

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 13th Aug 2021 Shift 2
Subject Name :	Biomedical Engineering
Creation Date :	2021-08-13 17:43:10
Duration :	120
Total Marks :	120
Display Marks:	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Biomedical Engineering

Group Number :	1
Group Id :	12984026
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No

Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No

Mathematics

Section Id :	12984045
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	12984045
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1298403001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Similar matrices will have same

Options :

1. ✘ Annihilating polynomial
2. ✘ Eigen vectors
3. ✔ Eigen values

4. ✖ Inverse

Question Number : 2 Question Id : 1298403002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number of solutions of the system of equations

$$x + 2y + z = 0$$

$$x - y + z = 3$$

$$x + y + z = 1 \quad \text{is}$$

Options :

1. ✔ 1

2. ✖ 0

3. ✖ 2

4. ✖ ∞ by many

Question Number : 3 Question Id : 1298403003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \int_0^1 \int_0^1 xy \cos(x^2) dx dy = K \sin(1), \text{ then } K =$$

Options :

1. ✘ $\frac{1}{2}$

2. ✔ $\frac{1}{4}$

3. ✘ $\frac{1}{8}$

4. ✘ $\frac{1}{10}$

Question Number : 4 Question Id : 1298403004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A curve $y = f(x)$ passes through the point $(0, 1)$ and satisfies $\frac{d^2y}{dx^2} = 2(1+y)^3$. Then one such a curve is

Options :

1. ✔ $y = \frac{1+2x}{1-2x}$

2. ✘ $y = \frac{1-2x}{1+2x}$

3. ✘ $y = \frac{1-x}{1+x}$

4. ✘ $y = \frac{1+x}{1-x}$

Question Number : 5 Question Id : 1298403005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $z = \tan^{-1}(y+x)^2 + \cos(y-2x)^3$, then $\frac{\partial^2 z}{\partial x^2} - 2\frac{\partial^2 z}{\partial y^2} =$

Options :

1. ✘ $2\frac{\partial^2 z}{\partial x \partial y}$

2. ✔ $\frac{\partial^2 z}{\partial x \partial y}$

3. ✘ $\frac{-2\partial^2 z}{\partial x \partial y}$

4. ✘ $\frac{-\partial^2 z}{\partial x \partial y}$

Question Number : 6 Question Id : 1298403006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\int_{|z|=2} z^2 e^{\frac{1}{z^2}} dz =$$

Options :

1. ✘ $-\pi i$

2. ✘ $2\pi i$

3. ✘ πi

4. ✔ 0

Question Number : 7 Question Id : 1298403007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A bag contains 7 red balls and 5 white balls. If two balls are drawn at random, then the probability that both the balls are of same color is

Options :

1. ✘ $\frac{23}{66}$

2. ✘ $\frac{29}{66}$

3. ✓ $\frac{31}{66}$

4. ✗ $\frac{35}{66}$

Question Number : 8 Question Id : 1298403008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $f(x) = \frac{x!}{5^x}$ and the interval of differencing is of unit length, then $\frac{5\Delta(f(x))}{f(x)} =$

Options :

1. ✗ $x - 1$

2. ✗ $x - 2$

3. ✗ $x - 3$

4. ✓ $x - 4$

Question Number : 9 Question Id : 1298403009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The particular integral of $(D^2 + D + 1)y = x^2 + x + 1$ is

Options :

1. ✘ $x^2 + x$

2. ✔ $x^2 - x$

3. ✘ $x^2 - 2x$

4. ✘ $x^2 + 2x$

Question Number : 10 Question Id : 1298403010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Residue of $z \tan(iz)$ at $z = \frac{-i\pi}{2}$ is

Options :

1. ✘ $\frac{\pi}{2}$

2. ✘ $\frac{3\pi}{2}$

3. ✔ $\frac{-\pi}{2}$

4. ✘ $\frac{-3\pi}{2}$

Biomedical Engineering

Section Id :	12984046
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	12984046
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 1298403011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The most suitable gate to check whether the number of 1s in a digital word is even or odd is

Options :

1. ✓ XOR

2. ✘ NAND

3. ✘ NOR

4. ✘ AND

Question Number : 12 Question Id : 1298403012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The simplified Boolean expression for the given term $A+AB+ABC+ABCD$ is

Options :

1. ✘ 1

2. ✔ A

3. ✘ $A+AB$

4. ✘ AB

Question Number : 13 Question Id : 1298403013 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The minimum number of full-adders required to construct an m-bit parallel adder are

Options :

1. ✘ $m/2$

2. ✔ $m-1$

3. ✘ m

4. ✘ m+1

Question Number : 14 Question Id : 1298403014 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A multiplexer with 4 select bits is a

Options :

1. ✘ 4:1 multiplexer

2. ✘ 8:1 multiplexer

3. ✔ 16:1 multiplexer

4. ✘ 32:1 multiplexer

Question Number : 15 Question Id : 1298403015 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Master slave configuration is used in flip-flops to

Options :

1. ✘ Increase its clocking rate

2. ✘ Reduce power dissipation

3. ✓ Eliminate race-around condition

4. ✗ Improve its reliability

Question Number : 16 Question Id : 1298403016 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A 4-bit synchronous counter uses flip-flops with propagation delay time of 25 ns each. The maximum possible time required for change of state will be

Options :

1. ✓ 25 ns

2. ✗ 50 ns

3. ✗ 75 ns

4. ✗ 100 ns

Question Number : 17 Question Id : 1298403017 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ADC which has fixed conversion time is

Options :

1. ✗ Counter type

2. ✘ Flash type
3. ✔ Successive approximation type
4. ✘ Dual slope type

Question Number : 18 Question Id : 1298403018 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Given that $(16)_{10} = (100)_b$, the value of **b** will be

Options :

1. ✔ 4
2. ✘ 5
3. ✘ 10
4. ✘ 12

Question Number : 19 Question Id : 1298403019 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The 8085 microprocessor instruction set consists of _____ number of instructions

Options :

1. ✘ 40

2. ✘ 72

3. ✘ 80

4. ✔ 74

Question Number : 20 Question Id : 1298403020 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The intensity of an absorption band is always proportional to _____

Options :

1. ✘ Atomic population

2. ✘ Molecular population of the final state

3. ✔ Molecular population of the initial state

4. ✘ Temperature

Question Number : 21 Question Id : 1298403021 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A transistor amplifier has a mid-band power gain of 50dB. At the half power frequencies the gain is

Options :

1. ✘ 25dB
2. ✔ 47dB
3. ✘ 35.5dB
4. ✘ 50dB

Question Number : 22 Question Id : 1298403022 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The amplifier circuit suitable for impedance matching is

Options :

1. ✘ CE
2. ✔ CC
3. ✘ CB
4. ✘ Diode

Question Number : 23 Question Id : 1298403023 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Maximum efficiency of a full wave rectifier is

Options :

1. ✓ 81.2%

2. ✗ 40.6%

3. ✗ 33.33%

4. ✗ 50%

Question Number : 24 Question Id : 1298403024 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For an op-amp having differential gain A_d and common-mode gain A_c the CMRR is given by

Options :

1. ✗ $A_d + A_c$

2. ✓ $\frac{A_d}{A_c}$

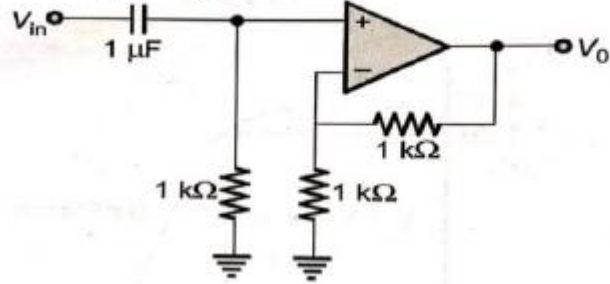
3. ✗ $A_d - A_c$

4. ✗ $\frac{A_c}{A_d}$

Question Number : 25 Question Id : 1298403025 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Op-amp circuit shown below is that of a



Options :

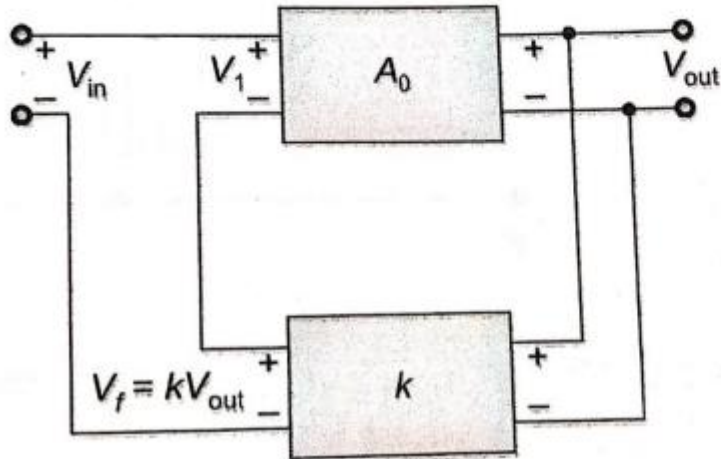
1. ✘ Low pass filter with a maximum gain of 1
2. ✘ Low pass filter with a maximum gain of 2
3. ✘ High pass filter with a maximum gain of 1
4. ✔ High pass filter with a maximum gain of 2

Question Number : 26 Question Id : 1298403026 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the feedback network shown below if the feedback factor k is increased, then the



Options :

1. ✓ Input impedance increases and output impedance decreases
2. ✗ Input impedance increases and output impedance increases
3. ✗ Input impedance decreases and output impedance decreases
4. ✗ Input impedance decreases and output impedance increases

Question Number : 27 Question Id : 1298403027 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An input voltage of $v(t) = 10\sin(100\pi)t$ volts is applied to a half-wave rectifier. Assuming ideal diode characteristics, the average power consumed in watts by the load resistance $R_L = 100$ ohms is _____

Options :

1. ✓ 0.25W
2. ✗ 10W
3. ✗ 0.5W
4. ✗ 1W

Question Number : 28 Question Id : 1298403028 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If both the junction of a transistor are forward biased it will be in

Options :

1. ✓ Saturation mode
2. ✗ Active mode
3. ✗ Cut-off mode
4. ✗ Inverse active mode

Question Number : 29 Question Id : 1298403029 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The operational amplifier is used in the non-linear mode in

Options :

1. ✘ Integrators
2. ✘ Active filters
3. ✔ Schmitt triggers
4. ✘ Instrumentation amplifiers

Question Number : 30 Question Id : 1298403030 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The bandwidth of the ideal Op-amp is of the order of

Options :

1. ✘ 10kHz
2. ✘ 5kHz
3. ✘ 20kHz
4. ✔ Infinite

Question Number : 31 Question Id : 1298403031 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a 10 V battery is connected across the parallel resistors of 10 ohm, 5 ohm, 20 ohm, and 3 ohm. The voltage across 5 ohm resistor will be

Options :

1. ✓ 10V
2. ✗ 5V
3. ✗ 20V
4. ✗ 3V

Question Number : 32 Question Id : 1298403032 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A practical current source consists of

Options :

1. ✗ An ideal current source in series with a resistance
2. ✓ An ideal current source in parallel with a resistance
3. ✗ An ideal current source only
4. ✗ An ideal voltage source in parallel with a resistance

Question Number : 33 Question Id : 1298403033 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The nodal method of circuit analysis is based on

Options :

1. ✘ KVL and Ohm's Law
2. ✔ KCL and Ohm's Law
3. ✘ KCL, KVL and Ohm's Law
4. ✘ KCL and KVL

Question Number : 34 Question Id : 1298403034 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

When the superposition theorem is applied to any circuit, the dependent voltage source in that circuit is always

Options :

1. ✘ Opened
2. ✘ Shorted
3. ✔ Active
4. ✘ Inactive

Question Number : 35 Question Id : 1298403035 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Maximum power is transferred when load impedance is

Options :

1. ✓ Equal to source impedance
2. ✗ Equal to half of the source impedance
3. ✗ Equal to zero
4. ✗ Equal to one

Question Number : 36 Question Id : 1298403036 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a series RLC circuit, if C is increased, what happens to the resonant frequency

Options :

1. ✗ It increases
2. ✓ It decreases
3. ✗ It remains same
4. ✗ It is zero

Question Number : 37 Question Id : 1298403037 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the impedance of an ideal parallel resonant circuit without resistance in either branch

Options :

1. ✘ Zero
2. ✘ Inductive
3. ✘ Capacitive
4. ✔ Infinite

Question Number : 38 Question Id : 1298403038 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The RMS value of sinusoidal A.C. current is equal to its value at an angle of _____ degree.

Options :

1. ✘ 60
2. ✔ 45
3. ✘ 30

4. ✘ 90

Question Number : 39 Question Id : 1298403039 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The magnification of Electron Microscope is about _____

Options :

1. ✘ 100X

2. ✘ 1000X

3. ✔ 1,00,000X

4. ✘ 1500X

Question Number : 40 Question Id : 1298403040 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The voltage applied across an R-L circuit is equal to ___ of V_R and V_L .

Options :

1. ✘ Arithmetic sum

2. ✘ Algebraic sum

3. ✔ Phasor sum

4. ✘ Sum of squares

Question Number : 41 Question Id : 1298403041 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The transient response occurs

Options :

1. ✘ Only in resistive circuits
2. ✘ Only in inductive circuits
3. ✘ Only in capacitive circuits
4. ✔ Both in inductive and capacitive circuits

Question Number : 42 Question Id : 1298403042 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Apparent power is expressed in

Options :

1. ✔ Volt- amperes
2. ✘ Watts

3. ✘ Volt- amperes and watts

4. ✘ VAR

Question Number : 43 Question Id : 1298403043 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a pure capacitor, the voltage

Options :

1. ✘ Is in phase with the current

2. ✘ Is 180 degree out of phase with the current

3. ✔ lags behind the current by 90 degree

4. ✘ leads the current by 90 degree

Question Number : 44 Question Id : 1298403044 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Degree of scattering in transmission electron microscope is a function of _____

Options :

1. ✘ Nervous tissue wavelength of electron beam used

2. ✔ Number and mass of atoms that lie in the electron path

3. ✘ Number of atoms that lie in the electron path

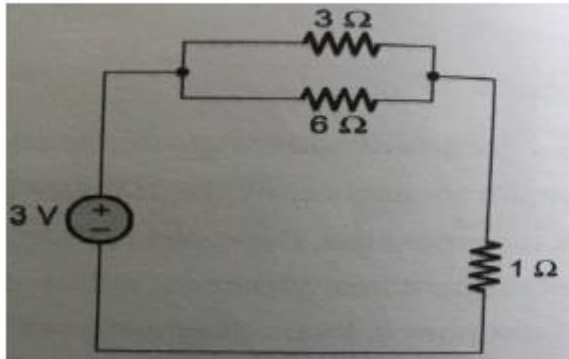
4. ✘ Mass of atoms that lie in the electron path

Question Number : 45 Question Id : 1298403045 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The power supplied by the DC source in the circuit shown below is



Options :

1. ✘ 0 W

2. ✘ 1 W

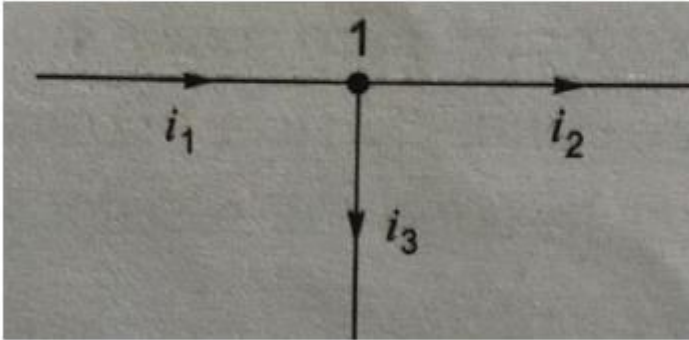
3. ✘ 2.5 W

4. ✔ 3 W

Question Number : 46 Question Id : 1298403046 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Three currents i_1 , i_2 and i_3 meet at a point as shown in the figure. If $i_1 = 3 \cos \omega t$ ampere, $i_2 = 4 \sin \omega t$ ampere and $i_3 = I_3 \cos (\omega t + \Theta)$ ampere, The value of I_3 in amperes is _____



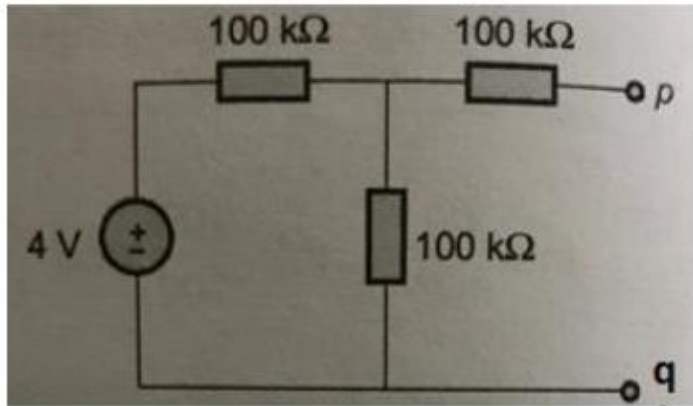
Options :

1. ✓ 5 Ampere
2. ✗ 4 Ampere
3. ✗ 3 Ampere
4. ✗ 7 Ampere

Question Number : 47 Question Id : 1298403047 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Thevenin equivalent circuit representation across terminals p-q of the circuit shown below is a



Options :

1. ✘ 1 V source in series with resistance of 150 K ohm
2. ✔ 2 V source in series with resistance of 150 K ohm
3. ✘ 1 V source in parallel with resistance of 150 K ohm
4. ✘ 2 V source in series with resistance of 100 K ohm

Question Number : 48 Question Id : 1298403048 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The total reactance of a series RLC circuit at resonance is

Options :

1. ✘ Equal to X_L
2. ✘ Equal to R
3. ✘ Equal to X_C
4. ✔ Zero

Question Number : 49 Question Id : 1298403049 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Pipelining in Microprocessor is related to

Options :

1. ✔ Instructions
2. ✘ Memory mapping
3. ✘ ALU
4. ✘ Interrupts

Question Number : 50 Question Id : 1298403050 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The instruction used to clear the accumulator in 8085 is

Options :

1. ✘ CLA A
2. ✔ XRA A
3. ✘ ORA A
4. ✘ ANA A

Question Number : 51 Question Id : 1298403051 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For the periodic signal $v(t) = 30\sin 100t + 10\cos 300t + 6\sin\left(500t + \frac{\pi}{4}\right)$, the fundamental frequency in rad/sec is _____

Options :

1. ✔ 100
2. ✘ 300
3. ✘ 500
4. ✘ 1500

Question Number : 52 Question Id : 1298403052 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The initial value of $20 - 5t - e^{2t}$ is

Options :

1. ✘ 20
2. ✔ 19
3. ✘ 10
4. ✘ 25

Question Number : 53 Question Id : 1298403053 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

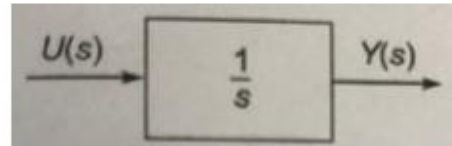
The final value theorem is used to find the

Options :

1. ✔ Steady state value of the system output
2. ✘ Initial value of the system output
3. ✘ Transient behavior of the system output
4. ✘ Both steady state value and transient behavior of the system output

Question Number : 54 Question Id : 1298403054 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Assuming zero initial conditions, the response of the system given below to a unit step input $u(t)$ is



Options :

1. ✘ $u(t)$
2. ✔ $tu(t)$
3. ✘ $t^2 u(t)$
4. ✘ $e^{-t} u(t)$

Question Number : 55 Question Id : 1298403055 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The fundamental period of discrete time signal $x[n]=e^{j5\pi n/6}$ is

Options :

1. ✘ $6/(5\pi)$
2. ✘ $12/5$
3. ✘ 6
4. ✔ 12

Question Number : 56 Question Id : 1298403056 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

4-point DFT of a real discrete time signal of $x[n]$ of length 4 is given by $X[k]$, $n=0, 1, 2, 3$ and $k = 0, 1, 2, 3$. It is given that $X[0]=5$, $X[1] = 1+j1$, $X[2] = 0$, then $X[3]$ is

Options :

1. ✓ $1 - j1$
2. ✗ $1 + j1$
3. ✗ $0.1 - j0.1$
4. ✗ $0.1 + j0.1$

Question Number : 57 Question Id : 1298403057 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

N point Radix-2 FFT algorithm requires _____ complex multiplications

Options :

1. ✓ $(N/2) \log_2 N$
2. ✗ $N \log_2 N$
3. ✗ N

4. ✘ N^2

Question Number : 58 Question Id : 1298403058 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Z-transform of the discrete time signal $x[n]=u[n]$ is

Options :

1. ✘ Z

2. ✘ 1

3. ✔ $\frac{1}{1-z^{-1}}$

4. ✘ z^{-1}

Question Number : 59 Question Id : 1298403059 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The system described by the input output equation $y(n) = n x(n)$ is

Options :

1. ✔ Static and linear

2. ✘ Static and non-linear

3. ✘ Dynamic and linear

4. ✘ Dynamic and non-linear

Question Number : 60 Question Id : 1298403060 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Nyquist rate for the analog signal

$$x_a(t) = 3 \cos 50\pi t + 10 \sin 300\pi t - \cos 100\pi t$$
 is

Options :

1. ✘ 50 Hz

2. ✔ 300 Hz

3. ✘ 100 Hz

4. ✘ 25 Hz

Question Number : 61 Question Id : 1298403061 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ window function is also known as raised cosine window function.

Options :

1. ✘ Rectangular

2. ✘ Kaiser

3. ✘ Blackman

4. ✔ Hanning

Question Number : 62 Question Id : 1298403062 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A second order underdamped system has a damping factor of 0.8. It is subjected to a sinusoidal input of unit amplitude. It has a resonant peak of _____

Options :

1. ✘ 108%

2. ✘ 92%

3. ✘ 20%

4. ✔ It has no resonant peak

Question Number : 63 Question Id : 1298403063 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In order that a first order instrument should indicate an output which is within 10% of the true value of the output when subjected to a sinusoidal input, the product of angular frequency of input (ω) and time constant (τ) of the instrument should be

Options :

1. ✓ Less than 0.5
2. ✘ Greater than 0.5
3. ✘ Less than 10
4. ✘ Greater than 10

Question Number : 64 Question Id : 1298403064 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The discrete time transfer function $\frac{1-2z^{-1}}{1-0.5z^{-1}}$ is

Options :

1. ✘ Non-minimum phase and unstable
2. ✘ Minimum phase and unstable
3. ✘ Minimum phase and stable
4. ✓ Non-minimum phase and stable

Question Number : 65 Question Id : 1298403065 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a continuous time signal $x(t) = \cos 2\pi t$ is sampled at 4Hz, the value of discrete time signal $x(n) = 5$ is

Options :

1. ✘ -0.707

2. ✘ -1

3. ✔ 0

4. ✘ 1

Question Number : 66 Question Id : 1298403066 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An irregular and jagged wound that is produced by the tearing of soft body tissue is known as _____

Options :

1. ✘ Abrasion

2. ✘ Avulsion

3. ✔ Laceration

4. ✘ Incision

Question Number : 67 Question Id : 1298403067 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a Kelvin's double bridge two sets of readings are taken when measuring a low resistance, one being the current in one direction and the other with the direction of current reversed. This is done to

Options :

1. ✘ Eliminate the effect of contact resistance
2. ✘ Eliminate the effect of resistance of leads
3. ✘ Correct the changes in battery voltage
4. ✔ Eliminate the effect of thermo-electric emfs

Question Number : 68 Question Id : 1298403068 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Moving iron instruments can be used on _____

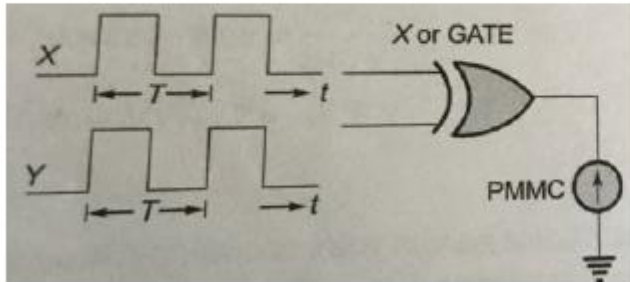
Options :

1. ✔ Both A.C. and D.C.
2. ✘ D.C. only
3. ✘ A.C. only
4. ✘ Half wave rectified A.C.

Question Number : 69 Question Id : 1298403069 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For the two square inputs in the figure, the PMMC meter will read, maximum when the phase difference between them is _____



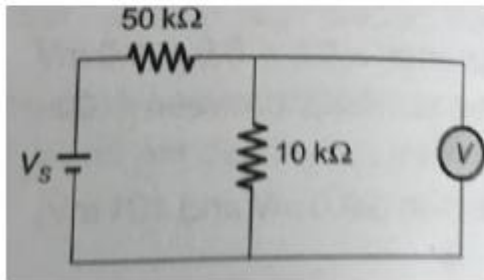
Options :

1. ✘ 0
2. ✘ $T/4$
3. ✔ $T/2$
4. ✘ T

Question Number : 70 Question Id : 1298403070 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A voltmeter is connected across the $10\text{ k}\Omega$ resistor as shown in figure reads 5V . The voltmeter is rated at 1000 ohm/volt and has a full scale reading of 10V . The supply voltage V_s in volts is _____



Options :

1. ✘ 30
2. ✘ 50
3. ✔ 55
4. ✘ 80

Question Number : 71 Question Id : 1298403071 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Bone cells that function as phagocytic cells and are highly active in osteoporosis patients are called _____

Options :

1. ✘ Osteoprogenitor
2. ✔ Osteoclasts

3. ✘ Fibroblasts

4. ✘ Osteoblasts

Question Number : 72 Question Id : 1298403072 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A very low loss coil is tested with a Q meter and the distributed (self) capacitance of the coil is found to be 820pF. Resonance occurred at an angular frequency of 10^6 rad/s with a capacitance of 9.18nF. The inductance of the coil is _____

Options :

1. ✘ 100 pH

2. ✔ 100 μ H

3. ✘ 100 nH

4. ✘ 100 mH

Question Number : 73 Question Id : 1298403073 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Anderson bridge is a modified form of _____

Options :

1. ✓ Maxwell bridge
2. ✗ Wheatstone's bridge
3. ✗ Schering bridge
4. ✗ Kelvin double bridge

Question Number : 74 Question Id : 1298403074 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The system having $G(s) = \frac{16}{s^2 + 8s + 16}$ and unity feedback, system will be

Options :

1. ✗ Under damped
2. ✗ Over damped
3. ✓ Critically damped
4. ✗ Oscillatory

Question Number : 75 Question Id : 1298403075 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The ratio of the output Laplace Transform to the input Laplace Transform assuming zero initial conditions is called _____

Options :

1. ✘ Nyquist's ratio
2. ✘ Dynamic quotient
3. ✔ Transfer function
4. ✘ Gibb's ratio

Question Number : 76 Question Id : 1298403076 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For the system to be stable

Options :

1. ✘ All poles must lie on right of the imaginary axis
2. ✔ All poles must lie on left of the imaginary axis
3. ✘ All zeroes must lie on right of the imaginary axis
4. ✘ All zeroes must lie on left of the imaginary axis

Question Number : 77 Question Id : 1298403077 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An input of 5 volt is applied to a negative feedback closed loop system. The system has a forward gain of 1 and a feedback gain of 1. The magnitude of the output voltage will be _____

Options :

1. ✘ 1 Volt
2. ✘ 1.5 Volt
3. ✘ 2.0 Volt
4. ✔ 2.5 Volt

Question Number : 78 Question Id : 1298403078 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The steady state error is determined as the difference between the reference input and the system output at

Options :

1. ✘ $t = t_p$
2. ✘ $t = 0$
3. ✘ $t = \text{time constant}$
4. ✔ $t = \infty$

Question Number : 79 Question Id : 1298403079 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A system is represented by the differential equation $M \frac{d^2y}{dt^2} + F \frac{dx}{dt} + Kx = u(t)$.

The transfer function relating X(s) and U(s) is

Options :

1. ✘ $\frac{M}{Ms^2 + Fs + K}$

2. ✘ $\frac{F}{Ms^2 + Fs + K}$

3. ✘ $\frac{K}{Ms^2 + Fs + K}$

4. ✔ $\frac{1}{Ms^2 + Fs + K}$

Question Number : 80 Question Id : 1298403080 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

With increase in the type of the system the steady state error for a particular input function

Options :

1. ✘ Increases
2. ✔ Decreases
3. ✘ Remains constant
4. ✘ First increases then decreases

Question Number : 81 Question Id : 1298403081 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The location of the closed loop conjugate pair of pole on $j\omega$ axis indicates that the system is

Options :

1. ✘ Stable
2. ✘ Unstable
3. ✔ Marginally stable
4. ✘ Critically stable

Question Number : 82 Question Id : 1298403082 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In which type of strain gauge the gauge factor is maximum

Options :

1. ✓ Semiconductor
2. ✗ Pure metals
3. ✗ Carbon metal alloys
4. ✗ Super conductors

Question Number : 83 Question Id : 1298403083 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

LVDT works on the principle of

Options :

1. ✗ Variable resistance
2. ✗ Variable self-inductance
3. ✓ Variable mutual inductance
4. ✗ Variable capacitance

Question Number : 84 Question Id : 1298403084 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The size of air cored inductive transducers as compared with their iron cored counterparts is

Options :

1. ✘ Smaller
2. ✔ Bigger
3. ✘ Same
4. ✘ Can be either bigger or smaller

Question Number : 85 Question Id : 1298403085 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Time dependent recoverable deformation under load is called _____ deformation

Options :

1. ✔ Anelastic
2. ✘ Elastic after-effect
3. ✘ Visco-elastic
4. ✘ Elastic

Question Number : 86 Question Id : 1298403086 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A capacitive transducer working on the principle of change of capacitance with change of displacement, exhibits non-linear characteristics. The response of these transducers can be made linear by using

Options :

1. ✓ Differential arrangement
2. ✗ Working them over a large displacement range
3. ✗ The response can not be made linear
4. ✗ No special arrangement is required

Question Number : 87 Question Id : 1298403087 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An optical pulse containing 6×10^6 photons is incident on photodiode and 4.5×10^6 electron hole pairs are created. The maximum possible quantum efficiency of photodiode is _____

Options :

1. ✓ 75%
2. ✗ 80%
3. ✗ 100%

4. ✘ 0%

Question Number : 88 Question Id : 1298403088 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The frequency of light radiation with a wavelength of 500 nm is _____ MHz

Options :

1. ✘ 500

2. ✘ 250

3. ✘ 50

4. ✔ 600

Question Number : 89 Question Id : 1298403089 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a photo-multiplier

Options :

1. ✘ Gain is independent of stray magnetic fields

2. ✘ High frequency response is improved by increasing the number of dynodes (emitting surface)

3. ✔ Secondary emission is used for amplification of low level photo current

4. ✘ The electron are directed to the anode by applying a strong magnetic field

Question Number : 90 Question Id : 1298403090 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A piezoelectric crystal has a thickness of 2mm. Its voltage sensitivity is 0.012 Vm/N. It is subjected to a pressure of 0.5MN/m². The voltage generated is _____ V

Options :

- 1. ✘ 3
- 2. ✘ 6
- 3. ✔ 12
- 4. ✘ 48

Question Number : 91 Question Id : 1298403091 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a ECG wave QRS complex represents _____

Options :

- 1. ✔ Ventricular depolarization
- 2. ✘ Ventricular repolarization

3. ✘ Atrial depolarization

4. ✘ Atrial repolarization

Question Number : 92 Question Id : 1298403092 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The test mostly used for the diagnosis of epilepsy is _____

Options :

1. ✔ EEG

2. ✘ EOG

3. ✘ EMG

4. ✘ ECG

Question Number : 93 Question Id : 1298403093 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ principal ion is not involved for the production of cell potentials

Options :

1. ✘ Sodium

2. ✘ Potassium

3. ✘ Chlorine

4. ✔ Hydrogen

Question Number : 94 Question Id : 1298403094 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

EOG is used for the measurement of _____

Options :

1. ✔ Corneo-retinal standing potential

2. ✘ Blood Pressure

3. ✘ Respiration rate

4. ✘ Heart rate

Question Number : 95 Question Id : 1298403095 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A small branch of an artery leading into capillaries is called _____

Options :

1. ✘ Capillaries

2. ✓ Arteriole

3. ✘ Areolas

4. ✘ Vessel

Question Number : 96 Question Id : 1298403096 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Defibrillators are devices that

Options :

1. ✓ Restore a normal heartbeat by sending an electric pulse

2. ✘ Helps the person to breathe

3. ✘ Measure the volume of air inspired

4. ✘ Uses dialysis to remove impurities and waste products

Question Number : 97 Question Id : 1298403097 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

_____ Instrument is used to measure oxygen saturation level, or the oxygen levels in your blood

Options :

1. ✓ Pulse oximeter
2. ✘ Defibrillator
3. ✘ Pacemaker
4. ✘ Sphygmometer

Question Number : 98 Question Id : 1298403098 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The force needs to be applied to an object to cause it to change from elastic deformation to plastic deformation is known as

Options :

1. ✘ Compressive stress
2. ✘ Impact stress
3. ✘ Tensile stress
4. ✓ Yield Stress

Question Number : 99 Question Id : 1298403099 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which valve does the blood flow through after passing through the right atrium into the right ventricle

Options :

1. ✓ Tricuspid valve
2. ✗ Mitral valve
3. ✗ Bicuspid valve
4. ✗ Aortic valve

Question Number : 100 Question Id : 1298403100 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Linear prediction method, Syntactic method and Long term prediction are the examples of _____ category of ECG compression technique

Options :

1. ✗ Transformation domain
2. ✗ Time domain
3. ✓ Parameter extraction
4. ✗ Frequency domain

Question Number : 101 Question Id : 1298403101 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The blood in hemodialysis is filtered through _____

Options :

1. ✓ Dialyzer
2. ✗ Cholesterol screen
3. ✗ Hemolyzer
4. ✗ Hemoglobin

Question Number : 102 Question Id : 1298403102 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The compression ratio of ECG should be

Options :

1. ✓ Greater than one
2. ✗ Less than one
3. ✗ One
4. ✗ Zero

Question Number : 103 Question Id : 1298403103 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Spirometer is an apparatus _____

Options :

1. ✘ That is capable of exchanging oxygen and carbon dioxide in the blood of human
2. ✔ For measuring the volume of air inspired and expired by the lungs
3. ✘ That is placed under the skin in your chest to help control your heartbeat
4. ✘ That restore a normal heartbeat by sending an electric pulse or shock to the heart

Question Number : 104 Question Id : 1298403104 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

X-rays can be used to detect _____ disease

Options :

1. ✘ Bladder infection
2. ✔ Pneumonia
3. ✘ Diarrhea

4. ✘ Fever

Question Number : 105 Question Id : 1298403105 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The most common form of medical imaging, using high-energy radiation to penetrate skin and tissues but not bone is _____

Options :

1. ✘ Ultrasound
2. ✘ MRI
3. ✔ X-rays
4. ✘ PET

Question Number : 106 Question Id : 1298403106 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

As an ultrasound pulse moves through tissue in a patient's body, which of the following parameter will not change

Options :

1. ✘ Amplitude (energy)
2. ✔ Frequency

3. ✘ Intensity

4. ✘ Physical size

Question Number : 107 Question Id : 1298403107 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The smallest unit in the reconstruction of an MRI image is known as _____

Options :

1. ✘ Pixel

2. ✘ Binary unit

3. ✔ Voxel

4. ✘ Dot

Question Number : 108 Question Id : 1298403108 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Spatial localization in MRI primarily relies on

Options :

1. ✘ Distance from the transmission coil

2. ✘ Distance to the receiving coil

3. ✓ Varying magnetic field across the patient

4. ✗ Tomographic reconstruction

Question Number : 109 Question Id : 1298403109 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The type of joint between the skull bones is _____

Options :

1. ✗ Ball and Socket joint

2. ✗ Synovial Joint

3. ✓ Fibrous joint

4. ✗ Cartilaginous joint

Question Number : 110 Question Id : 1298403110 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Galvanic skin response gives _____

Options :

1. ✗ Activity of endocrine glands

2. ✓ Activity of sweat glands

3. ✘ Baseline value of skin resistance

4. ✘ Baseline value of breathing

Question Number : 111 Question Id : 1298403111 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The structure which is not present in the knee is _____

Options :

1. ✘ Anterior cruciate ligament

2. ✔ Glenohumeral ligament

3. ✘ Posterior cruciate ligament

4. ✘ Medial collateral ligament

Question Number : 112 Question Id : 1298403112 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The bond between amino acids is called _____

Options :

1. ✘ Ionic bond

2. ✓ Peptide bond
3. ✘ Acidic bond
4. ✘ Hydrogen bond

Question Number : 113 Question Id : 1298403113 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The tissue which stores fats is known as _____

Options :

1. ✘ Nervous tissue
2. ✘ Epithelial tissue
3. ✓ Adipose tissue
4. ✘ Muscle tissue

Question Number : 114 Question Id : 1298403114 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The plasma protein which is responsible for blood coagulation is called _____

Options :

1. ✓ Fibrinogen

2. ✘ Globulin

3. ✘ Serum amylase

4. ✘ Albumin

Question Number : 115 Question Id : 1298403115 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Ribs and sternum are connected by _____

Options :

1. ✘ Areolar tissue

2. ✘ White fibrous cartilage

3. ✔ Hyaline cartilage

4. ✘ Bony matter

Question Number : 116 Question Id : 1298403116 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The characterization technique used to measure Young's modulus of a biomaterial is _____

Options :

1. ✓ Calculation from the stress-strain curve
2. ✗ Tensile test
3. ✗ Compression test
4. ✗ Three- and four-point bend test

Question Number : 117 Question Id : 1298403117 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The _____ properties of a biomaterial affect the maximum possible accommodation of cells in the scaffold.

Options :

1. ✓ Topography and roughness
2. ✗ Charge
3. ✗ Stiffness
4. ✗ Surface chemistry

Question Number : 118 Question Id : 1298403118 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Creep mechanism which operates at stress level $10^{-2} > \sigma/G > 10^{-4}$ is

Options :

1. ✓ Dislocation creep
2. ✘ Diffusion creep
3. ✘ Dislocation glide
4. ✘ Gb sliding

Question Number : 119 Question Id : 1298403119 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An inherited red blood cell disorder where there are not healthy red blood cells to carry oxygen throughout human body is known as _____

Options :

1. ✓ Sickle cell anemia
2. ✘ Alopecia
3. ✘ Hemolysis
4. ✘ Heterochromia

Question Number : 120 Question Id : 1298403120 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The condition where blood clot forms in circulatory system is known as _____

Options :

1. ✘ Strombus
2. ✘ Hematoma
3. ✔ Thrombus
4. ✘ Embolus