

Telangana State Council Higher Education

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :

Biomedical Engineering 12th June 2024 Shift
2

Subject Name :

Biomedical Engineering

Creation Date :

2024-06-12 17:30:45

Duration :

120

Total Marks :

120

Display Marks:

Yes

Share Answer Key With Delivery Engine :

Yes

Actual Answer Key :

Yes

Change Font Color :

No

Change Background Color :

No

Change Theme :

No

Help Button :

No

Show Reports :

No

Show Progress Bar :

No

Biomedical Engineering

Group Number :

1

Group Id :

38382344

Group Maximum Duration :

0

Group Minimum Duration :

120

Show Attended Group? :

No

Edit Attended Group? :

No

Break time :

0

Group Marks :

120

Mathematics

Section Id :

383823118

Section Number :

1

Section type :

Online

Mandatory or Optional :

Mandatory

Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	383823118
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 3838236121 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The eigenvalues of a 3×3 matrix A are 1, 3, 7 then the eigenvalues of $\text{adj}(A)$ are

Options :

1. ✖ $1, \frac{3}{4}, \frac{7}{4}$

2. ✖ $\frac{1}{21}, \frac{3}{21}, \frac{7}{21}$

3. ✖ $\frac{1}{21}, \frac{3}{21}, \frac{21}{7}$

4. ✔ $21, 7, 3$

Question Number : 2 Question Id : 3838236122 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The rank of the matrix $A = \begin{bmatrix} 1 & 3 & 4 & 3 \\ 3 & 9 & 12 & 9 \\ -1 & -3 & -4 & -3 \end{bmatrix}$ is

Options :

1. ✖ 3

2. ✖ 2

3. ✔ 1

4. ✖ 0

Question Number : 3 Question Id : 3838236123 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $u = \frac{x+y}{x-y}$ and $v = \frac{xy}{(x-y)^2}$ are functionally dependent, then the relation between u & v is

Options :

1. ✖ $u = 1 + 4v$
2. ✔ $u^2 = 1 + 4v$
3. ✖ $v^2 = 1 + 4u$
4. ✖ $v = 1 + 4u$

Question Number : 4 Question Id : 3838236124 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $f(x) = \begin{cases} -\pi, & \text{in } -\pi < x < 0 \\ x, & \text{in } 0 < x < \pi \end{cases}$ then the constant term of the Fourier series is

Options :

1. ✔ $-\frac{\pi}{4}$
2. ✖ $-\frac{\pi}{2}$
3. ✖ $-\frac{4}{\pi}$
4. ✖ $\frac{2}{\pi}$

Question Number : 5 Question Id : 3838236125 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The general solution of $(D^2 - 2D + 1)y = x^2 e^x$ is

Options :

1. ✖ $(c_1 + xc_2)e^x + \frac{x^2 e^x}{6}$

2. ✔ $(c_1 + xc_2)e^x + \frac{x^4 e^x}{12}$

3. ✖ $c_1 e^x + c_2 e^{-x} + \frac{x^4 e^x}{6}$

4. ✖ $c_1 e^x + c_2 e^{2x} + \frac{x e^x}{3}$

Question Number : 6 Question Id : 3838236126 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The general solution of $\frac{\partial u}{\partial x} = 4 \frac{\partial u}{\partial y}$, given $u(0, y) = 8e^{-3y}$ is

Options :

1. ✖ $u(x, y) = 3e^{-3(4x+y)}$

2. ✖ $u(x, y) = 8e^{12x-3y}$

3. ✖ $u(x, y) = -3e^{-12x+3y}$

4. ✔ $u(x, y) = 8e^{-12x-3y}$

Question Number : 7 Question Id : 3838236127 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The residue of the function $f(z) = \frac{z e^z}{(z-1)^3}$, at its pole

Options :

1. ✔ $\frac{3e}{2}$

2. ✖ $\frac{4e}{3}$

3. ✖ $\frac{e}{2}$

4. ✖ e

Question Number : 8 Question Id : 3838236128 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equation $x^4 - x - 10 = 0$ is to be solved using the Newton-Raphson method. If $x = 2$ is taken as the initial approximation of the equation, then the next approximation of the solution is

Options :

1. ✖ $\frac{38}{31}$

2. ✖ $\frac{48}{31}$

3. ✔ $\frac{58}{31}$

4. ✖ $\frac{28}{31}$

Question Number : 9 Question Id : 3838236129 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For two events A and B, let $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{4}$ and $P(A \cup B) = \frac{1}{2}$ then $P(A / B)$ is

Options :

1. ✖ $\frac{1}{2}$

2. ✔ $\frac{1}{3}$

3. ✖ $\frac{1}{12}$

4. ✖ $\frac{1}{4}$

Question Number : 10 Question Id : 3838236130 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A biased coin was thrown 300 times and the tail turned up 120 times, then the standard error of the observed proportion of tails is

Options :

1. ✔ 0.028

2. ✖ 0.28

3. ✖ 0.82

4. ✖ 0.082

Biomedical Engineering

Section Id :	383823119
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	383823119
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 3838236131 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The voltage applied to a 212 mH inductor is given by $V(t) = 15e^{-5t}$ V . Calculate the current

Options :

1. ✖ $16.782e^{-10t}$
2. ✖ $15.75e^{-5t}$
3. ✖ $11.27e^{-10t}$
4. ✔ $14.15e^{-5t}$

Question Number : 12 Question Id : 3838236132 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The voltage across a capacitor of 0.5F is defined by $V(t) = \begin{cases} 0, & t < 0 \\ 2t, & 0 < t < 2s \\ 4e^{-(t-2)}, & t > 2s \end{cases}$.

Find $i(t)$

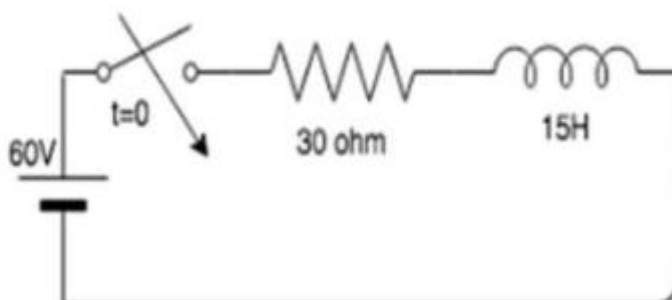
Options :

1. ✔ $-2e^{-(t-2)}$
2. ✖ $-4e^{-(t-2)}$
3. ✖ $-20e^{-(t-2)}$
4. ✖ $-12e^{-(t-2)}$

Question Number : 13 Question Id : 3838236133 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the voltage across the inductor at $t = 0$?



Options :

1. ✖ 0 V

2. ✖ 20 V

3. ✔ 60 V

4. ✖ 58 V

Question Number : 14 Question Id : 3838236134 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which law states that the current flowing into junction must be equal to the current flowing out of it?

Options :

1. ✖ Boolean

2. ✔ Kirchoff's

3. ✖ Laplace

4. ✖ Fourier

Question Number : 15 Question Id : 3838236135 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For a voltage source to be neglected, the terminals across the source should be

Options :

1. ✖ replaced by an inductor

2. ✔ short-circuited

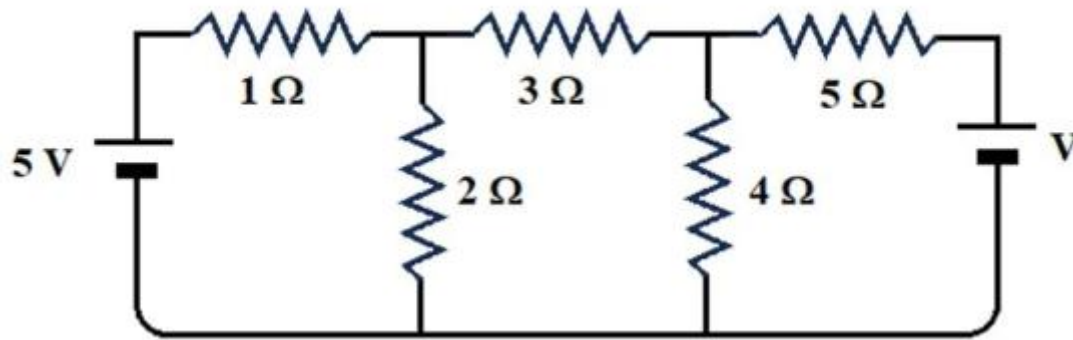
3. ✖ replaced by some resistance

4. ✖ open circuited

Question Number : 16 Question Id : 3838236136 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Find the value of V when the current in the $3\ \Omega$ resistor is 0.



Options :

- 1. ✗ 3.5 V
- 2. ✗ 6.5 V
- 3. ✓ 7.5 V
- 4. ✗ 8.5 V

Question Number : 17 Question Id : 3838236137 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Nodal analysis is generally used to determine

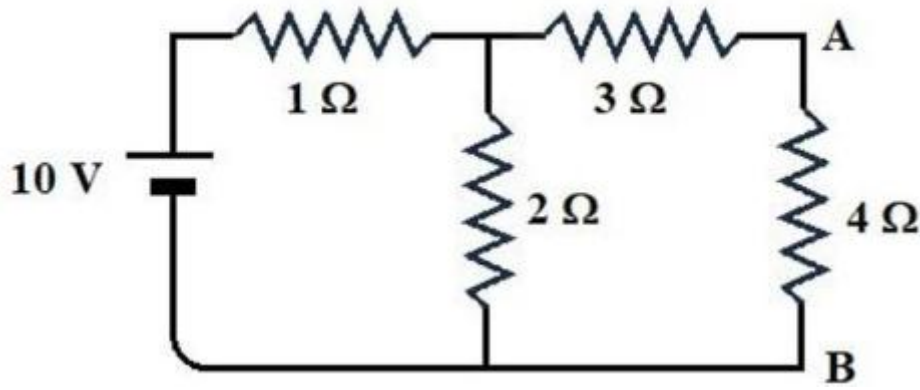
Options :

- 1. ✓ Voltage
- 2. ✗ Current
- 3. ✗ Resistance
- 4. ✗ Power

Question Number : 18 Question Id : 3838236138 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Calculate V_{th} for the given circuit.



Options :

- 1. ✗ 5.54V
- 2. ✗ 3.33V
- 3. ✓ 6.67V
- 4. ✗ 3.67V

Question Number : 19 Question Id : 3838236139 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Norton's theorem is true for

Options :

- 1. ✓ Linear networks
- 2. ✗ Non-Linear networks
- 3. ✗ Both linear networks and nonlinear networks
- 4. ✗ Neither linear networks nor non-linear networks

Question Number : 20 Question Id : 3838236140 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a network maximum power transfer occurs when

Options :

- 1. ✗ $R_{Th} = -R_L$

2. ✖ $\frac{R_{Th}}{R_L} = 0$

3. ✔ $R_{Th} = R_L$

4. ✖ $R_{Th} + R_L = 1$

Question Number : 21 Question Id : 3838236141 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A band-limited signal with a maximum frequency of 5 kHz is to be sampled. According to the sampling theorem, the sampling frequency which is not valid is

Options :

1. ✖ 12 kHz

2. ✔ 5 kHz

3. ✖ 15 kHz

4. ✖ 20 kHz

Question Number : 22 Question Id : 3838236142 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider two signals $x(n) = \{0, 1, 1, 2\}$ and $h(n) = \{a, b, c\}$. The signal $y(n) = x(n) \otimes h(n)$. The DFT of $y(n)$ is given as $Y(e^{j\Omega})$. If $Y(e^{j0})$ is 36, then which of the following relation is correct?

Options :

1. ✖ $a \times b \times c = 27$

2. ✖ $ab + c = 9$

3. ✔ $a + b + c = 9$

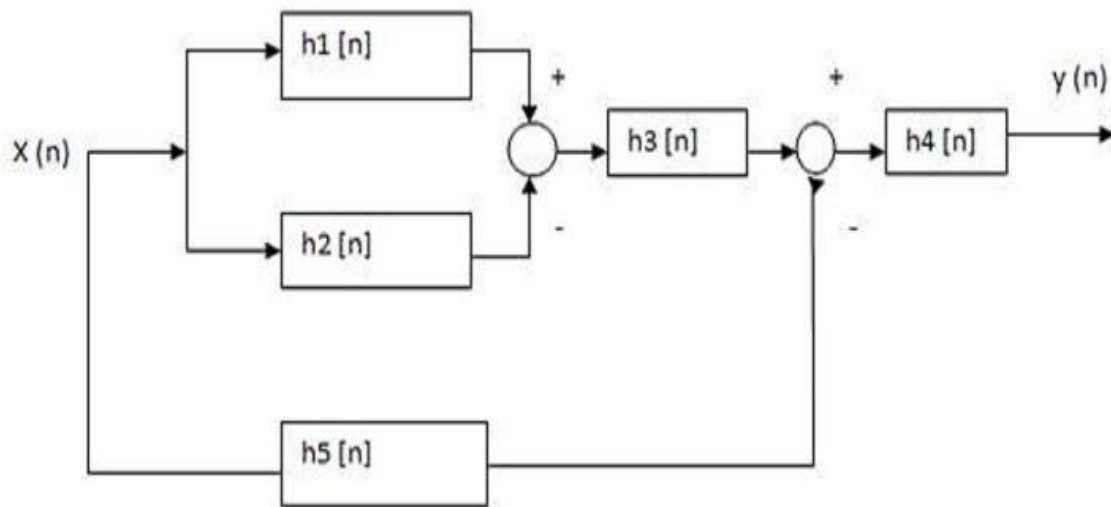
4. ✖ $a + b - c = 12$

Question Number : 23 Question Id : 3838236143 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The overall impulse response of the system shown in figure is given by



Options :

1. ✓ $h[n] = (((h1[n]-h2[n])*h3[n])-h5[n])*h4[n]$
2. ✗ $h[n] = (((h1[n]-h2[n])*-h3[n])-h5[n])*h4[n]$
3. ✗ $h[n] = (((h1[n]-h2[n])*h3[n])+h5[n])*h4[n]$
4. ✗ $h[n] = (h1[n]-h2[n])*h3[n]+h5[n]*h4[n]$

Question Number : 24 Question Id : 3838236144 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The input $x(t)$ is related to its output $y(t)$ as: $\frac{dy(t)}{dt} + y(t) = 3x(t-3)u(t-3)$.

Here $u(t)$ represents a step function. The transfer function of this system is

Options :

1. ✗ $\frac{e^{-3s}}{s+3}$
2. ✗ $\frac{e^{-s/3}}{s+3}$
3. ✓ $3 \frac{e^{-3s}}{s+1}$

4. ✖ $3 \frac{e^{-s/3}}{s+1}$

Question Number : 25 Question Id : 3838236145 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of $u(t)$ and its ROC is given as

Options :

1. ✖ $\frac{1}{s}, \sigma < 0$

2. ✔ $\frac{1}{s}, \sigma > 0$

3. ✖ $\frac{1}{s-1}, \sigma = 0$

4. ✖ $\frac{1}{1-s}, \sigma \leq 0$

Question Number : 26 Question Id : 3838236146 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is correct?

- I. All periodic signals are energy signals while aperiodic signals are power signals
- II. Periodic signals have finite and non-zero average power
- III. Both periodic and aperiodic signals have infinite power and energy
- IV. All periodic signals are power signals while aperiodic signals are energy signals

Options :

1. ✖ I and II only

2. ✖ II only

3. ✖ III only

4. ✔ II and IV only

Question Number : 27 Question Id : 3838236147 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The auto-correlation function of a rectangular pulse of duration T is

Options :

1. ✓ A triangular pulse of duration $2T$
2. ✗ A rectangular pulse of duration $2T$
3. ✗ A triangular pulse of duration T
4. ✗ A rectangular pulse of duration T

Question Number : 28 Question Id : 3838236148 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The ROC of the signal $x(n) = \delta(n - k)$, $k > 0$ is defined as

Options :

1. ✗ $z = 0$
2. ✗ $z = \infty$
3. ✓ Entire z -plane, except at $z = 0$
4. ✗ Entire z -plane, except at $z = \infty$

Question Number : 29 Question Id : 3838236149 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A digital signal processing system is described by the expression

$y(n) = 2x(n) + x(n - 1) + 2y(n - 1)$. The system is

Options :

1. ✗ A stable IIR filter
2. ✗ A stable FIR filter

3. ✖ An unstable FIR filter

4. ✔ An unstable IIR filter

Question Number : 30 Question Id : 3838236150 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many complex additions are needed for 16 direct computations in discrete Fourier transform?

Options :

1. ✔ 240

2. ✖ 56

3. ✖ 756

4. ✖ 32

Question Number : 31 Question Id : 3838236151 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which among the below assertions is precise in accordance to the effect of time scaling?

A: Inverse relationship exists between the time and frequency domain representation of signal

B: A signal must be necessarily limited in time as well as frequency domains

Options :

1. ✔ A is true & B is false

2. ✖ A is false & B is true

3. ✖ Both A & B are true

4. ✖ Both A & B are false

Question Number : 32 Question Id : 3838236152 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The most appropriate sequence of steps in the implementation of Pan-Tompkins algorithm is given by

Options :

1. ✖ Pre-processing, Differentiation, Integration, Squaring, Normalization, Thresholding
2. ✔ Pre-processing, Differentiation, Squaring, Integration, Normalization, Thresholding
3. ✖ Differentiation, pre-processing, Squaring, Integration, Normalization, Thresholding
4. ✖ Differentiation, pre-processing, Integration, Squaring, Thresholding, Normalization

Question Number : 33 Question Id : 3838236153 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the AZTEC coded data is given by [5, 10, -5, 100, 2, 5, -4, 100], the compression ratio obtained for following reconstruction is

Options :

1. ✖ 1:8
2. ✖ 1:4
3. ✔ 1:2
4. ✖ 1:16

Question Number : 34 Question Id : 3838236154 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Stage 2 sleep is defined by the presence of

Options :

1. ✖ spikes and slow waves
2. ✔ sleep spindles and K complexes
3. ✖ rapid eye movements
4. ✖

1 to 2 Hz delta frequencies

Question Number : 35 Question Id : 3838236155 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Higher-order differentiation filter coefficients in Pan Tompkins algorithm is

Options :

1. ✖ [-1 -2 0 2 1]

2. ✔ [1 2 0 -2 -1]

3. ✖ [-2 -1 0 1 2]

4. ✖ [2 1 0 -1 -2]

Question Number : 36 Question Id : 3838236156 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Slew rate of an ideal op-amp is

Options :

1. ✔ Infinite

2. ✖ Very high

3. ✖ Low

4. ✖ Zero

Question Number : 37 Question Id : 3838236157 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A shunt regulator utilizing a zener diode with an incremental resistance of $5\ \Omega$ is fed through an $82\text{-}\Omega$ resistor. If the raw supply changes by 1.0 V , what is the corresponding change in the regulated output voltage?

Options :

1. ✖ 72.7mV

2. ✖ 73.7mV

3. ✔ 74.7mV

4. ✖ 75.7Mv

Question Number : 38 Question Id : 3838236158 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In FET, as V_{GS} is changed from zero to increasing reverse bias, the value of g_m is

Options :

1. ✖ Decreased

2. ✔ Increased

3. ✖ Constant

4. ✖ Zero

Question Number : 39 Question Id : 3838236159 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An amplifier has an open loop voltage gain of -500. This gain is reduced to -100 when negative feedback is applied. The reverse transmission factor, β of the system is

Options :

1. ✔ 0.008

2. ✖ -0.025

3. ✖ 0.1

4. ✖ -0.2

Question Number : 40 Question Id : 3838236160 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The bandwidth of an RF tuned amplifier is dependent on Q-factor of

Options :

1. ✓ Tuned output circuit
2. ✗ Tuned input circuit
3. ✗ Operating point
4. ✗ Output, input circuits and quiescent point

Question Number : 41 Question Id : 3838236161 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An instrumentation amplifier has a high

Options :

1. ✗ Output impedance
2. ✓ CMRR
3. ✗ Input offset currents
4. ✗ Supply voltage

Question Number : 42 Question Id : 3838236162 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many AND gates are required to realize $Y = CD + EF + G$

Options :

1. ✓ 4
2. ✗ 5
3. ✗ 3
4. ✗ 2

Question Number : 43 Question Id : 3838236163 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Determine the output frequency of a frequency division circuit which contains 12 flip-flops with an input clock frequency of 20.48 MHz.

Options :

1. ✘ 10.24 kHz

2. ✔ 05 kHz

3. ✘ 30.24 kHz

4. ✘ 15 kHz

Question Number : 44 Question Id : 3838236164 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Multivibrator which can produce a very short pulse or a much longer rectangular shaped waveform whose leading edge rises in time with an externally applied trigger pulse is called

Options :

1. ✘ Astable multivibrator

2. ✘ Distable multivibrator

3. ✔ Monostable multivibrator

4. ✘ Tristable multivibrator

Question Number : 45 Question Id : 3838236165 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a function of shift register?

Options :

1. ✘ To convert digital information into analog signals

2. ✘ To control current levels according to data pulses

To translate serial digital information into parallel or parallel digital information into

3. ✓ serial data

4. ✗ To control voltage levels according to clock pulses

Question Number : 46 Question Id : 3838236166 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the maximum possible range of bit-count specifically in n-bit binary counter consisting of 'n' number of flip-flops?

Options :

1. ✗ 0 to 2^n

2. ✓ 0 to $2^n - 1$

3. ✗ 0 to $2^{n+1/2}$

4. ✗ 0 to $2^n + 1$

Question Number : 47 Question Id : 3838236167 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A 4-bit R/2R digital-to-analog (DAC) converter has a reference of 5 V. What is the analog output for the input code 0101?

Options :

1. ✗ 0.3125 V

2. ✓ 3.125 V

3. ✗ 0.78125 V

4. ✗ 31.25 V

Question Number : 48 Question Id : 3838236168 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Sample and hold circuits in A/D converters are designed to

Options :

1. ✖ Stabilize the comparator's threshold voltage during the conversion process
2. ✖ Sample and hold the output of the binary counter during the conversion process
3. ✖ Sample and hold the D/A converter staircase waveform during the conversion process
4. ✔ Stabilize the input analog signal during the conversion process

Question Number : 49 Question Id : 3838236169 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What type of register would shift a complete binary number in one bit at a time and shift all the stored bits out one bit at a time?

Options :

1. ✖ PIPO
2. ✔ SISO
3. ✖ SIPO
4. ✖ PISO

Question Number : 50 Question Id : 3838236170 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the status of the carry, auxiliary carry and parity flag for the following instructions?

MOV A,#9C

ADD A,#64H

Options :

1. ✖ CY = 0, AC = 0, P = 0
2. ✖ CY = 0, AC = 1, P = 0

3. ✓ CY = 1, AC = 1, P = 0

4. ✗ CY = 1, AC = 1, P = 1

Question Number : 51 Question Id : 3838236171 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What registers are significantly incremented and decremented respectively for the transmission of each byte by Direct Memory Access (DMA)?

Options :

1. ✓ Address Register & Byte Count Register

2. ✗ Control Register & Byte Count Register

3. ✗ Transmitter Register & Byte Count Register

4. ✗ Status- Register & Byte Count Register

Question Number : 52 Question Id : 3838236172 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Frequency range of 8257 is

Options :

1. ✗ 500Hz to 3MHz

2. ✓ 250Hz to 3MHz

3. ✗ 500Hz to 2MHz

4. ✗ 250Hz to 2MHz

Question Number : 53 Question Id : 3838236173 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A single-chip data acquisition system incorporates

Options :

1. ✓ An ADC and a multiplexer
2. ✗ An ADC and a DAC
3. ✗ A DAC and a demultiplexer
4. ✗ An ADC and a demultiplexer

Question Number : 54 Question Id : 3838236174 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The external interrupts of 8051 microcontroller are

Options :

1. ✗ TRAP and INT1
2. ✗ INT2 and INT1
3. ✓ INT0 and INT1
4. ✗ TRAP and INTR

Question Number : 55 Question Id : 3838236175 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a register-indirect addressing mode in instruction set?

Options :

1. ✗ LDA 2700H
2. ✗ ADI 36H
3. ✗ DAA
4. ✓ LDAX B

Question Number : 56 Question Id : 3838236176 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Systematic errors lead due to a lack of

Options :

1. ✖ Accuracy in the measurement
2. ✖ Significant digits in the measurement
3. ✖ Precision in the measurement
4. ✔ Gradation of the instrument

Question Number : 57 Question Id : 3838236177 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Starting position of an object is represented as $x = 5.1 \pm 0.2$ m and the finishing position as $y = 6.9 \pm 0.3$ m. What will be the displacement and error in displacement?

Options :

1. ✖ Displacement = 1 m, Error = 0.5 m
2. ✖ Displacement = 2 m, Error = 0.36 m
3. ✔ Displacement = 1.8 m, Error = 0.36 m
4. ✖ Displacement = 1.5 m, Error = 0.4 m

Question Number : 58 Question Id : 3838236178 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A Daniel cell is balanced at 240 cm in length of a potentiometer. Now the cell is short-circuited by a resistance of 0.25 ohm and the balance is obtained at 80 cm. The internal resistance of the Daniel cell is

Options :

1. ✔ 0.5 ohm
2. ✖ 2 ohms

3. ✖ 0.25 ohm

4. ✖ 1 ohm

Question Number : 59 Question Id : 3838236179 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a Q Meter, the values of the tuning capacitor are C_3 and C_4 for resonant frequencies f_3 and $2f_4$ respectively. The value of distributed capacitance is

Options :

1. ✖ $\frac{(C_3 - C_4)}{2}$

2. ✖ $\frac{(C_3 - 2C_4)}{3}$

3. ✔ $\frac{(C_3 - 4C_4)}{3}$

4. ✖ $\frac{(C_3 - 4C_4)}{2}$

Question Number : 60 Question Id : 3838236180 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Maxwell's capacitance bridge for calculating unknown inductance, the various values at balance are $R_2 = 300 \Omega$, $R_3 = 700 \Omega$, $R_4 = 1500 \Omega$, $C_4 = 0.8 \mu\text{F}$. Calculate R_1 , L_1 , and Q factor, if the frequency is 1100 Hz.

Options :

1. ✖ 240 Ω , 0.12 H, 3.14

2. ✔ 140 Ω , 0.168 H, 8.29

3. ✖ 140 Ω , 0.12 H, 5.92

4. ✖ 240 Ω , 0.36 H, 8.29

Question Number : 61 Question Id : 3838236181 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following instrument is used for recording the movements imparted to the body with each beat of the heart cycle?

Options :

1. ✘ Apexcardiograph
2. ✔ Ballistocardiograph
3. ✘ Electro-oculograph
4. ✘ Electro-retinograph

Question Number : 62 Question Id : 3838236182 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The amplitude of EMG signals depend upon which of the following factor?

Options :

1. ✘ Respiration
2. ✔ Position of electrode
3. ✘ Blood Resistivity
4. ✘ Ventricular Volume

Question Number : 63 Question Id : 3838236183 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

There is provision for automatic adjustment of stimulus intensity and gains for the various sensing channels in

Options :

1. ✘ Fixed Pacemakers

2. ✖ Atrial Triggered Pacemakers

3. ✔ Demand Pacemakers

4. ✖ Dual Chamber Pacemakers

Question Number : 64 Question Id : 3838236184 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What should be CMRR of pre-amplifier up to 5 kHz?

Options :

1. ✖ 10 dB

2. ✖ 30 dB

3. ✖ 90 dB

4. ✔ greater than 90 dB

Question Number : 65 Question Id : 3838236185 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Linearity of transducer is closeness of the transducer's calibration curve to a special

Options :

1. ✖ curved line within a given percentage of full scale output

2. ✔ straight line within a given percentage of full scale output

3. ✖ straight line within a given percentage of half scale output

4. ✖ curved line within a given percentage of half scale output

Question Number : 66 Question Id : 3838236186 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Change in signal over long period of time is called

Options :

1. ✖ Noise
2. ✖ Offset
3. ✖ Hysteresis
4. ✔ Drift

Question Number : 67 Question Id : 3838236187 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The smallest change in measurant that will result in a measurable change in the transducer output is called

Options :

1. ✖ Offset of the transducer
2. ✖ Linearity of the transducer
3. ✖ Resolution of the transducer
4. ✔ Threshold of the transducer

Question Number : 68 Question Id : 3838236188 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

ECG was developed by

Options :

1. ✖ Wilhelm His
2. ✖ Steward
3. ✔ Willem Einthoven
4. ✖ Hubert Mann

Question Number : 69 Question Id : 3838236189 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Widen QRS and tall-tented T waves are observed in

Options :

1. ✖ Hyponatremia
2. ✔ Hyperkalemia
3. ✖ Hyperglycemia
4. ✖ Hyperphosphatemia

Question Number : 70 Question Id : 3838236190 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

According to the International 10/20 system to measure EEG, even number electrodes denotes which side of the brain?

Options :

1. ✖ Left
2. ✖ Top
3. ✖ Bottom
4. ✔ Right

Question Number : 71 Question Id : 3838236191 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Normal EEG frequency range is

Options :

1. ✖ 50-500 Hz
2. ✔ 0.5-50 HZ
3. ✖ 0.05-5 Hz
4. ✖ 1-200 Hz

Question Number : 72 Question Id : 3838236192 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The typical range for EMG is

Options :

1. ✘ 0 – 1 mV
2. ✘ 1 – 5 mV
3. ✘ 0 – 0.1 mV
4. ✔ 0.1 – 0.5 mV

Question Number : 73 Question Id : 3838236193 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Capacitive transducer displays

Options :

1. ✘ Linear behaviour
2. ✔ Non-linear behaviour
3. ✘ Like $y = 2x$ curve
4. ✘ Like $y = mx+b$ curve

Question Number : 74 Question Id : 3838236194 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Frequency response of capacitive transducers is

Options :

1. ✘ High
2. ✘ Medium
3. ✔ Low

4. ✖ Zero

Question Number : 75 Question Id : 3838236195 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What happens to resistance if the length of the conductor is increased?

Options :

- 1. ✖ Decreases
- 2. ✖ No change
- 3. ✔ Increases
- 4. ✖ Doubles

Question Number : 76 Question Id : 3838236196 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A metal with temperature coefficient of resistance has a value 200, its initial resistance is given by $40\ \Omega$. For an increase in $30\ ^\circ\text{C}$ to $35\ ^\circ\text{C}$ what will be the final resistance value?

Options :

- 1. ✔ $40\ \text{K}\Omega$
- 2. ✖ $4\ \text{K}\Omega$
- 3. ✖ $40\ \Omega$
- 4. ✖ $400\ \Omega$

Question Number : 77 Question Id : 3838236197 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is correct with respect to blood pressure?

Options :

- 1. ✖ 130/90 mm Hg is considered high and require treatment

2. ✖ 100/55 mm Hg is considered an ideal

3. ✖ 105/50 mm Hg makes one active

4. ✔ 190/110 mm Hg harm vital organs

Question Number : 78 Question Id : 3838236198 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Unhealthy growth of tissue due to higher pressures on the walls of the artery is termed as

Options :

1. ✔ Atheroma

2. ✖ Aroma

3. ✖ Adenoma

4. ✖ Aroma and Adenoma

Question Number : 79 Question Id : 3838236199 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which mixture of gases are used in anesthesia?

Options :

1. ✖ O₂ and CO₂

2. ✔ O₂ and N₂O

3. ✖ CO₂ and N₂O

4. ✖ O₂ , CO₂ and N₂O

Question Number : 80 Question Id : 3838236200 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

AEP stands for

Options :

1. ✓ Auditory Evoked Potential
2. ✗ Auxiliary Evoked Potential
3. ✗ Audiovisual Evoked Potential
4. ✗ Ambulatory Evoked Potential

Question Number : 81 Question Id : 3838236201 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What causes the pre-selected volume of air to flow into the patient by communicating directly with a breathing circuit?

Options :

1. ✗ Nebulizer
2. ✗ Microcontroller
3. ✓ Bellows
4. ✗ Humidifier

Question Number : 82 Question Id : 3838236202 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the pH range of extracellular fluid?

Options :

1. ✗ 7.15 to 7.20
2. ✗ 7.25 to 7.30
3. ✓ 7.35 to 7.45
4. ✗ 7.50 to 7.60

Question Number : 83 Question Id : 3838236203 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

With a 1°C change in temperature, the emf changes by

Options :

1. ✖ 0.1 mV
2. ✔ 0.2 mV
3. ✖ 0.5 mV
4. ✖ 0.8 mV

Question Number : 84 Question Id : 3838236204 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Any disturbance in the heart's normal rhythmic contraction is called

Options :

1. ✖ Heart stroke
2. ✖ Cardiac arrest
3. ✔ Arrhythmias
4. ✖ Premature contraction

Question Number : 85 Question Id : 3838236205 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When the heartbeat is slower than the normal rate of the heart (less than 60), this type of arrhythmias called

Options :

1. ✔ Bradycardia
2. ✖ Tachycardia
3. ✖ Arterial contraction
4. ✖ Ventricular contraction

Question Number : 86 Question Id : 3838236206 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following type of cartilage is present at the joints of long bones in humans?

Options :

1. ✖ Fibrous
2. ✔ Hyaline
3. ✖ Elastic
4. ✖ Calcified

Question Number : 87 Question Id : 3838236207 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following clinical sign indicates ischaemia of forearm?

Options :

1. ✖ Carpel tunnel syndrome
2. ✖ Hand of benediction
3. ✖ Ulnar claw
4. ✔ Volkmann's Contracture

Question Number : 88 Question Id : 3838236208 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What does corpus callosum connects in human brain?

Options :

1. ✖ Two optic lobes
2. ✖ Bone and muscle
3. ✔ Two cerebral hemisphere

4. ✖ Two lobes of pituitary gland

Question Number : 89 Question Id : 3838236209 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following taste bud is present on the lateral sides of the human tongue?

Options :

1. ✖ Bitter

2. ✖ Salty

3. ✔ Sour

4. ✖ Sweet

Question Number : 90 Question Id : 3838236210 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is the largest gland in human body?

Options :

1. ✖ Thymus

2. ✖ Kidneys

3. ✔ Liver

4. ✖ Pancreas

Question Number : 91 Question Id : 3838236211 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The study of fluid at rest is

Options :

1. ✖ Fluid Dynamics

2. ✖ Fluid Mechanics

3. ✓ Fluid Statics

4. ✗ Fluid Kinematics

Question Number : 92 Question Id : 3838236212 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following method is used exclusively in fluid mechanics?

Options :

1. ✓ Eulerian method

2. ✗ Lagrangian method

3. ✗ Neither Lagrangian nor Eulerian method

4. ✗ Both Lagrangian and Eulerian methods

Question Number : 93 Question Id : 3838236213 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Cartilaginous joint is a joint between

Options :

1. ✓ Skull bones

2. ✗ Vertebrae

3. ✗ Phalanges

4. ✗ Elbow

Question Number : 94 Question Id : 3838236214 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Joints act as _____ during movement

Options :

1. ✗ Effort

2. ✖ Lever

3. ✔ Fulcrum

4. ✖ Load

Question Number : 95 Question Id : 3838236215 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of hinge joint?

Options :

1. ✖ Between the carpals

2. ✖ Between carpal and metacarpal of thumb

3. ✔ Knee joint

4. ✖ Between atlas and axis

Question Number : 96 Question Id : 3838236216 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of gliding joint?

Options :

1. ✖ Knee joint

2. ✔ Between the carpals

3. ✖ Between carpal and metacarpal of thumb

4. ✖ Between atlas and axis

Question Number : 97 Question Id : 3838236217 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A sprain is defined as

Options :

1. ✖ Acute pain in bone
2. ✔ Ligament tear
3. ✖ Muscle tear
4. ✖ Tendon tear

Question Number : 98 Question Id : 3838236218 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Group of cells, which is similar in structure and function are structured into

Options :

1. ✖ Organ system
2. ✖ Muscles
3. ✖ Bone
4. ✔ Tissues

Question Number : 99 Question Id : 3838236219 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the name of the tissues which helps in protection and support of the body?

Options :

1. ✖ Muscular tissue
2. ✖ Nervous tissue
3. ✔ Connective tissue
4. ✖ Epithelial tissue

Question Number : 100 Question Id : 3838236220 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following tissues has the most regenerative property?

Options :

1. ✓ Epithelial tissue
2. ✗ Connective tissue
3. ✗ Muscular tissue
4. ✗ Neural tissue

Question Number : 101 Question Id : 3838236221 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Production of X-rays for diagnostic applications requires voltage range of

Options :

1. ✓ 30-200 kV
2. ✗ 300-2000 kV
3. ✗ 2000-20000 kV
4. ✗ 2-20 kV

Question Number : 102 Question Id : 3838236222 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Angiography is used to check

Options :

1. ✗ Kidney stones
2. ✓ Blood vessels
3. ✗ Tumors
4. ✗ Breast cancer

Question Number : 103 Question Id : 3838236223 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

X-rays are emitted by

Options :

1. ✖ Photons
2. ✖ Neutrons
3. ✖ Atoms
4. ✔ Electrons

Question Number : 104 Question Id : 3838236224 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the wavelength range of X-rays

Options :

1. ✖ 700 nm to 1 nm
2. ✖ 1 mm to 700 nm
3. ✖ 0.1 to 1 mm
4. ✔ 0.01 to 10 nm

Question Number : 105 Question Id : 3838236225 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the purpose of contrast in CT scan?

Options :

1. ✖ To suppress particular tissues
2. ✔ To enhance a particular tissue
3. ✖ To ensure correct tissue is being imaged
4. ✖ To reduce bone interference

Question Number : 106 Question Id : 3838236226 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The cooling agent for the MRI magnet is

Options :

1. ✓ Helium
2. ✗ Neon
3. ✗ Argon
4. ✗ Xenon

Question Number : 107 Question Id : 3838236227 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The smallest unit in the reconstruction/projection of an MRI image is called as

Options :

1. ✗ Pixel
2. ✓ Voxel
3. ✗ Binary unit
4. ✗ Dot

Question Number : 108 Question Id : 3838236228 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which property of sound waves acts like the principle of ultrasound?

Options :

1. ✓ Reflection and Refraction
2. ✗ Reflection only
3. ✗ Refraction only

4. ✖ Propagation

Question Number : 109 Question Id : 3838236229 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What kind of ultrasound is produced by piezoelectric crystal?

Options :

1. ✔ Pressure wave ultrasound
2. ✖ Electrical wave ultrasound
3. ✖ Sound wave ultrasound
4. ✖ Simple ultrasound

Question Number : 110 Question Id : 3838236230 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How is a medium characterized?

Options :

1. ✖ By its thickness
2. ✔ By its acoustic impedance
3. ✖ By its water content
4. ✖ By its density

Question Number : 111 Question Id : 3838236231 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The wave velocity of ultrasound in soft tissues is 1540 m/s and the impedance offered by it is $1.63 \times 10^6 \text{ kg/m}^2\text{s}$. What is the density of the soft tissue?

Options :

1. ✖ 0.1058441 kg/m^3

2. ✖ 10.58441 kg/m³

3. ✔ 1058.441kg/m³

4. ✖ 105844.1 kg/m³

Question Number : 112 Question Id : 3838236232 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What makes PET and SPECT so unique when it comes to nuclear imaging?

Options :

1. ✖ Do not require dyes

2. ✖ Do not require X – Rays

3. ✔ They show the metabolic functions

4. ✖ They give more details about the imaged organ/tissue

Question Number : 113 Question Id : 3838236233 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a characterization technique used to measure Young's modulus of a biomaterial?

Options :

1. ✖ Tensile test

2. ✖ Compression test

3. ✖ Three- and four-point bend test

4. ✔ Calculation from the stress-strain curve

Question Number : 114 Question Id : 3838236234 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

AFM stands for

Options :

1. ✖ Auto focusing microscope
2. ✖ Antenna focusing microscope
3. ✔ Atomic force microscope
4. ✖ Atomic focusing microscope

Question Number : 115 Question Id : 3838236235 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the first step in biomaterial-tissue interactions?

Options :

1. ✖ Cell Migration
2. ✔ Adsorption of proteins
3. ✖ Cell Development
4. ✖ Cell adhesion

Question Number : 116 Question Id : 3838236236 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The biomaterials are expected to mimic the functions of

Options :

1. ✔ Extracellular Matrix (ECM)
2. ✖ Transmembrane proteins
3. ✖ Cytoplasm
4. ✖ Cell Organelles

Question Number : 117 Question Id : 3838236237 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Constant stress test is used for a biomaterial to measure

Options :

1. ✓ Ductility
2. ✗ Toughness
3. ✗ Creep
4. ✗ Fatigue

Question Number : 118 Question Id : 3838236238 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following gel/hydrogel is formed by a physical gelation mechanism?

Options :

1. ✗ Polyester gel
2. ✓ Gelatin
3. ✗ CMC-g-acrylic acid
4. ✗ Polydimethyl siloxane

Question Number : 119 Question Id : 3838236239 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following component of TEM focuses the beam of electrons on the sample?

Options :

1. ✗ Ocular lens
2. ✓ Condenser lens
3. ✗ Stage

4. ✖ Column

Question Number : 120 Question Id : 3838236240 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Image formation in electron microscope is based on

Options :

1. ✖ column length
2. ✖ electron number
3. ✔ differential scattering
4. ✖ specimen size