4. Both a and c are correct
In digital transmission, the modulation technique that requires minimum bandwidth is	1. Delta modulation 2. PCM 3. DPCM 4. PAM
In On-Off keying, the carrier signal is transmitted with signal value ‘1’ and ‘0’ indicates	1. No carrier 2. Half the carrier amplitude 3. Amplitude of modulating signal 4. All of the above
In PCM encoding, quantization level varies as a function of _____	1. Frequency 2. Amplitude 3. Square of frequency 4. Square of amplitude

Questions	Choices
In uniform quantization process	1. The step size remains same 2. Step size varies according to the values of the input signal 3. The quantizer has linear characteristics 4. Both a and c are correct
Matched filter is a _____ technique.	1. Modulation 2. Demodulation 3. Modulation & Demodulation 4. None of the above
Orthonormal set is a set of all vectors that are	1. Mutually orthonormal and are of unit length 2. Mutually orthonormal and of null length 3. Both a & b 4. None of the above
Polar coding is a technique in which	1. 1 is transmitted by a positive pulse and 0 is transmitted by negative pulse 2. 1 is transmitted by a positive pulse and 0 is transmitted by zero volts 3. 1 is transmitted by alternative positive and negative pulse and 0 is transmitted by zero volt 4. None of the above

Questions	Choices
Pseudo ternary signalling format is a technique in which	1. 1 is transmitted by a positive pulse and 0 is transmitted by negative pulse 2. 1 is transmitted by a positive pulse and 0 is transmitted by zero volts 3. 1 is transmitted by alternative positive and negative pulse and 0 is transmitted by zero volt 4. None of the above
QAM uses _____ as the dimensions.	1. In phase 2. Quadrature 3. In phase & Quadrature 4. biphase

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Comprehensive Question Preview

Search:

Questions	Choices
QPSK system modulates at the rate of	1. 1 bit/ symbol 2. 2 bit/ symbol 3. 3 bit/ symbol 4. 4 bit/ symbol
QPSK system uses a phase shift of	1. π/2 2. π /4 3. π 4. π /8
Quantization noise can be reduced by _____ the number of levels	1. Increasing 2. Decreasing 3. Doubling 4. unchanged
signal which has gentle shift from one frequency level to another is called as	1. ASK 2. PSK 3. FSK 4. QPSK

Questions	Choices
SQNR can be improved by _____ sampling rate.	1. Increasing 2. Decreasing 3. Does not depend 4. None of the mentioned
TDMA allows the user to have	1. Use of same frequency channel for same time slot 2. Use of same frequency channel for different time slot 3. Use of same time slot for different frequency channel 4. Use of different time slot for different frequency channels
TDMA is a multiple access technique that has	1. Different users in different time slots 2. Each user is assigned unique frequency slots 3. Each user is assigned a unique code sequence 4. Each signal is modulated with frequency modulation technique
The binary waveform used to generate BPSK signal is encoded in	1. Manchester coding 2. Bipolar NRZ format 3. Differential coding 4. Polar NRZ format

Questions	Choices
The coherent modulation techniques are	1. BPSK 2. QPSK 3. MSK 4. All of the above
The data rate of QPSK is _____ of BPSK.	1. Thrice 2. Four times 3. Twice 4. Same

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Comprehensive Question Preview

Search:

Questions	Choices
The maximum bandwidth is occupied by	1. BASK 2. BPSK 3. BFSK 4. All of the above
The measure of width of the main lobe is called as _____	1. Null to null bandwidth 2. Half power bandwidth 3. Normalized bandwidth 4. Absolute bandwidth
The number of bits of data transmitted per second is called	1. Data signaling rate 2. Modulation rate 3. Coding 4. All of the above
The point at which the output signal power has fallen to 0.707 of its peak value is called as _____	1. 3db point 2. Half power point 3. Both of the mentioned 4. None of the mentioned

Questions	Choices
The primary communication resource is	1. Transmitted power 2. Received power 3. Efficiency 4. None of the mentioned
The probability of error of QPSK is _____ than that of BPSK	1. Higher 2. Lower 3. Same 4. Equal
The process of converting the analog sample into discrete form is called	1. Modulation 2. Multiplexing 3. Quantization 4. Sampling
The process of data conversion along with formatting the data is called as _____	1. Formatting 2. Modulation 3. Source coding 4. Amplifying
The properties used for pseudorandom sequence are	1. Balance 2. Run 3. Correlation 4. All of the mentioned

Questions	Choices
The sequence of operations in which PCM is done is	1. Sampling, quantizing, encoding 2. Sampling, encoding, quantizing 3. Quantizing, sampling, encoding 4. None of the above

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Comprehensive Question Preview

Search:

Questions	Choices
The signals which are obtained by encoding each quantized signal into a digital word is called as	1. PAM signal 2. PCM signal 3. PPM signal 4. DM
The technique that may be used to reduce the side band power is	1. MSK 2. BPSK 3. Gaussian minimum shift keying 4. BFSK
The term heterodyning refers to	1. Frequency conversion 2. Frequency mixing 3. Frequency conversion & mixing 4. None of the above
Uniform quantizer is also known as	1. Low rise type 2. Mid rise type 3. High rise type 4. None of the mentioned

Questions	Choices
Which has least probability of error	1. BPSK 2. BFSK 3. BASK 4. QPSK
Which helps in maintaining the step size?	1. DPCM 2. PCM 3. delta modulation 4. Adaptive delta modulation
Which is better for avoiding jamming?	1. Direct sequence spread spectrum 2. Frequency hopping spread spectrum 3. Time hopping spread spectrum 4. none
Which is called as on-off keying?	1. Amplitude shift keying 2. Frequency shift keying 3. Unipolar format 4. Bipolar Format
Which system makes the detection difficult for all users other than the intended users?	1. Low probability of intercept 2. Low probability of detection 3. Low probability of intercept & detection 4. None of the above

Questions	Choices
The band width of the signal is:$t(103\pi+200\cos 2t108\ \pi) = 10\cos[2t(x$The angle modulated signal is given by	1. 200 kHz 2. 400 kHz 3. 600 kHz 4. 800 kHz

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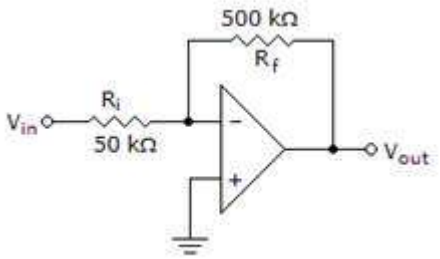
Comprehensive Question Preview

Search:

Questions	Choices
EEG is done for the analysis of	1.Brain function 2.Heart function 3. Sleep analysis 4. Eye function
The analog signals are categorized into _____	1.ONE 2. TWO 3. THREE 4. FOUR
Failure of heat sink in an ECG apparatus may lead to _____ noise	1. High frequency 2. EMG artifacts 3. Baseline drift 4. low frequency
To detect the presence of QRS complex one has to use _____ method	1. Template matching 2. adaptive filters 3. optimal filters 4. LMS filters
What is a transducer	1.Converts Analog signal to digital signal 2.Converts Digital Signal to analog Signal 3. convert one form of energy into another form of energy 4.It will not convert

Questions	Choices
_____ is a recursive filter	1. Butterworth 2. Adaptive 3. Chebeyshev 4. RLS filter
After the filter adapts itself, the output of the system y(n) is the estimate of _____	1. Desired signal 2. Primary signal 3. Noise signal 4. Reference signal
For the efficient usage of adaptive filters	1.The desired signal should be correlated with the reference signal 2. The noise should be correlated with the reference signal 3.The noise should be periodic 4.The noise should be deterministic
Which estimation method is suitable to identify linearity in the biological signals	1. Spectral estimation 2. Temporal estimation 3. Coherence estimation 4. Frequency estimation
If an input signal of –0.5 V were applied, determine the output voltage. 	1. –5 V 2. 5 V 3. 10 V 4. –10 V

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Comprehensive Question Preview

Search:

Questions	Choices
Improper fixation of electrodes during the ECG acquisition leads to _____ noise	1. High frequency 2. low frequency 3. EMG artifacts 4. Baseline drift
Power-line interference may be difficult to detect in	1.Carotid pulse 2. EMG 3.ECG 4.Respiratory signal
Which is not a bio electrical potential	1. ECG 2. EMG 3. Body temperature 4. Cell potential

Questions	Choices
Which is not a bio signal	1. ECG 2. EMG 3. Body temperature 4. BMI
8086 can be operated in two modes:they are _____ and _____.	1. Minimum, Maximum 2. External, internal 3. Mode1, Mode2 4. Data, address
8086 have_____ of segment registers	1. 2 2. 4 3. 6 4. 8

Questions	Choices
8086 processor has _____ address pins out of which _____ number of pins are used as data pins	1. 16,8 2. 16,14 3. 20,16 4. 20,8
Two types of pattern classification	1. single layer and double layer 2. multiple layer and hidden layer 3. supervised and unsupervised 4. parametric and supervised
Which is optimal filter	1. Weiner 2.Notch 3.Comb 4.IIR
Spectral estimates derived from the autocorrelation function are known as	1. Autocorrelation 2. Spectrogram 3. Corrologram 4. Spectrum

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Comprehensive Question Preview

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Questions	Choices
Best example for ANC filter	1.S1 and S2 separation 2.fetus ECG extraction 3.ECG filter 4. EMG filter
Infinite Impulse Response (IIR) filters use	1. Past output 2.Present input and past input 3.past outputs together with past inputs 4.only past outputs
PCG signal is----------in the PSD	1.Non stationary 2.Stationary 3.quasi stationary 4. deterministic
Which filter is suitable for convolved signal and noise	1. comb filter 2. notch filter 3. homomorphic 4. pan Tompkins

Questions	Choices
Which is linear prediction model	1.AR 2. MA 3. ARMA 4.pole and zero
Which of the following is best suited for I I R filter when compared with the FIR filter	1.Lower sidelobes in stopband 2. Higher Sidelobes in stopband 3.Lower sidelobes in Passband 4. No sidelobes in stopband
A causal and stable I I R filter has	1.Linear phase 2. No Linear phase 3.Linear amplitude 4. No Amplitude
In the design a IIR Digital filter for the conversion of analog filter in to Digital domain the desirable property is	1.The axis in the s - plane should map outside the unit circle in the z - Plane 2. The Left Half Plane(LHP) of the s - plane should map in to the unit circle in the Z -Plane 3.The Left Half Plane(LHP) of the s-plane should map outside the unit circle in the z-Plane 4.The Right Half Plane(RHP) of the s-plane should map in to the unit circle in the Z -Plane
The most common technique for the design of I I R Digital filter is	1.Direct Method 2.Indirect method 3. Recursive method 4.non recursive method

Questions	Choices
Which of the I I R Filter design method is antialiasing method?	1. The method of mapping of differentials 2. Impulse invariant method 3.Bilinear transformation 4. Matched Z - transformation technique

Comprehensive Question Preview

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Questions	Choices
I I R digital filters are of the following nature	1. Recursive 2. Non Recursive 3. Reversive 4. Non Reversive
In I I R digital filter the present output depends on	1. Present and previous Inputs only 2.Present input and previous outputs only 3.Present input only 4. Present Input, Previous input and output
In the case of I I R filter which of the following is true if the phase distortion is tolerable	1. More parameters for design 2. More memory requirement 3. Lower computational Complexity 4.Higher computational complexity

Questions	Choices
Power line noise can be removed from ECG signal using	1. Optimal filter 2. Smoothing filter 3. Derivative filter 4. RLS filter
Roll-off factor is	1.The bandwidth occupied beyond the Nyquist Bandwidth of the filter 2.The performance of the filter or device 3.Aliasing effect 4. Filter property
Which among the following represent/s the characteristic/s of an ideal filter?	1. Constant gain in passband 2.constant gain in stop band 3.non Linear Phase Response 4. non linear frequency response
The IIR filter designing involves	1. Designing of analog filter in analog domain and transforming into digital domain 2. Designing of digital filter in analog domain and transforming into digital domain 3.Designing of analog filter in digital domain and transforming into analog domain 4. Designing of digital filter in digital domain and transforming into analog domain

Questions	Choices
The similarity between the Fourier transform and the z transform is that	1. Both convert frequency spectrum domain to discrete time domain 2. Both convert discrete time domain to frequency spectrum domain 3.Both convert analog signal to digital signal 4. Both convert digital signal to analog signal
_____algorithm make use of translational table	1. TP 2. AZTEC 3. CORTES 4. Huffman
Base line drift in ECG	1. Notch filter 2. low pass filter 3. high pass filter 4. ensemble average

Comprehensive Question Preview

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Questions	Choices
A desired frequency response has its _____ which is the desired unit pulse sequence	1. DCT 2. DTFT 3. FFT 4. IDTFT
Lossy data compression is done using	1. DCT 2. IDCT 3. Wavelet 4. Vector quantization

Questions	Choices
Residual signal means	1. difference between the noise signal and the original signal 2. difference between the reconstructed signal and the original signal 3. difference between the primary signal and the original signal 4. Original signal
Which method has the low computational burden	1. DCT 2. IDCT 3. FFT 4. VQ
Bell graph is an example of _____ distribution	1. Gaussian PDF 2. Normalised PDF 3. Uniform PDF 4. Non- uniform PDF

Questions	Choices
The speech signal is obtained after	1. Analog to digital conversion 2. Digital to analog conversion 3. Modulation 4. Quantization
Turning point algorithm use the _____ logical Boolean operators	1. NOT 2. OR 3. Both a and b 4. AND
White noise is significant because:	1. of its random property 2. mean is zero 3. ACF = power of signal 4. ACF = Impulse signal

Questions	Choices
A data reduction algorithm must also represent the data with acceptable	1. Fidelity 2. Reproducibility 3. Mean 4. Variance
AZTEC post processing needs _____ filter to remove its jagged appearance	1. High pass filter 2. Median filter 3. Low pass filter 4. notch filter

Comprehensive Question Preview

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Questions	Choices
AZTEC reconstruction process produces an ECG signal with _____ quantization	1.Steep 2. Step 3. Triangle 4. Trapezoidal
Clustering can be done using	1.DCT 2. KLT 3. VQ 4. FFT
DCT can be referred as	1. Odd part of Fourier series 2. Even part of Fourier series 3. odd part of inverse Fourier series 4. even part of inverse Fourier series

Questions	Choices
DCT converts an image or audio block into its equivalent	1. Time coefficients 2. phase coefficients 3. frequency coefficients 4.step coefficients
DCTs are known as	1. FCT 2. FFT 3. DFT 4. KLT
Decorrelate property significant for	1.Wavelet 2. IDFT 3. KLT 4. DCT
FIR filters	1.Are non recursive 2.Do not adapt any feedback 3.Are recursive 4.Use feedback
Hilbert transformer is also called as	1.Special type of IIR filters 2.Special type of FIR filters 3. Special filters 4. High pass filter

Questions	Choices
How do you scale the gain of a FIR filter?	1. Multiply all coefficients 2.Multiply all coefficients by scale factor 3.Multiply all coefficients by its center coefficients 4. Multiply all coefficients by its last coefficient
IIR filter produces	1. Finite outputs 2. n outputs 3. Infinite outputs 4. Depends on input

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Comprehensive Question Preview

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Questions	Choices
Line detection makes use of	1. Higher order interpolation 2. Lower order interpolation 3. Zero order interpolation 4. Interpolation
MAC operation represents	1. Multiply-accumulate 2. memory access code 3. multiple addition code 4. Modulated array code

Questions	Choices
Major disadvantage of Turning point algorithm is	1. Distortion time 2. Short term time distortion 3. Long term time distortion 4. No distortion
Notch filter is	1. Band pass 2. Band reject or Band stop 3. Low pass 4. high pass
One can also compute DCTs via	1. DCT 2. FFT 3. IDCT 4. KLT
Signal detection and estimation can be done using	1. Wavelet 2. IDFT 3. KLT 4. DCT

Questions	Choices
Speech information compression is carried out by	1.FFT 2. IDCT 3. DCT 4. DTFT
The CORTES algorithm is a hybrid of the	1. TP and AZTEC algorithms 2. LMS and TP 3. TP and RLS 4. AZTEC and LMS
The data reduction algorithm's reduction ratio depends on the	1. Error tolerance 2. sampling frequency 3. pulse width 4. data size

Questions	Choices
The reconstruction process of Huffman coding recovers the _____ original data	1. Partially 2. Fully 3. Perfectly 4. Half

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Comprehensive Question Preview

Search:

Questions	Choices
Vector quantization is also called as _____ quantization	1.Perfect 2. Partial 3. Block 4. Serial
What is the condition for linear phase in FIR filters?	1.coefficients are non-symmetrical around the center coefficient 2.coefficients are symmetry around the last coefficient 3.coefficients are symmetrical around the last coefficient 4.coefficients are symmetrical around the center coefficient
What is the duration of the unit sample response of a digital filter?	1. Finite 2. Infinite 3. Impulse 4.Zero

Questions	Choices
Which algorithm is called as lossless algorithm	1. TP 2. AZTEC 3. CORTES 4. Huffman
Which algorithm produces better signal fidelity for the same reduction ratio	1. TP 2. AZTEC 3. Fan 4. CORTES
Which transform is similar to PCA	1.Wavelet 2. IDFT 3. KLT 4. DCT

Questions	Choices
Neither the Impulse response nor the phase response of the analog filter Preserved in the digital filter in the following method	1. The method of mapping of differentials 2. Impulse invariant method 3. Bilinear transformation 4. Matched Z - transformation technique
What is the disadvantage of impulse invariant method	1. Aliasing 2. one to one mapping 3.anti aliasing 4. warping
The I I R filter design method thatovercomes the limitation of applicability to only Lowpass filter and a limited class of bandpass filters is	1. Approximation of derivatives 2. Impulse Invariance 3. Bilinear Transformation 4. Frequency sampling
This program code will be executed continuously: STAT: MOV A, #01H JNZ STAT	1. Yes 2. No 3. Not enough information 4. Not always

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Comprehensive Question Preview

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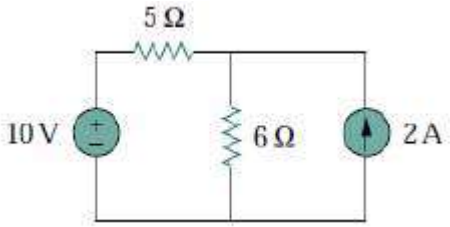
Questions	Choices
Capacitive reactance is more when	1. capacitance is less and frequency of supply is less 2. capacitance is less and frequency of supply is more 3. capacitance is more and frequency of supply is less 4. capacitance is more and frequency of supply is more
The power consumed in a circuit element will be least when the phase difference between the current and voltage is	1. 180° 2. 90° 3. 45° 4. 360°

Questions	Choices
A heater is rated as 230 V, 10 kW, A.C. The value 230 V refers to	1. average voltage 2. peak voltage 3. rms voltage 4. exponential voltage
If two sinusoids of the same frequency but of different amplitudes and phase angles are subtracted, the resultant is	1. a sinusoid of the same frequency 2. a sinusoid of half the original frequency 3. a sinusoid of double the frequency 4. a sinusoid of triple the frequency
In a purely inductive circuit	1. Reactive power is zero 2. Apparent power is zero 3. Actual power is zero 4. Actual power is unity

Questions	Choices
In any ac circuit always	1. Apparent power is more than the actual power 2. Apparent power is equal to the actual power 3. Actual power is more than the reactive power 4. Reactive power is more than the apparent power
Two sinusoidal currents are given by $i_1 = 10 \sin (\omega t + \pi/3)$ and $i_2 = 15 \sin (\omega t - \pi/4)$. Phase difference between them is	1. 150^{o} 2. 105^{o} 3. 135^{o} 4. 50^{o}
The magnetic field intensity (in A/m) at the centre of a circular coil of diameter 1 metre and carrying current of 2 A is	1. 8 2. 4 3. 3 4. 2

Questions	Choices
The total electric flux through any closed surface surrounding charges is equal to the amount of the charge enclosed". The above statement is associated with	1. Coulomb's square law 2. Gauss's law 3. Maxwell's first law 4. Maxwell's second law
Find out voltage across 6 ohm for the following circuit 	1. 11.9 V 2. -11.9 V 3. 10.9 V 4. 8.9 V

Comprehensive Question Preview

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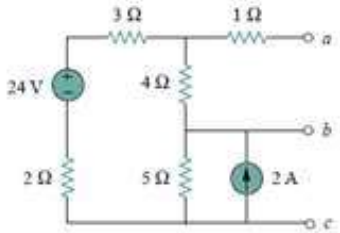
Questions	Choices
For lossless line,	1. $\alpha=0, \beta=0$ 2. $\alpha=0, \beta\neq0$ 3. $\alpha\neq0, \beta=0$ 4. $\alpha\neq0, \beta\neq0$
The input impedance of a $\lambda/2$ transformer is	1. terminal impedance 2. terminal admittance 3. characteristics impedance 4. Wave impedance

Questions	Choices
Form Factor is the ratio of	1. average value/r.m.s. value 2. average value/peak value 3. r.m.s. value/average value 4. r.m.s. value/2*average value
If two sine waves of the same frequency have a phase difference of π radians, then	1. both will reach their minimum values at the same instant 2. both will reach their maximum values at the same instant 3. when one wave reaches its maximum value, the other will reach its minimum value 4. when one wave reaches its minimum value, the other will reach its minimum value
Poor power factor reduces load handling capability of electrical system	1. results in more power losses in the electrical system 2. results in low power losses in the electrical system 3. overloads alternators, transformers and distribution lines 4. results in more voltage drop in the line

Questions	Choices
Power factor of an electrical circuit is equal to	1. R/Z 2. cosine of phase angle difference between current and voltage 3. kW/kVA 4. all options are true
The characteristic impedances Z_0 of a transmission line is given by, (where R, L, G, C are the unit length parameters)	1. $(R + j\omega L)/(G + j\omega C)$ 2. $(R + j\omega L)(G + j\omega C)$ 3. $(R+ j\omega L)^2 / (G +j\omega C)$ 4. $[(R+ j\omega L)/ (G +j\omega C)]^{1/2}$
The reflection coefficient over the normalized Z_l	1. $(Z_l - 1)/ (Z_l +1)$ 2. $(Z_l + 1)/ (Z_l -1)$ 3. $(Z_s - 1)/ (Z_s +1)$ 4. none of these

Questions	Choices
Travel to length λg/2 over the line corresponds to rotation over smith chart by	1. 180° 2. 360° 3. 90° 4. 270°
Determine Thevenin resistance across b-c terminals.  	1. 5 Ω 2. 3.21 Ω 3. 5.21 Ω 4. 9 Ω

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Comprehensive Question Preview

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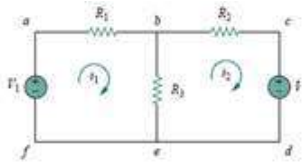
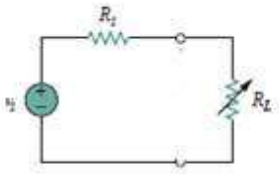
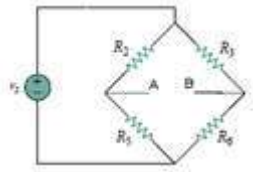
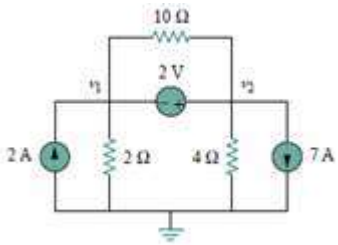
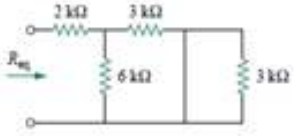
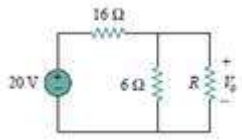
Questions	Choices
Find the size of the delay in the following program if the crystal frequency is 11.0592 MHz DELAY: MOV R3, #200--------1 M/C HERE: DJNZ R3, HERE-------2 M/C RET----------2M/C	1. 236µs 2. 136µs 3. 336µs 4. 436µs

Show the status of CY, AC and P flags after the addition of 9CH and 64H in the following instructions:
MOV A, #9CH
ADD A, #64H
	1. CY =1, P=0, AC=1
	2. CY =1, P=1, AC=1
	3. CY =0, P=0, AC=1
	4. CY =1, P=0, AC=0

What is the addressing mode for the following instruction: MOV R0, #40H	1. Indirect Mode 2. Direct Mode 3. Immediate Mode 4. Index Mode
What percentage of duty cycle is generated by the following code: SETB P1.3 LCALL DELAY LCALL DELAY CLR P1.3 LCALL DELAY SJMP BACK	1. 25% 2. 75% 3. 66% 4. 50%

Questions	Choices
For the Fig given below 'abcdefa' is 	1. loop 2. mesh 3. loop and mesh 4. independent mesh
In Fig., R_s=25Ω & V_s= 50V. Find the maximum power delivered to the R_L 	1. 25 W 2. 50 W 3. 250 W 4. 125 W
In the Fig., find the Thevenin's resistance across the terminals A & B. R_2=R_3=10Ω, R_5= R_6 = 20 Ω.  40/3	1. 6.66 Ω 2. 0 Ω 3. 15 Ω 4. Infinite Ω
In the Fig given below the current flowing through 4ohm resistor is 	1. Directly proportional to 10 Ω resistor 2. Indirectly proportional to 10 Ω resistor 3. Indirectly proportional to square root of 10 Ω resistor 4. Independent of 10 Ω resistor
The equivalent resistance of the circuit in Fig. 	1. 4 k Ω 2. 7 k Ω 3. 8 k Ω 4. 9 k Ω

Questions	Choices
The value of R in Fig. 4 if $V_0 = 4V$ 	1. 10 Ω 2. 11 Ω 3. 12 Ω 4. 14 Ω

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Comprehensive Question Preview

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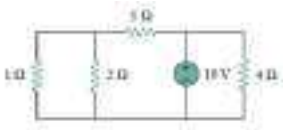
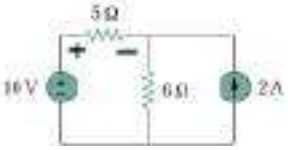
Questions	Choices
Determine,No.of meshes ,No.of nodes and No.of branches for the following circuit. 	1. 3,4,5 2. 4,3,5 3. 4,5,3 4. 3,5,4
Find out voltage across 5 ohm for the following circuit 	1. 1.9V 2. -1.9V 3. 0.9V 4. -0.9V
If wet soil has $\sigma = 10^{-2}$ mho/m, $\varepsilon_r = 15$, $\mu_r = 1$, f = 60 Hz, it is a	1. good dielectric 2. Good conductor 3. semi- conductor 4. magnetic material
ARM7DI operates in which mode?	1. Big Endian 2. Little Endian 3. Both big and little Endian 4. Neither big nor little Endian

Questions	Choices
How many registers are there in ARM7?	1. 35 register(28 GPR and 7 SPR) 2. 37 registers(28 GPR and 9 SPR) 3. 37 registers(31 GPR and 6 SPR) 4. 35 register(30 GPR and 5 SPR)
In the ARM, PC is implemented using ____	1. Caches 2. Heaps 3. General purpose register 4. Stack
In which of the following ARM processors virtual memory is present?	1. ARM7DI 2. ARM7TDMI-S 3. ARM7TDMI 4. ARM7EJ-S
The additional duplicate register used in ARM machines are called as _____	1. Copied-registers 2. Banked registers 3. EXtra registers 4. Extential registers
The banked registers are used for _____	1. Switching between supervisor and interrupt mode 2. Extended storing 3. Same as other general purpose registers 4. None of the mentioned

Questions	Choices
What is the instruction set used by ARM7?	1. 16-bit instruction set 2. 32-bit instruction set 3. 64-bit instruction set 4. 8-bit instruction set

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Comprehensive Question Preview

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Questions	Choices
What is the processor used by ARM7?	1. 8-bit CISC 2. 8-bit RISC 3. 32-bit CISC 4. 32-bit RISC
ALU (Arithmetic and Logic Unit) of 8085 microprocessor consists of	1. Accumulator, temporary register, arithmetic and logic circuits 2. Accumulator, arithmetic, logic circuits and five flags 3. Accumulator, arithmetic and logic circuits 4. Accumulator, temporary register, arithmetic, logic circuits and five flags
Consider the following registers: 1. Accumulator and flag register 2. B and C register 3. D and E register 4. H and L register Which of these 8-bit registers of 8085 microprocessor can be paired together to make a 16-bit register?	1. 1 ,3 and 4 2. 2 ,3 and 4 3. 1, 2 and 3 4. 1, 2 and 4

Questions	Choices
Consider the following statements: In 8085 microprocessor, data-bus and address bus are multiplexed in order to I)Increase the speed of microprocessor. II)Reduce the number of pins. III)Connect more peripheral chips. Which of these statements is/are correct?	1. (I) only 2. (II) only 3. (II) & (III) 4. (I), (II) & (III)
consider the following I) Sign flag II) Trap flag III) Parity flag IV) Auxiliary carry flag Which one of the above flags is/are present in 8085 microprocessor?	1. (I) only 2. (I) & (II) 3. (II) & (III) 4. (I) ,(III) & (IV)
In 8085 name of the 16 bit registers is	1. stack pointer 2. program counter 3. both A and B 4. none of these
In an intel 8085A microprocessor, why is READY signal used?	1. To indicate to user that the microprocessor is working and is ready for use. 2. To provide proper WAIT states when the microprocessor is communicating with a slow peripheral device. 3. To slow down a fast peripheral device so as to communicate at the microprocessor's device. 4. None of the above.

Questions	Choices
In intel 8085A microprocessor ALE signal is made high to	1. Enable the data bus to be used as low order address bus 2. To latch data D0-D7 from data bus 3. To disable data bus 4. To achieve all the functions listed above
Processor status word of 8085 microprocessor has five flags. They are	1. S, Z, AC, P, CY 2. S, OV, AC, P, CY 3. S, Z, OV, P, CY 4. S, Z, AC, P, OV
Temporary registers in 8085 are	1. B and C 2. D and E 3. H and L 4. W and Z

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Comprehensive Question Preview

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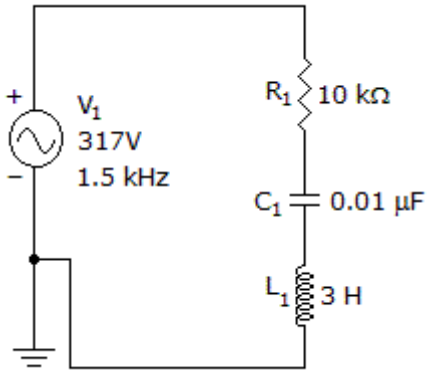
Questions	Choices
The 16 bit flag of 8086 microprocessor is responsible to indicate _____.	1. the condition of result of ALU operation 2. the condition of memory 3. the result of addition 4. the result of subtraction
The register AX is formed by grouping _____.	1. AH & AL 2. BH & BL 3. CH & CL 4. DH & DL
Which instruction is required to rotate the content of accumulator one bit right along with carry?	1. RLC 2. RAL 3. RRC 4. RAR

Questions	Choices
Which of the following statements for Intel 8085 is correct?	1. Program Counter (PC) specifies the address of the instruction last executed 2. PC specifies the address of the instruction being executed 3. PC specifies the address of the instruction to be executed 4. PC specifies the number of instructions executed so far
Which of the following is true?	1. $I_B = \beta I_c$ 2. $I_B = \beta + 1/ I_c$ 3. $I_B = I_c/\beta$ 4. $I_B = I_c/ \beta - 1$
If the gain of a closed-loop inverting amplifier is 3.9, with an input resistor value of 1.6 kilohms, what value of feedback resistor is necessary?	1. 6240 ohms 2. 2.4 kilohms 3. 410 ohms 4. 0.62 kilohms
The major difference between ground and virtual ground is that virtual ground is only a	1. voltage reference 2. current reference 3. power reference 4. difference reference

Questions	Choices
What is the applied voltage for a series RLC circuit when I_T = 3 mA, V_L = 30 V, V_C = 18 V, and R = 1000 ohms?	1. 3.00 V 2. 12.37 V 3. -12.37 V 4. 34.98 V
What is the impedance of the circuit? 	1. 12.2 kΩ 2. 14.5 kΩ 3. 20.3 kΩ 4. 33.3 kΩ
With negative feedback, the returning signal	1. aids the input signal 2. is proportional to output current 3. opposes the input signal 4. is proportional to differential voltage gain

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Comprehensive Question Preview

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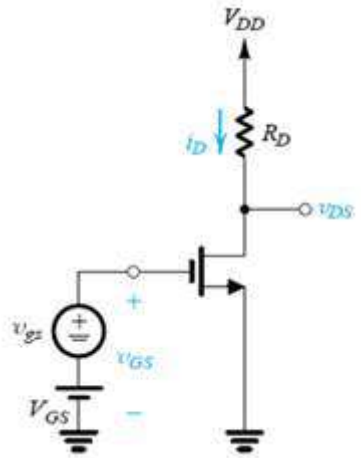
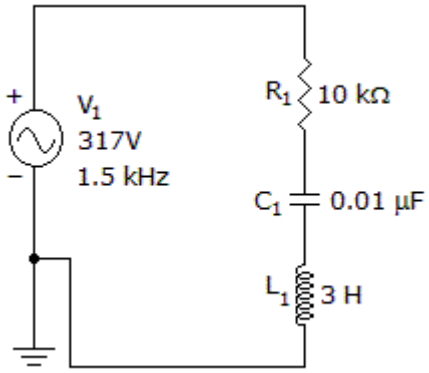
Questions	Choices
A transistor with β = 120 is biased to operate at a dc collector current of 1.2 mA. Find the value of gm	1. 12mA/V 2. 24 mA/V 3. 36 mA/V 4. 48 mA/V
The signal to be amplified is current signal and the output desired is a voltage signal. Which of the following amplifier can perform this task?	1. Voltage amplifier 2. Current amplifier 3. Transconductance amplifier 4. Transresistance amplifier
The thermal runway is avoided in a self bias because_____	1. of its independence of β 2. of the positive feedback produced by the emitter resistor 3. of the negative feedback produced by the emitter resistor 4. of its dependence of β
The magnitude of the thermal voltage is given by	1. k/Tq 2. kT/q 3. q/Kt 4. Tk/q

Questions	Choices
Which of the following is the fastest switching device?	1. JFET 2. BJT 3. Triode 4. MOSFET
Consider the amplifier circuit shown below. The transistor is specified to have V_t = 0.4 V, k_n = 0.4 mA/V^2, W/L = 10 and λ = 0. Also, let V_{DD} = 1.8V, R_D = 17.5kΩ, V_{GS} = 0.6V and v_{gs} = 0V. Find I_D. 	1. 0.08 mA 2. 0.16 mA 3. 0.4 mA 4. 0.8 mA
What is the voltage across R1, C1, and L1? 	1. V_R = 156 V, V_c = 165 V, V_L = 441 V 2. V_R = 178 V, V_c = 187 V, V_L = 503 V 3. V_R = 219 V, V_c = 232 V, V_L = 619 V 4. V_R = -219 V, V_c = -232 V, V_L = -619 V

Questions	Choices
A delta connected system has three resistances of value RΩ each. The resistance in one of the three arms of the equivalent star system is	1. R/3 2. 3R 3. R/2 4. 3R/2
The expression to find three phase real power is	1. $\sqrt{3}\ V_{ph}\ I_{ph}\ \cos\Phi$ 2. $\sqrt{3}\ V_L\ I_L\ \cos\Phi$ 3. $\sqrt{3}\ V_L\ I_L\ \sin\Phi$ 4. $\sqrt{3}\ V_L\ I_L\ \text{Cos}\Phi\ \ \text{Sin}\Phi$
Two thin parallel wires are carrying current along the same direction. The force experienced by one due to other is Perpendicular to the lines and attractive	1. Only open loop 2. only closed loop 3. both open and closed loop 4. Back loop

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Comprehensive Question Preview

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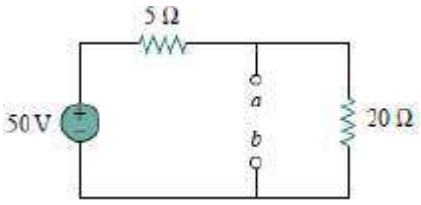
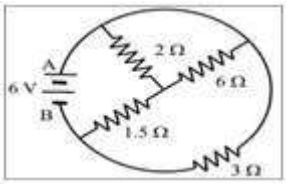
Questions	Choices
Which mode is known as the dominant mode for Rectangular waveguide?	1.TM_{10} and TE_{10} 2. TM_{10} 3. TM_{11} 4.TE_{10}
Norton's resistance across the terminals 'a' and 'b' of the circuit in Fig. 	1. 2 Ohms 2. 4 Ohms 3. 22 Ohms 4. 12 Ohms
Consider a circuit,which is energised by 10V and three resistors(R1 = 2,R2 =3 and R3) are connectd in series with the source. Design the R3 such that it absorbs half of the power delivered by source.	1. 2 Ω 2. 3 Ω 3. 4 Ω 4. 5 Ω
A 100μF capacitor (initially relaxed) is connected to a 10 V DC source with internal resistance of 2 ohm. The initial current through the capacitor (immediately after the instant of connection) is	1. 10 A 2. 5 A 3. 1 A 4. 0.5 A

Questions	Choices
A 230 V 60 Hz supply is connected to a capacitor of value 20 µF . The reactance of the capacitor is	1. 132.62 Ω 2. 833.2 Ω 3. 7.54 mΩ 4. 1.2 mΩ
A 2Ω resistor carrying 2A current will dissipate power equal to	1. 4 W 2. 5 W 3. 8 W 4. 16 W
A 2Ω resistor carrying 2A current will dissipate power equal to 	1. 4 W 2. 8 W 3. 16 W 4. 32 W
A 60 ohm resistive load is connected to a practical voltage source of 40 V. The source resistance can be tuned between 20 ohm and 80 ohm. Calculate the maximum power delivered by the source.	1. 15 W 2. 13.33 W 3. 6.65 W 4. 3.5 W
A capacitor of 100 µF (initially relaxed) is connected to a battery of 10 V at time t=0; The current through the capacitor reaches the steady state value of 0 A in 100mS. What is the time constant of the circuit 20 msec	1. 100 mSec 2. 50 msec 3. 30 msec 4. 20 sec

Questions	Choices
A filter attenuates all frequencies between 10 KHz and 15KHz. It’s a	1. Low pass filter 2. High pass filter 3. Band pass filter 4. Band elimination filter

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Comprehensive Question Preview

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Questions	Choices
A network graph contains 5 nodes and 8 branches. How many number of loop it contain?	1. 2 2. 3 3. 4 4. 5
A potentiometer in series with a fixed resistance of value 100 Ohm is connected to a DC voltage source of 5V. The current in the resistor combination is 10 mA . The resistance setting of potentiometer is	1. 4000 Ohm 2. 400 Ohm 3. 40 Ohm 4. 4 Ohm
A 2 Ω resistor dissipates 8 W power. What is the current through the resistor?	1. 4 A 2. 3 A 3. 2 A 4. 1 A
A delta connected system has three resistances of value 72 Ω each. The resistance in one of the three arms of the equivalent star system is 24 ohm	1. 12 Ω 2. 92 Ω 3. 108 Ω 4. 216 Ω

Questions	Choices
An acquisition geometry consisting of in-beam arrangement of sensors for image acquisition	1. A photodiode 2. Sensor strips 3. Sensor arrays 4. CMOS
An acquisition geometry consisting of in-line arrangement of sensors for image acquisition	1. A photodiode 2. Sensor strips 3. Sensor arrays 4. CMOS
Best suited registration method for identification of emboli_____	1. Feature based 2. Elastic deformation based 3. Intensity based 4. Any of these
Best suited registration method for identification of calcification in the bone_____	1. Feature based 2. Elastic deformation based 3. Intensity based 4. Any of these
Best suited registration method for identification of chest congestion _____	1. Rigid based 2. Elastic deformation based 3. Intensity based 4. Principal axis

Questions	Choices
Dark characteristics in an image are better solved using _____	1. Gaussian Transform 2. Laplacian Transform 3. Histogram Specification 4. Power-law Transformation

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Comprehensive Question Preview

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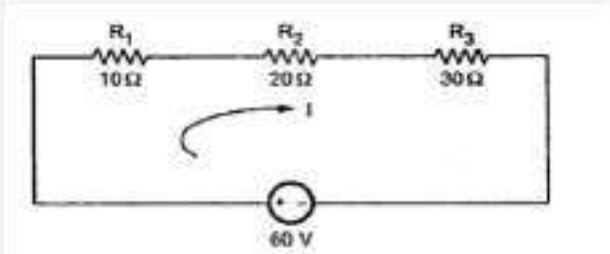
Questions	Choices
Find out the wrong statement	1. Current leads voltage in a capacitor 2. Current leads voltage in an inductor 3. Voltage leads current in an inductor 4. Voltage and current are in phase in a resistor
Find the voltage across the 20 resistance shown in the fig. 	1. 10 V 2. 15 V 3. 20 V 4. 30 V
Five resistors of equal value are connected in parallel to a 12V battery. If one of the resistors is open circuited	1. The current in individual branches increase 2. The currents in individual branches decrease 3. The total current drawn from the battery increase 4. The total current drawn from the battery decrease

Questions	Choices
How is negative of an image obtained with intensity levels [0,L-1] with “r” and “s” being pixel values?	1. s = L – 1 + r 2. s = L – 1 – r 3. s = L + 1 + r 4. s = L + 1 - r
Identify the pair which is not a dual, from the following :	1. Current – Voltage 2. Loop – Node 3. Short circuit – Open circuit 4. Resistance – Capacitance
If A is a subset of pixels, pixels p and q are said to be _____ if there exists a path between them consisting of pixels entirely in A.	1. Connected 2. Continuous 3. Ambiguous 4. Not connected
If A is a subset of pixels, pixels p and q are said to be _____ if there exists no path between them consisting of pixels entirely in A.	1. Connected 2. Continuous 3. Ambiguous 4. Not connected not 100% sure
In an unbalanced star load Z_R = 10 Ω Z_Y = j10 Ω AND Z_B = 5 Ω . Z_{RY} in the equivalent delta circuit is	1. 40 Ω 2. (20 + j10) Ω 3. (5 + j10/3) Ω 4. (10 + j30) Ω

Questions	Choices
In general _____ is the process that happens in frequency domain when the sources of input and filter are connected in series	1. convolution 2. coorelation 3. addition 4. multiplication
In general _____ is the process that happens in spatial domain when the two sources of inputs are connected in series	1. convolution 2. coorelation 3. addition 4. multiplication

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Comprehensive Question Preview

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Questions	Choices
Name the operation that is always done bit wise	1. Arithmetic and Logical operation 2. Filtering using a template 3. Image enhancement 4. Image convolution
Name the operation whose result is always dependent on the intensity of the neighbourhood pixels	1. Neither Mean nor Median 2. Mean 3. Median 4. Both Mean and Median
Practical voltage sources differ from the ideal voltage source because of	1. Low internal impedance in parallel 2. Low internal impedance in series 3. High internal impedance in parallel 4. High internal impedance in series
The constraint for maximizing the power transfer from the source to the load is	1. $R_{TH} < R_L$ 2. $R_{TH} > R_L$ 3. $R_{TH} = 2 R_L$ 4. $R_{TH} = R_L$

Questions	Choices
The current through a series RLC circuit at resonance is 5A. The current at cut-off frequencies is	1. 0 A 2. 2.5 A 3. 3.53 A 4. 5 A
The impedance of a circuit is (20+j12.5) ohm. The power factor is	1. 32^o 2. -32^o 3. 0.848 (lag) 4. 0.848 (lead)
The most familiar single sensor used for Image Acquisition is	1. Microdensitometer 2. CMOS 3. Photodiode 4. MOSFET
The quality factor of a series resonant circuit is 50. It is connected to an alternating source v= 10 Sin 314t . What is the maximum voltage across the capacitor at resonance	1. 50 V 2. 70.7 V 3. 500 V 4. 707 V
The RMS value of an alternating waveform v= $200Sin(314t - 45^o)$ is	1. 127.2 V 2. 141.4 V 3. 282.8 V 4. 314.4 V

Questions	Choices
The thevenin impedance of a circuit is 5.47 $\cos(4t-85.4^{o})$ Ohms. The value of a pure resistive load for maximum power transfer condition is :	1. 5.45 ohm 2. 0.44 ohm 3. 0 Ohm 4. 5.47 ohm

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Questions	Choices
The transition between continuous values of the image function and its digital equivalent is called _____	1. Quantisation 2. Sampling 3. Aliasing 4. Resolution
The transition between continuous values of the image function and its discrete equivalent is called _____	1. Quantisation 2. Sampling 3. Aliasing 4. Resolution
The unit for Real power is	1. kW 2. VA 3. KVA 4. KWh
The voltage across a circuit branch is given by v = 282.8 Sin 314t and current through the branch is given by I = 14.14 Sin (314t – 60^o) ; The impedance in the branch is	1. 19.97 Sin (314t – 60^o) 2. 20 Sin (314t +60^o) 3. 20 Sin (314t) 4. 19.97 Sin (314t)

Questions	Choices
The voltage drop across a 5 µF capacitor is 100 V. What is the energy stored in the capacitor	1. 0.025 Joules 2. 0.25 Joules 3. 2.5 Joules 4. 25 Joules
To segment a non stationary object from its changing background _____ may be needed	1. Background subtraction 2. Inverse filtering 3. Complementing of image 4. Matched filtering
Two resistors R1(=10 Ohm) and R2(=5 Ohm) are connected in parallel to a 3A current source. What is the current through R2	1. 1 A 2. 2 A 3. 2.5 A 4. 3 A
Voltage v = 10 Sin (314t) and current i = 10 Sin(314t) in a load. What is the power consumed?	1. 100 W 2. 50 W 3. 20 W 4. 12.5 W
Voltage – current relations in different types of circuit elements are given below. Find out the wrong relation.	1. $i = C * (dv/dt)$ 2. $i = G * v$ 3. $i = L * \int v\,dt + i(0)$ 4. $v = (1/C) * \int i\,dt + v(0)$

Questions	Choices
What is the integral of dc step signal ?	1. Step signal 2. Ramp signal 3. Pulse signal 4. Parabolic signal

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Comprehensive Question Preview

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Questions	Choices
Which of the following circuit components acts as open circuit to dc signal?	1. Resistances 2. Capacitors 3. Inductors 4. Capacitor and Inductors
Which of the following circuit components opposes the change in the circuit voltage?	1. Resistances 2. Capacitors 3. Inductors 4.Switch
Which of the following quantities the same in all parts of the parallel circuit?	1. Current 2. Voltage 3. Power 4. Resistance
Of the following, the incorrect relation is	1. $D = \varepsilon E$ 2. $B = \mu H$ 3. $J = \sigma E$ 4. $B = \mu D$

Questions	Choices
Rectangular Waveguide behaves as	1. Low pass filter 2. All pass filter 3. High pass filter 4. Waveguide cant behave as filter
Rectangular Waveguide behaves as	1. High pass filter 2. Low pass filter 3. All pass filter 4. Waveguide cant behave as filter
What is the range of magnitude of the reflection coefficient due to passive load 0 to 1	1. 1 to + ∞ 2. 0.5 to 1 3. 0 to ∞ 4. -1 to 1
What is the theoretical range of VSWR	1. - ∞ to + ∞ 2. 0 to 1 3. 1 to ∞ 4. -1 to 1
Which of these transmission line supports Quasi-TEM mode	1. Strip line 2. Parallel Plate waveguide 3. Microstrip line and Stripline Both 4. Microstrip line

Questions	Choices
Which of these transmission lines supports Quasi-TEM mode	1. Microstrip line 2. Strip line 3. Microstrip line and Stripline Both 4. Parallel Plate waveguide

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Questions	Choices
Which statement is false for Admittance Smith chart.	1. Left of the smith chart is open circuit end 2. Right of the smith chart is short circuit end 3. VSWR at centre of smith chart is 2 4. Reflection coefficient at centre of smith chart is 1
---------- states that the concentration of a solute is proportional to the absorbance	1. Plank's law 2. Beer-Lambert law 3. Max's law 4. Henry's law
---------- analyzer has the advantage of being programmed to perform only those tests which are requested.	1. Continuous flow 2. Centrifugal 3. Discrete sample 4. None of the above

Questions	Choices
_____ is insensitive to turbulent flow of gases.	1. Fleish type pneumotachometer 2. Lily type pneumotachometer 3. Turbine pneumotachometer 4. Hot wire anemometer
_____ of infrared gas analyzer allows the energy to pass alternately through the reference and sample tubes.	1. Filter 2. Collimator 3. Coaxial chopper 4. Magnetic pole pieces
_____ gas is commonly used for insufflating the abdominal cavity for laparoscopy.	1. Carbon-di-oxide 2. Oxygen 3. Helium 4. All the above
A breath that has a greater volume than the preset VT _____	1. PEEP 2. PIP 3. Tidal Volume 4. Sigh
An object nearer to a converging lens than its focal point always has a/an _____ image.	1. Inverted 2. Same in size 3. Virtual 4. Smaller size

Questions	Choices
At what pressure is the oxygen maintained at E tanks?	1. 2200PSI 2. 745PSI 3. 1800PSI 4. 1200PSI
EMG and EEG recorders use _____ amplifiers	1. Ac coupled 2. Chopper stabilized dc 3. Carrier 4. dc bridge

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Comprehensive Question Preview

Search:

Questions	Choices
Filters used to reject the 50Hz noise picked up from power lines are called	1. Low pass filters 2. High pass filters 3. Band pass filters 4. Notch Filters
Gain of instrumentation amplifier is calculated using_____	1. R_2/R_1 2. $1+ (2R/R_g)$ 3. $(1+2R_g) /R$ 4. $1+ (2R_g/R)$
High frequency response of doppler ultrasonic blood flowmeter results in_____	1. Wall motion artefacts 2. Sound induced artifact 3. Vascular artifact 4. Non-linearity into the i/p o/p calibration curve
How many electrodes are present in 10/20 electrode placement system of EEG machine?	1. 10 2. 11 3. 20 4. 21

Questions	Choices
If the spirometer is used for time-dependant parameters, then it must have a flat frequency response of upto _____.	1. 72 Hz 2. 200 Hz 3. 12 Hz 4. 80 Hz
In analytical instruments, ---------- has higher sensitivity but more susceptible to interfering reactions with other substances.	1. GDH 2. GOD 3. Ferricyanide 4. GDH-FAD
In the pulse height analyser, ----------gives an output pulse only when there is an impulse in only one of the input channels.	1. Schmitt trigger circuit 2. anti-coincidence circuit 3. upper discriminator circuit 4. lower discriminator circuit
In which procedure, the needle-point electrodes are stuck into the tissue and kept steady?	1. Fulguration 2. Dessication 3. Haemostasis 4. Coagulation
Inspiration : Expiration ratio of a ventilator is usually set at _____ ratio.	1. 1:1 2. 2:1 3. 1:2 4. 3:1

Questions	Choices
Lap choly refers to removal of _____	1. Ovarian cysts 2. Gall Bladder 3. Pancreas 4. endometriosis

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Comprehensive Question Preview

Search:

Questions	Choices
Largest amount of air that we can breathe in or out in one inspiration/expiration is called the _____	1. Tidal Volume 2. Vital capacity 3. Functional residual capacity 4. Residual Volume
LVDS technology provides data rate upto_____.	1. 600Mbps 2. 480 Mbps 3. 580 Mbps 4. 800 Mbps
Polarogram is used for the analysis of _____	1. O_2 2. N_2O 3. CO_2 4. CO
Proportioning systems automatically intercedes to maintain the concentration of O_2 and N_2O in the ratio of	1. 1:1 2. 1:3 3. 3:1 4. 2:3

Questions	Choices
Silver chloride tip is present in ------	1. Glass electrode 2. Reference electrode 3. Combination electrode 4. B and C
Since Gamma photons cannot be bent by using lenses, ---------- is used to selectively absorb unwanted radiation.	1. Correction circuitry 2. PMT 3. Position localization circuitry 4. Collimator
The 3rd sound of a phonocardiogram recording corresponds to___	1. Mitral valve closure 2. Aortic Valve closure 3. Pulmonary valve closure 4. termination of ventricular filling
The _____scissor is especially useful for cutting secured duct or artery in laparoscopic surgery.	1. Hook type 2. Micro-tip type 3. Serrated type 4. Straight type
The artifact caused due to the slow establishment of electrochemical equilibrium at the electrode-skin interface is _____	1. Interference from the power line 2. shifting of the baseline 3. muscle tremor 4. None of the above

Questions	Choices
The blood leak level, for normal operation, is set at _____ of hb / litre of dialysate.	1. 35 mg 2. 38 mg 3. 25 mg 4. 65 mg

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Comprehensive Question Preview

Search:

Questions	Choices
The cell counter considers_____ as the normal range of white blood cell in male.	1. 4.5-11M 2. 4.5-11 K 3. 150-350 K 4. 15K – 150k
The dialyzer used with portable kidney machines is of -_____ type	1. Parallel plate 2. coil type 3. hollow fibre type 4. All the above
The filter which has a figure of merit, _____ has the narrowest band pass.	1. Q=1 2. Q=5 3. Q=10 4. Q=20
The first instrument to be inserted during a laparoscopy procedure is _____	1. Trocar 2. Insufflator 3. Veress needle 4. Cannula

Questions	Choices
The fluid for flushing system in a blood pressure monitoring, should not exceed the rate of _____ for adults.	1. 6 ml/hr 2. 300 ml/hr 3. 3 ml/hr 4. 0.5 ml/hr
The maximum power delivered by a short wave diathermy machine is _____.	1. 250 W 2. 750W 3. 500W 4. 125W
The minimum breakdown voltage for a pressure transducer in a medical transducer is _____	1. 1000 Vdc 2. 4000 Vdc 3. 6000 Vdc 4. 10000 Vdc
The nominal pressure value in the arterial system is_____	1. 30-300mmHg 2. 5-15 mmHg 3. 6-25 mmHg 4. 80-120 mmHg
The power of He-Ne laser utilized in laser Doppler blood flowmeter is	1. 50mW 2. 5mW 3. 500mW 4. 50MW

Questions	Choices
The proportioning pumps of a dialysis machine delivers concentrate and water in the ratio of	1. 35:1 2. 3.5: 1 3. 1:35 4. 1:3.5

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Comprehensive Question Preview

Search:

Questions	Choices
The tone signal derived from the counter at 250Hz, facilitates the identification of _____	1. Haemostasis 2. Cutting 3. Coagulation 4. Fulgration
The total internal energy change in a bomb calorimeter is	1. -Cv ΔT 2. 0 3. ΔHc/ΔT 4. ΔHc/-Cv
The writing part of an EEG machine is usually _____.	1. Direct writing galvanometer 2. inkjet recording system 3. Potentiometric recorder 4. Thermal array recorder
What is the frequency component of alpha waves?	1. Over 13 Hz 2. 8.1- 13 Hz 3. 4.1 – 8 Hz 4. upto 4 Hz

Questions	Choices
What is used to block light from a laser and let other light through	1. Natural density 2. Color 3. Interfernce 4. Spatial
When the radio frequency output is applied to the pads of a short wave diathermy unit, _____ is manifested as heat.	1. Radio frequency 2. dielectric losses of capacitor 3. absorption in the tissue 4. All the above
Which is the majority component of dialysate solution?	1. Chloride 2. Calcium 3. Potassium 4. Sodium
Which is the preferred electrode placement location for EMG?	1. Oriented on the motor point 2. near the tendon 3. positioned on the outer edge of muscle 4. parallel to muscle fibers
Which of the following is a commonly used metastable radionuclide?	1. Thallium -201 2. Technetium -99m 3. Iodine -131 4. Gallium -67

Questions	Choices
Which of the following material is sensitive to light?	1. Photosensitive 2. Photoresist 3. Light sensitive 4. Maser

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Comprehensive Question Preview

Search:

Questions	Choices
Which of these pnuemotachometers use a light emitting diode for measurement of sample air flow?	1. Fleisch type 2.Lily type 3. Venturi type 4. Turbine type
Which one the following is not used in colorimeter?	1. Cuvette 2. lens 3. Dialyzer 4. Colored filters
If we push data onto the stack then the stack pointer	1. increases with every push 2. decreases with every push 3. none of the mentioned 4. both of the mentioned
Bit-addressable memory locations are:	1. 10H through 1FH 2. 20H through 2FH 3. 30H through 3FH 4. 40H through 4FH

Questions	Choices
Find the period of the machine cycle when crystal frequency is 16 MHz for 8051	1. 1.085µs 2. 0.75µs 3. 1.385µs 4. 1.25µs
For an 8051 system of 11.0592 MHz, how long does it take to execute the instruction -MUL AB	1. 1.085µs 2. 2.17µs 3. 4.34µs 4. 3.36µs
If the crystal frequency is 22MHz, what will be the baud rate if TH1=-12 with SMOD=0	1. 19,093 2. 38,156 3. 4,773 4. 9,546
MOV A, @ R1 will:	1. copy R1 to the accumulator 2. copy the accumulator to R1 3. copy the contents of memory whose address is in R1 to the accumulator 4. copy the accumulator to the contents of memory whose address is in R1
Show the instructions to enable the serial interrupt, timer 0 interrupt and external hardware interrupt(EX1).	1. MOV IE, #10011110 B 2. MOV IE, #10110010 B 3. MOV IE, #10000111 B 4. MOV IE, #10010110 B

Questions	Choices
The correct value of TMOD to operate in Mode 1 Timer 1 is:	1. 10H 2. 01H 3. 20H 4. 02H

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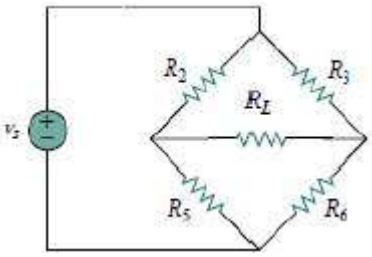
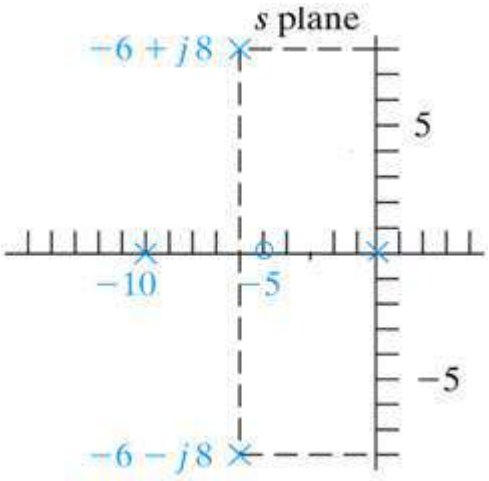
Comprehensive Question Preview

Search:

Questions	Choices
The E pin requires what kind of plus to latch in information at the data pins of the LCD.	1. High 2. Low 3. Low to high 4. High to low
The internal RAM memory of the 8051 is:	1. 32 bytes 2. 64 bytes 3. 128 bytes 4. 256 bytes
The total external data memory that can be interfaced to the 8051 is:	1. 32K 2. 64K 3. 128K 4. 256K
With XTAL = 11.0592MHz, find the TH1 value needed to have a baud rate of 9600	1. 3 2. 12 3. 24 4. 6

Questions	Choices
In circular waveguide the dominant mode is	1. TE_{10} 2. TE_{11} 3. TE_{20} 4. TE_{21}
The velocity factor of a transmission line depends on	1. Temperature Doppler effect 2. skin effect 3. Relative permittivity of dielectric 4. Doppler effect
In an ac circuit, a low value of KVAR compared with KW indicates	1. Maximum load current 2. Low efficiency 3. High p.f 4. Low p.f
In Fig. ,if $R_2=R_5=10\Omega$, $R_3= R_6 = 20\ \Omega$ maximum power will be delivered to the load when 	1. 10 Ω 2. 15 Ω 3. 20 Ω 4. 30 Ω

Questions	Choices
What is the transfer function of the system from the s-plane? 	1. $\frac{(s+5)}{(s+10)(s)(s+6-j8)(s+6+j8)}$ 2. $\frac{(s-5)}{(s+10)(s)(s+6-j8)(s+6+j8)}$ 3. $\frac{(s+5)}{(s-10)(s)(s+6-j8)(s+6+j8)}$ 4. $\frac{(s-5)}{(s-10)(s)(s+6-j8)(s+6+j8)}$
2's complement representation of a 16 bit number (one sign bit and 15 magnitude bits) is FFFF. Its magnitude in decimal representation is	1.0 2.1 3.65535 4.32767

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Comprehensive Question Preview

Search:

Questions	Choices
According to Moore circuit, the output of synchronous sequential circuit depend/s on _____ of flip flop	1.Past output 2.Next output 3.Present output 4.External inouts
In a counter Modulus refers to	1.A method used to fabricate decade counter units 2. The modulus of elasticity, or the ability of a circuit to be stretched from one mode to another 3.An input on a counter that is used to set the counter state, such as UP/DOWN 4.The maximum number of states in a counter sequence
Stokes theorem relates ___ integral to a _____ integral.	1. volume, surface 2. surface, line 3. line, surface 4. Surface, volume
If A_{DM} = 3500 and A_{CM} = 0.35, the CMRR is	1. 1225 2. 10000 3. 40dB 4. 50dB

Questions	Choices
The nonlinear relation between the analog and digital frequencies is called	1.aliasing 2.warping 3.prewarping 4.antialiasing
Convert BCD 0001 0111 to binary.	1. 10101 2. 10010 3. 10001 4. 11000
The electric susceptibility of a dielectric is 4, its permittivity is	1. $2.26 \quad 10^{-9}$ F/m 2. $4.42 \quad 10^{-7}$ F/m 3. 5 F/m 4. $1.26 \quad 10^{-3}$ F/m
A change in 300mV in base emitter voltage causes a change of 10 μA in the base current. Determine the dynamic input resistance.	1. 20kΩ 2. 10kΩ 3. 30kΩ 4. 60kΩ
General representation of the frequency response curve is called	1. Bode Plot 2. Miller Plot 3. Thevenin Plot 4. Bandwidth Plot

Questions	Choices
Increase in collector emitter voltage from 5V to 8V causes increase in collector current from 5mA to 5.3mA. Determine the dynamic output resistance.	1. 20kΩ 2. 10kΩ 3. 50kΩ 4. 60kΩ

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Comprehensive Question Preview

Search:

Questions	Choices
Single-time-constant (STC) networks are those networks that are composed of, or can be reduced to	1. One reactive component (L or C) and a resistance (R) 2. Only capacitive component (C) and resistance (R) 3. Only inductive component (L) and resistance (R) 4. Reactive components (L, C or both L and C) and resistance (R)
The application of a CC configured transistor is_____	1. voltage multiplier 2. level shifter 3. Rectification 4. impedance matching
The CC configuration has an input resistance_____	1. 500kΩ 2. 750kΩ 3. 600kΩ 4. 400kΩ
---------- **is called warping**	1. distortion in the frequency axis 2.distortion in the time axis 3.ripples 4. noise

Questions	Choices
_____ is the effect caused by the use of an insufficient number of intensity levels in smooth areas of a digital image.	1. Gaussian smooth 2. Contouring 3. False Contouring 4. Interpolation
A 100 Ω, 1 W resistor and a 800 Ω, 2 W resistor are connected in series . The maximum dc voltage that can be applied continuously to the series circuit without exceeding the power limit of any of the resistor is	1. 40 V 2. 45 V 3. 80 V 4. 90 V
A 5-bit asynchronous binary counter is made up of five flip-flops, each with a 12 ns propagation delay. The total propagation delay (tp(total)) is	1. 12 ms 2. 24 ns 3. 48 ns 4. 60 ns
A basic S-R flip-flop can be constructed by cross-coupling of which basic logic gates?	1. AND or OR gates 2. XOR or XNOR gates 3. NOR or NAND gates 4. AND or NOR gates
A bidirectional 4-bit shift register is storing the nibble 1101. Its input is HIGH. The nibble 1011 is waiting to be entered on the serial data-input line. After three clock pulses, the shift register is storing _____	1. 1101 2. 0111 3. 0001 4. 1110

Questions	Choices
A digital system is required to amplify a binary encoded audio signal. The user should be able to control the gain of the amplifier from a minimum to a maximum in 100 increments. The minimum number of bits required to encode in a straight binary is	1. 8 2. 6 3. 7 4. 5

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Comprehensive Question Preview

Search:

Questions	Choices
A hexadecimal odometer displays F 52 F. The next reading will be	1. F52E 2. G52F 3. F53F 4. F53O
A J-K flip-flop with J = 1 and K = 1 has a 20 kHz clock input. The Q output is	1. Constantly LOW 2. Constantly HIGH 3. A 20 kHz square wave 4. A 10 kHz square wave
A JK flip flop has tpd= 12 ns. The largest modulus of a ripple counter using these flip flops and operating at 10 MHz is ……..	1. 16 2. 64 3. 128 4. 256
A multistage amplifier employs five stages each of which has a power gain of 30. What is the total gain of the amplifier in db. If a negative feedback of 10 dB is employed, find the resultant gain	1. 73.85 dB and 63.85 dB 2. 147.7 dB and 137.7 dB 3. 7.38 dB and 17.38 dB 4. 17.38 dB and 7.38 dB

Questions	Choices
A ripple counter's speed is limited by the propagation delay of:	1. each flip-flop 2. all flip-flops and gates 3. the flip-flops only with gates 4. only circuit gates
A sequence of equally spaced timing pulses may be easily generated by which type of counter circuit?	1. Ring shift 2. Clock 3. Johnson 4. Binary
A spatial domain filter of the corresponding filter in frequency domain can be obtained by applying which of the following operation(s) on filter in frequency domain?	1. Fourier transform 2. Inverse Fourier transform 3. Laplace transform 4. None of the mentioned
An 8-bit serial in/serial out shift register is used with a clock frequency of 150 kHz. What is the time delay between the serial input and the Q3 output?	1. 1.67 s 2. 26.67 s 3. 26.7 ms 4. 26.67 µs
An alternate approach to median filtering is _____	1. Use a mask 2. Gaussian filter 3. Sharpening 4. Laplacian filter

Questions	Choices
An amplifier has a voltage gain of 1000 and an upper cut-off frequency of 160 kHz. Above its cut-off frequency the response falls at upto 6 decibels per octave. Negative feedback is applied to extend the bandwidth to 1 MHz. The new gain will be	1. 16 dB 2. 24 dB 3. 44 dB 4. 55 dB

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Comprehensive Question Preview

Search:

Questions	Choices
Which of the following depicts the main functionality of the Bit-plane slicing?	1. Highlighting a specific range of gray levels in an image 2. Highlighting the contribution made to total image appearance by specific bits 3. Highlighting the contribution made to total image appearance by specific byte 4. Highlighting the contribution made to total image appearance by specific pixels
Which of the following fails to work on dark intensity distributions?	1. Laplacian Transform 2. Gaussian Transform 3. Histogram Equalization 4. Power-law Transformation
Which of the following filter(s) attenuates high frequency while passing low frequencies of an image?	1. Unsharp mask filter 2. Lowpass filter 3. Zero-phase-shift filter 4. All of the mentioned

Questions	Choices
Which of the following in an image can be removed by using smoothing filter?	1. Smooth transitions of gray levels 2. Smooth transitions of brightness levels 3. Sharp transitions of gray levels 4. Sharp transitions of brightness levels
Which of the following is a receptor in the retina of human eye?	1. Rods 2. Cones 3. Rods and Cones 4. Neither Rods nor Cones
Which of the following is a second-order derivative operator?	1. Histogram 2. Laplacian 3. Gaussian 4. None of the mentioned
Which of the following is NOT an application of Image Multiplication?	1. Shading Correction 2. Masking 3. Pixelation 4. Region of Interest operations
Which of the following is NOT is not a type of Adjacency?	1. 4-Adjacency 2. 8-Adjacency 3. m-Adjacency 4. n-Adjacency

Questions	Choices
Which of the following is the disadvantage of using smoothing filter?	1. Blur edges 2. Blur inner pixels 3. Remove sharp transitions 4. Sharp edges
Which of the following logical operator(s) is/are functionally complete?	1. AND 2. OR 3. NOT 4. All of the mentioned ✓

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