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 :	Electronics and Instrumentation Engineering 1st Aug 2022 Shift1
Subject Name :	Electronics and Instrumentation Engineering
Creation Date :	2022-08-01 13:15:01
Duration :	180
Total Marks :	200
Display Marks:	No
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
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Electronics and Instrumentation Engineering

Group Number :	1
Group Id :	81959962
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	819599239
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599275
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 81959912231 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If p, q and r are 3 real numbers satisfying the matrix equation,

$$[p \quad q \quad r]\begin{bmatrix}3 & 4 & 1\\ 3 & 2 & 3\\ 2 & 0 & 2\end{bmatrix} = [3 \quad 0 \quad 1] \text{ then } 2p + q - r \text{ is equal to}$$

Options :

1. ✔ -3

2. ✖ -1

3. ✖ 4

4. ✖ 2

Question Number : 2 Question Id : 81959912232 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f(\alpha) = \begin{bmatrix}cos\alpha & sin\alpha\\ -sin\alpha & cos\alpha\end{bmatrix}$ then $f(\alpha)f(\beta) =$

Options :

1. ✖ $f(\alpha) - f(\beta)$

2. ✖ $f(\alpha)+f(\beta)$

3. ✖ $f(\alpha-\beta)$

4. ✔ $f(\alpha+\beta)$

Question Number : 3 Question Id : 81959912233 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of "x" which satisfies the following equations $x+y+z=9, 2x+5y+7z=52$ and $2x+y-z=0$ is

Options :

1. ✖ 0

2. ✔ 1

3. ✖ 2

4. ✖ 3

Question Number : 4 Question Id : 81959912234 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solutions of the equation $\begin{vmatrix} x & 2 & -1 \\ 2 & 5 & x \\ -1 & 2 & x \end{vmatrix} = 0$ are

Options :

1. ✔ $3, -1$

2. ✖ $-3, 1$

3. ✖ $3, 1$

4. ✖ $-3, -1$

Question Number : 5 Question Id : 81959912235 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\frac{x+1}{(2x-a)(x+2)} = \frac{3}{2x-a} + \frac{b}{x+2} \text{ then } (a, b) =$$

Options :

1. ✖ $(1, 5)$

2. ✖ $(5,1)$

3. ✖ $(-5,1)$

4. ✔ $(-5, -1)$

Question Number : 6 Question Id : 81959912236 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \frac{x^2+x+1}{x^2+2x+1} = A + \frac{B}{(x+1)} + \frac{C}{(x+1)^2} \text{ then } A - B =$$

Options :

1. ✖ $4C$

2. ✖ $4C + 1$

3. ✔ $2C$

4. ✖ $3C$

Question Number : 7 Question Id : 81959912237 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Period of $4sin\left(\frac{x}{2}\right) + 5cos\left(\frac{x}{2}\right)$

Options :

1. ✖ π

2. ✖ 2π

3. ✖ 3π

4. ✔ 4π

Question Number : 8 Question Id : 81959912238 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $sinx = \frac{p-q}{p+q}$ then $tan\left(\frac{\pi}{4} - \frac{x}{2}\right) =$

Options :

1. ✔ $\sqrt{\frac{p}{q}}$

2. ✖ $\sqrt{pq}$

3. ✖ $\sqrt{\frac{q}{p}}$

4. ✖ 1

Question Number : 9 Question Id : 81959912239 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The numerical value of $tan\left[2tan^{-1}\left(\frac{1}{5}\right)-\frac{\pi}{4}\right]$ is

Options :

1. ✖ $\frac{7}{17}$

2. ✔ $\frac{-7}{17}$

3. ✖ $\frac{17}{7}$

4. ✖ $\frac{-17}{7}$

Question Number : 10 Question Id : 81959912240 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $tanx+cotx=\frac{4}{\sqrt{3}}$ then $x=$

Options :

1. ✔ $n\pi+\frac{\pi}{6},\ n\pi+\frac{\pi}{3}\ \ n\in Z$

2. ✖ $2n\pi\pm\frac{\pi}{6},\ 2n\pi\pm\frac{\pi}{3}\ \ n\in Z$

3. ✖ $n\pi + \frac{\pi}{6},\ n\pi - \frac{\pi}{3}\ \ n \in Z$

4. ✖ $n\pi + \frac{\pi}{4}, n \in Z$

Question Number : 11 Question Id : 81959912241 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If in a ΔABC, if $\frac{SinB}{SinC} = 2cosA$ then the triangle is

Options :

1. ✖ Equilateral triangle

2. ✖ Right angled triangle

3. ✔ Isosceles triangle

4. ✖ Scalene triangle

Question Number : 12 Question Id : 81959912242 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If z is a complex number such that $|z| = 4$ *and* $\arg(z) = \frac{5\pi}{6}$ then $z =$

Options :

1. ✖ $2\sqrt{3} + 2i$

2. ✔ $-2\sqrt{3} + 2i$

3. ✖ $2\sqrt{3} - 2i$

4. ✖ $-\sqrt{3} + i$

Question Number : 13 Question Id : 81959912243 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The angle between the lines $kx + y + 9 = 0$ and $y - 3x = 4$ is 45^0, then the value of "k" is

Options :

1. ✖ $2 \text{ or } \frac{1}{2}$

2. ✔ $2 \text{ or } -\frac{1}{2}$

3. ✖ $-2 \text{ or } \frac{1}{2}$

4. ✖ $-2 \text{ or } -\frac{1}{2}$

Question Number : 14 Question Id : 81959912244 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the two lines $2x - 3y = 5$ and $3x - 4y = 7$ are two diameters of a circle of radius 7, then the equation of the circle is

Options :

1. ✖ $x^2 + y^2 + 2x - 4y - 47 = 0$

2. ✖ $x^2 + y^2 = 49$

3. ✔ $x^2 + y^2 - 2x + 2y - 47 = 0$

4. ✖ $x^2 + y^2 = 17$

Question Number : 15 Question Id : 81959912245 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The parabola $(y+1)^2 = a(x-2)$ passes through the point (-1,2). The equation of its directrix is

Options :

1. ✖ $4x + 5 = 0$

2. ✔ $4x - 5 = 0$

3. ✖ $4x + 9 = 0$

4. ✖ $4x - 9 = 0$

Question Number : 16 Question Id : 81959912246 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$P(3,2)$ is a point on the ellipse $\frac{x^2}{18} + \frac{y^2}{8} = 1$ whose foci are S *and* S'. The sum of the distances from S *and* S' to the point $P(3,2)$ is _____units

Options :

1. ✖ $3\sqrt{2}$

2. ✖ $2\sqrt{3}$

3. ✖ $4\sqrt{3}$

4. ✔ $6\sqrt{2}$

Question Number : 17 Question Id : 81959912247 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a Hyperbola the transverse and conjugate axes are in the ratio 3:4. The eccentricity of the hyperbola is

Options :

1. ✖ $\frac{4}{3}$

2. ✖ $\frac{3}{2}$

3. ✖ $\frac{5}{4}$

4. ✔ $\frac{5}{3}$

Question Number : 18 Question Id : 81959912248 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \to a} \frac{xe^{-x} - ae^{-a}}{x - a} =$$

Options :

1. ✖ e^{-a}

2. ✖ ae^{-a}

3. ✔ $(1-a)e^{-a}$

4. ✖ $(1+a)e^{-a}$

Question Number : 19 Question Id : 81959912249 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $y = tan^{-1}\left(\frac{ax-b}{bx+a}\right)$ then $\frac{dy}{dx} =$

Options :

1. ✔ $\frac{1}{1+x^2}$

2. ✖ $\frac{1}{x^2-1}$

3. ✖ $\frac{1}{1-x^2}$

4. ✖ $\frac{-1}{1+x^2}$

Question Number : 20 Question Id : 81959912250 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $y = \left(\frac{1}{x}\right)^x$ then $y''(1) =$

Options :

1. ✖ e

2. ✖ 1

3. ✖ -1

4. ✔ 0

Question Number : 21 Question Id : 81959912251 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $u = cos^{-1}\left[\frac{x^3+y^3}{xy}\right]$, then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$

Options :

1. ✖ $cotu$

2. ✖ $\frac{1}{2}tanu$

3. ✖ $-\frac{1}{2}tanu$

4. ✔ $-cotu$

Question Number : 22 Question Id : 81959912252 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The length of tangent at $\sqrt{x} + \sqrt{y} = 5$ at (9,4) is

Options :

1. ✔ $2\sqrt{13}$

2. ✖ $\sqrt{13}$

3. ✖ $4\sqrt{13}$

4. ✖ $5\sqrt{13}$

Question Number : 23 Question Id : 81959912253 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the displacement in time "t" of a particle is given by $s = ae^t + be^{-t}$, then the acceleration is equal to

Options :

1. ✖ Velocity

2. ✔ Displacement

3. ✖ Initial velocity

4. ✖ Negative of velocity

Question Number : 24 Question Id : 81959912254 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Minimum value of $\frac{1-x+x^2}{1+x+x^2}$

Options :

1. ✖ 1

2. ✖ 3

3. ✔ $\frac{1}{3}$

4. ✖ -3

Question Number : 25 Question Id : 81959912255 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The approximate value of $(1.0002)^{3000}$ is

Options :

1. ✔ 1.6

2. ✖ 1.4

3. ✖ 1.2

4. ✖ 1.8

Question Number : 26 Question Id : 81959912256 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\int \frac{dx}{(x+100)\sqrt{x+99}}$

Options :

1. ✖ $2(x+100)^{1/2}+C$

2. ✖ $3(x+100)^{1/2}+C$

3. ✖ $2tan^{-1}\left(\sqrt{x+100}\right)+C$

4. ✔ $2tan^{-1}\left(\sqrt{x+99}\right)+C$

Question Number : 27 Question Id : 81959912257 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\int_0^1 \frac{1-x^2}{1+x^2}\,dx$

Options :

1. ✖ $\frac{\pi}{4} - 1$

2. ✖ $\frac{\pi}{4} + 1$

3. ✔ $\frac{\pi}{2} - 1$

4. ✖ $\frac{\pi}{4}$

Question Number : 28 Question Id : 81959912258 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The area of the region enclosed by the curve $y = xsinx$ and the x- axis between $x = 0$ and $x = 2\pi$ is _____ sq. units

Options :

1. ✔ 2π

2. ✖ 3π

3. ✖ 4π

4. ✖ $\frac{3\pi}{4}$

Question Number : 29 Question Id : 81959912259 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The volume generated by the rotation of the area bounded by the curve $y = e^x sinx$, the x- axis and the lines $x = 0$, $x = \pi$ about x-axis is ___ cu. units

Options :

1. ✖ $\frac{\pi}{6}(e^{2\pi}-1)$

2. ✔ $\frac{\pi}{8}(e^{2\pi}-1)$

3. ✖ $\frac{\pi}{8}(e^{\pi}-1)$

4. ✖ $\frac{\pi}{8}(e^{2\pi}+1)$

Question Number : 30 Question Id : 81959912260 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Mean Value of the function $f(x)=\frac{2}{e^x+1}$ on the interval [0,2] is

Options :

1. ✖ $log\left(\frac{2}{e^2+1}\right)$

2. ✖ $1+log\left(\frac{2}{e^2+1}\right)$

3. ✔ $2+log\left(\frac{2}{e^2+1}\right)$

4. ✖ $2+log(e^2+1)$

Question Number : 31 Question Id : 81959912261 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Values of abscissa (x) and ordinates (y) of a curve are as follows

x	2.0	2.5	3.0	3.5	4.0
y	5.00	7.25	10.00	13.25	17.00

then the area under the curve (round off to two decimal places) is

Options :

1. ✖ 20.45

2. ✖ 20.47

3. ✔ 20.67

4. ✖ 20.57

Question Number : 32 Question Id : 81959912262 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The order and degree of the differential equation $\frac{d^2y}{dx^2} = \left(1 + \left(\frac{dy}{dx}\right)^2\right)^{\frac{1}{3}}$ is

Options :

1. ✖ 1, 6

2. ✔ 2, 3

3. ✖ 2, 2

4. ✖ 3,2

Question Number : 33 Question Id : 81959912263 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$x = a\sin(\omega t + b)$ is a solution of

Options :

1. ✖ $\frac{dx}{dt} + \omega x = 0$

2. ✖ $\frac{d^2x}{dt^2} - \omega^2 x = 0$

3. ✔ $\frac{d^2x}{dt^2} + \omega^2 x = 0$

4. ✖ $\frac{dx}{dt} - \omega x = 0$

Question Number : 34 Question Id : 81959912264 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $y - x\frac{dy}{dx} = a\left(y^2 + \frac{dy}{dx}\right)$ is

Options :

1. ✖ $y = k(a + x)(ay - 1)$

2. ✔ $y = k(a + x)(1 - ay)$

3. ✖ $y = k(ax + 1)(y - 1)$

4. ✖ $y = k(ax - 1)(y^2 - 1)$

Question Number : 35 Question Id : 81959912265 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{dy}{dx} = x^3 - 2xy$ satisfying the condition $y(1) = 2$ is

Options :

1. ✖ $x^2 + 2y + 1 = 4e^{1-x^2}$

2. ✖ $2y - x^2 + 1 = 4e^{1+x^2}$

3. ✔ $2y - x^2 + 1 = 4e^{1-x^2}$

4. ✖ $x^2 - 2y + 1 = 4e^{1-x^2}$

Question Number : 36 Question Id : 81959912266 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Solution of $\frac{d^3y}{dx^3} + 3\frac{d^2y}{dx^2} - 4y = 0$ is

Options :

1. ✖ $y = C_1e^{-x} + (C_2 + C_3x)e^{2x}$

2. ✔ $y = C_1e^{x} + (C_2 + C_3x)e^{-2x}$

3. ✖ $y = C_1e^{x} + C_2e^{-x} + C_3e^{2x}$

4. ✖ $y = C_1e^{-x} + e^{2x}(C_2cos2x + C_3sin2x)$

Question Number : 37 Question Id : 81959912267 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The particular integral of $\frac{d^2y}{dx^2} - 3\frac{dy}{dx} + 2y = (e^x + 1)^2$ is

Options :

1. ✔ $xe^{2x} - 2xe^{x} + \frac{1}{2}$

2. ✖ $xe^{2x} - 2xe^{x} - 1$

3. ✖ $xe^{2x} + 2xe^{x} + 1$

4. ✖ $xe^{2x} - 2xe^{x} - \frac{1}{2}$

Question Number : 38 Question Id : 81959912268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Particular Integral of $\frac{d^3y}{dx^3} + 2\frac{d^2y}{dx^2} + \frac{dy}{dx} = sin2x$ is

Options :

1. ✖ $\frac{1}{50}(3\cos 2x + 4\sin 2x)$

2. ✖ $\frac{1}{50}(3\cos 2x + 2\sin 2x)$

3. ✔ $\frac{1}{50}(3\cos 2x - 4\sin 2x)$

4. ✖ $\frac{1}{50}(3\cos 2x + 2\sin 2x)$

Question Number : 39 Question Id : 81959912269 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Particular Integral of $\frac{d^2y}{dx^2} - y = x^2$ is

Options :

1. ✔ $-(x^2+2)$

2. ✖ x^2-2

3. ✖ (x^2+2)

4. ✖ $2-x^2$

Question Number : 40 Question Id : 81959912270 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\{(e^{3t}-e^{-3t})^2\} =$

Options :

1. ✖ $\frac{2s}{s^2-36}+\frac{2}{s}$

2. ✖ $\frac{s}{s^2-36}-\frac{1}{s}$

3. ✔ $\frac{2s}{s^2-36}-\frac{2}{s}$

4. ✖ $\frac{s}{s^2-36}+\frac{1}{s}$

Question Number : 41 Question Id : 81959912271 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is FALSE

Options :

1. ✖ $L\{te^t\}=\frac{1}{(s-1)^2}$

2. ✖ If $L\{f(t)\} = F(s)$ then $L\{f(at)\} = \frac{1}{a}F\left(\frac{s}{a}\right)$

3. ✔ If $L\{f(t)\} = F(s)$ then $L\{e^{at}f(t)\} = F(s+a)$

4. ✖ If $L\{f(t)\} = F(s)$ then $L\{f(t-T)\} = e^{-st}F(s)$

Question Number : 42 Question Id : 81959912272 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\{te^{-t}sin3t\} =$

Options :

1. ✖ $\frac{6s}{s^2+2s+10}$

2. ✔ $\frac{6(s+1)}{(s^2+2s+10)^2}$

3. ✖ $\frac{6(s-1)}{s^2+2s+10}$

4. ✖ $\frac{6(s-1)}{(s^2+2s+10)^2}$

Question Number : 43 Question Id : 81959912273 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\left\{\frac{cos2t-cos3t}{t}\right\} =$

Options :

1. ✖ $\sqrt{log\left(\frac{s^2+9}{s^2+4}\right)}$

2. ✖ $e^{\frac{s^2+9}{s^2+4}}$

3. ✖ $log\left(\frac{s^2+9}{s^2+4}\right)$

4. ✔ $log\sqrt{\frac{s^2+4}{s^2+9}}$

Question Number : 44 Question Id : 81959912274 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L^{-1}\left\{\frac{2s+3}{s^2+2s+2}\right\} =$

Options :

1. ✖ $e^{-t}(2cost + sint)$

2. ✖ $e^{-t}(2sint + cost)$

3. ✔ $e^{t}(2cost + sint)$

4. ✖ $e^{t}(2sint + cost)$

Question Number : 45 Question Id : 81959912275 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L^{-1}\left\{\frac{1}{(s+1)(s^2+2s+2)}\right\} =$

Options :

1. ✖ $e^{t}(1 + cost)$

2. ✖ $e^{t}(1-\cos t)$

3. ✖ $e^{-t}(1+\cos t)$

4. ✔ $e^{-t}(1-\cos t)$

Question Number : 46 Question Id : 81959912276 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the Differential equation $\frac{d^2y}{dt^2}+2\frac{dy}{dt}+y(t)=0$ with $y(0)=-2$ and $y'(0)=0$. The Laplace transform of $y(t)$ *is*

Options :

1. ✔ $\frac{-2(2+s)}{(s+1)^2}$

2. ✖ $\frac{2(2+s)}{(s+1)^2}$

3. ✖ $\frac{(2+s)}{(s+1)^2}$

4. ✖ $\frac{-(3+2s)}{(s+1)^2}$

Question Number : 47 Question Id : 81959912277 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Fourier series expansion of $f(x)=|x|$ over $(-\pi,\pi)$, the value of Fourier coefficient $a_1=$

Options :

1. ✖ $\frac{2}{\pi}$

2. ✖ $\frac{4}{\pi}$

3. ✖ $-\frac{2}{\pi}$

4. ✔ $-\frac{4}{\pi}$

Question Number : 48 Question Id : 81959912278 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f(x) = xsinx, 0 < x < 2\pi$ and Fourier series of $f(x)$ is given by $f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty}(a_n cosnx + b_n sinnx)$ then $b_1 =$

Options :

1. ✖ 1

2. ✖ 0

3. ✖ -1

4. ✔ π

Question Number : 49 Question Id : 81959912279 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f(x) = \begin{cases} x, \ when\ 0 < x < \frac{\pi}{2} \\ \pi - x, \ when \frac{\pi}{2} < x < \pi \end{cases}$ and the Fourier Series expansion of $f(x)$ is given by $f(x) = \sum_{n=1}^{\infty} b_n sinnx$ then the value of $b_2 =$

Options :

1. ✖ π

2. ✔ 0

3. ✖ $-\pi$

4. ✖ -1

Question Number : 50 Question Id : 81959912280 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $f(x) = e^{-x}$ then the value of "a_0" in the Fourier series expansion of $f(x)$ in the interval $(-1, 1)$

Options :

1. ✔ $\frac{e^2-1}{e}$

2. ✖ $\frac{e^2+1}{e}$

3. ✖ $\frac{1-e^2}{e}$

4. ✖ $\frac{1}{e}$

Physics

Section Id :	819599240
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number : 1
Sub-Section Id : 819599276
Question Shuffling Allowed : Yes

Question Number : 51 Question Id : 81959912281 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The quantity which has the same dimensional formula as that of linear momentum is

Options :

1. ✖ Pressure

2. ✖ Linear acceleration

3. ✔ Impulse

4. ✖ Gravitational constant

Question Number : 52 Question Id : 81959912282 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The temperature at which the electrical resistance of mercury drops to zero is

Options :

1. ✖ 11.2 K

2. ✖ 7.2 K

3. ✔ 4.2 K

4. ✖ 0 K

Question Number : 53 Question Id : 81959912283 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Pick the correct answer from the following two statements on photoelectric effect

(a) Threshold frequency varies from metal to metal

(b) Work function is constant for all metals

Options :

1. ✔ Only (a) is true

2. ✖ Only (b) is true

3. ✖ Both (a) & (b) are true

4. ✖ Both (a) & (b) are false

Question Number : 54 Question Id : 81959912284 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A graph between the temperature (on x-axis) and the pressure (on y-axis) for the given mass of an ideal gas at constant volume gives a straight line intercepts x-axis at

Options :

1. ✖ 0 °C

2. ✖ 273.15 °C

3. ✔ -273.15 °C

4. ✖ 546.3 °C

Question Number : 55 Question Id : 81959912285 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A heat energy of 1400 J is given to an ideal gas at constant pressure and the workdone in expansion of its volume is 800 J. The increase in internal energy is

Options :

1. ✖ 2200 J

2. ✔ 600 J

3. ✖ 200 J

4. ✖ 3000 J

Question Number : 56 Question Id : 81959912286 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The angle made by the vector $(\mathbf{i} + \mathbf{j})$ with x-axis is

Options :

1. ✖ 0°

2. ✖ 30°

3. ✔ 45°

4. ✖ 90°

Question Number : 57 Question Id : 81959912287 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two forces 20 N and 40 N act simultaneously at a point with an angle of 60° between them. The direction of their resultant is given by

Options :

1. ✔ $Tan^{-1}\left[\frac{\sqrt{3}}{2}\right]$

2. ✖ $Tan^{-1}\left[\frac{2}{\sqrt{3}}\right]$

3. ✖ $Tan^{-1}\left[\frac{\sqrt{3}}{4}\right]$

4. ✖ $Tan^{-1}\left[\frac{2\sqrt{3}}{3}\right]$

Question Number : 58 Question Id : 81959912288 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dot product of force and velocity represents

Options :

1. ✖ Acceleration

2. ✖ Workdone

3. ✖ Momentum

4. ✔ Power

Question Number : 59 Question Id : 81959912289 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A bullet fired from a gun travels maximum horizontal range of 40m. With what velocity bullet is projected initially. ($g = 10\ m/s^2$, neglect air resistance)

Options :

1. ✔ 20 m/s

2. ✖ 4 m/s

3. ✖ 8 m/s

4. ✖ 160 m/s

Question Number : 60 Question Id : 81959912290 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A bomb is dropped from an aeroplane flying horizontally with constant velocity at some height from the ground. The path of the bomb is like

Options :

1. ✔ Parabola

2. ✖ Hyperbola

3. ✖ Circle

4. ✖ Ellipse

Question Number : 61 Question Id : 81959912291 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body is projected into the air with a velocity of 19.6 m/s at an angle of 30° to the horizontal. The time during which the body remains in air is (neglect air resistance)

Options :

1. ✖ 0.5 s

2. ✖ 1 s

3. ✔ 2 s

4. ✖ 9.8 s

Question Number : 62 Question Id : 81959912292 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body of mass m is sliding down on a rough inclined plane of 'θ' angle of inclination. The normal reaction acting on the body is balanced by which component of weight

Options :

1. ✖ mg(sinθ-cosθ)

2. ✖ mg(sinθ+cosθ)

3. ✖ mgsinθ

4. ✔ mgcosθ

Question Number : 63 Question Id : 81959912293 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body of mass m dropped freely from a height of 'y' from the ground. After travelling a distance of 'x' downwards, its kinetic energy becomes (neglect air resistance)

Options :

1. ✖ mgy

2. ✔ mgx

3. ✖ mg(y-x)

4. ✖ 0

Question Number : 64 Question Id : 81959912294 Question Type : MCQ Option Shuffling : Yes Display

Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The workdone in lifting 6 cement bags each of mass 25 kg to the top of a building of height 10 m is ($g=10\ m/s^2$)

Options :

1. ✖ 2500 J

2. ✖ 600 J

3. ✔ 15000 J

4. ✖ 150 J

Question Number : 65 Question Id : 81959912295 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pick the correct statement for a body falling freely in air

Options :

1. ✖ Its potential energy increases, kinetic energy decreases

2. ✔ Its potential energy decreases, kinetic energy increases

3. ✖ Its potential energy remains constant, kinetic energy increases

4. ✖ Its kinetic energy remains constant, potential energy increases

Question Number : 66 Question Id : 81959912296 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The displacement of a particle executing simple harmonic motion is given by $y = 4\,Sin\,(\pi t + \frac{\pi}{4})$ where y is in metre and t is in second. The frequency of oscillation is

Options :

1. ✔ 0.5 Hz

2. ✖ 1 Hz

3. ✖ 2 Hz

4. ✖ 3.14 Hz

Question Number : 67 Question Id : 81959912297 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 'l' and 'T' are the length and time period of oscillations of a simple pendulum at a given place respectively then

Options :

1. ✖ $l \propto \frac{1}{T}$

2. ✖ $l \propto \frac{l}{T^2}$

3. ✖ $l \propto \sqrt{T}$

4. ✔ $l \propto T^2$

Question Number : 68 Question Id : 81959912298 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The principle of sound used in the detection of dangerous gases in mines is

Options :

1. ✖ Echo

2. ✔ Beats

3. ✖ Reverberation

4. ✖ Doppler effect

Question Number : 69 Question Id : 81959912299 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A person hears an echo of his own voice in 1 s from a distant hill. If the velocity of sound in air is 340 m/s, the distance between the person and the hill is

Options :

1. ✔ 170 m

2. ✖ 340 m

3. ✖ 510 m

4. ✖ 85 m

Question Number : 70 Question Id : 81959912300 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

S.I unit of the Young's modulus of the material of a wire is

Options :

1. ✖ Joule

2. ✖ Dyne

3. ✖ kg/m^3

4. ✔ Pascal

Question Number : 71 Question Id : 81959912301 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 'd' is the density of liquid which rises to a height of 'h' in a capillary tube of radius 'r' (r « h) and 'θ' is the angle of contact then the surface tension of the liquid is given by

Options :

1. ✖ $\frac{hrdg}{2sin\theta}$

2. ✔ $\frac{hrdg}{2cos\theta}$

3. ✖ $\frac{hrd}{2gsin\theta}$

4. ✖ $\frac{hrdg}{sin\theta}$

Question Number : 72 Question Id : 81959912302 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The resistance of the material of a wire is 5 Ω. The resistance of another wire of same material having double length and half the radius is

Options :

1. ✔ 40 Ω

2. ✖ 0.4 Ω

3. ✖ 5 Ω

4. ✖ 10 Ω

Question Number : 73 Question Id : 81959912303 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two currents 3 mA and 4.5 mA are flowing towards the junction in a circuit and three currents 1 mA, 4 mA and 'x' are flowing away. The value of 'x' (in mA) is

Options :

1. ✖ 12.5

2. ✖ 5

3. ✔ 2.5

4. ✖ 1.5

Question Number : 74 Question Id : 81959912304 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The force between two magnetic poles separated in air is 4×10^{-6} N. If the distance between them is doubled then the force becomes

Options :

1. ✖ 16×10^{-6} N

2. ✖ 16×10^{-12} N

3. ✖ 2×10^{-6} N

4. ✔ 10^{-6} N

Question Number : 75 Question Id : 81959912305 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The magnetic moment of a bar magnet of pole strength 50 A-m is 5 A-m^2. The length of the bar magnet is

Options :

1. ✖ 0.05 m

2. ✔ 0.1 m

3. ✖ 0.25 m

4. ✖ 0.4 m

Chemistry

Section Id :	819599241
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599277
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 81959912306 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of unpaired electrons present in Cl atom

Options :

1. ✖ Four

2. ✖ Three

3. ✖ Two

4. ✔ One

Question Number : 77 Question Id : 81959912307 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Stark effect is

Options :

1. ✖ Splitting of Spectral lines in Magnetic field

2. ✔ Splitting of Spectral lines in Electric field

3. ✖ Splitting of Spectral lines in Magnetic and Electric fields

4. ✖ Spectral lines do not split in Magnetic and Electric fields

Question Number : 78 Question Id : 81959912308 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An Element A with Atomic number 12 combines with an Element **B** of Atomic number 8. Then the Compound formed is

Options :

1. ✔ Ionic **AB**

2. ✖ Covalent **AB**

3. ✖ Covalent A_2

4. ✖ Ionic A_2B

Question Number : 79 Question Id : 81959912309 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of moles of solute present in 1000ml of 0.2M solution are

Options :

1. ✖ 0.1 mole

2. ✔ 0.2 mole

3. ✖ 0.4 mole

4. ✖ 0.5 mole

Question Number : 80 Question Id : 81959912310 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is true for milk colloid system

Options :

1. ✔ Dispersed phase is Fat Globules

2. ✖ Dispersion medium is Fat Globules

3. ✖ Dispersed phase is Water

4. ✖ Dispersion medium is Milk

Question Number : 81 Question Id : 81959912311 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

5.6 g of KOH are dissolved in 1Litre of Water. The $\mathbf{P^H}$ of the solution is

Options :

1. ✖ 1

2. ✔ 13

3. ✖ 14

4. ✖ 2

Question Number : 82 Question Id : 81959912312 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Among the following which is not Lewis Base

Options :

1. ✖ $\mathbf{C_2H_2}$

2. ✔ $\mathbf{BF_3}$

3. ✖ $\mathbf{H_2O}$

4. ✖ $\mathbf{OH^-}$

Question Number : 83 Question Id : 81959912313 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Composition of German Silver is

Options :

1. ✖ Ni ,Fe,Cr

2. ✔ Cu,Zn,Ni

3. ✖ Cu,Zn

4. ✖ Al,Cu,Mg

Question Number : 84 Question Id : 81959912314 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The method which is not used for Concentration of Ore

Options :

1. ✖ Hand picking

2. ✖ Froth floatation

3. ✖ Electromagnetic separation

4. ✔ Smelting

Question Number : 85 Question Id : 81959912315 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The mass of a substance deposited by passing 1Coulomb of elecricity is

Options :

1. ✖ Atomic weight

2. ✖ Molecular weight

3. ✔ Electrochemical equivalent

4. ✖ Equivalent weight

Question Number : 86 Question Id : 81959912316 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the same quantity of electricity is passed through an aqueous solution of $AgNO_3$ and $CuSO_4$. Solution connected in a series. The amount of Ag deposited is 1.08 g, the amount of Cu deposited is

Options :

1. ✖ 3.175 g

2. ✖ 63.5 g

3. ✖ 0.635 g

4. ✔ 0.3175 g

Question Number : 87 Question Id : 81959912317 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a Galvanic cell

Options :

1. ✖ Electrical energy is converted into Chemical energy

2. ✖ Mechanical energy is converted into Electrical energy

3. ✔ Chemical energy is converted into Electrical energy

4. ✖ Chemical energy is converted into Mechanical energy

Question Number : 88 Question Id : 81959912318 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Among the following which is not a secondary battery

Options :

1. ✖ Lithium- ion battery

2. ✖ Lead Storage battery

3. ✖ Ni-Cd battery

4. ✔ Leclanche battery

Question Number : 89 Question Id : 81959912319 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Among the following metals, which easily undergoes corrosion is

Options :

1. ✖ Au

2. ✔ Na

3. ✖ Cu

4. ✖ Pt

Question Number : 90 Question Id : 81959912320 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example for Cathodic Coating

Options :

1. ✖ Zn coating on Fe

2. ✖ Al coating on Fe

3. ✖ Ba coating on Fe

4. ✔ Sn coating Fe

Question Number : 91 Question Id : 81959912321 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the Hard Water is boiled, the precipitate formed is

Options :

1. ✖ $MgSO_4$

2. ✖ $MgCl_2$

3. ✖ $Ca(HCO_3)_2$

4. ✔ $CaCO_3$

Question Number : 92 Question Id : 81959912322 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Chemical Formula of Zeolite is

Options :

1. ✖ K Al Si_3O_8

2. ✔ $Na_2Al_2Si_2O_8.xH_2O$

3. ✖ $Al_2O_3.2H_2O$

4. ✖ $K_2O\ Al_2O_3\ 6SiO_2\ 2H_2O$

Question Number : 93 Question Id : 81959912323 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is an odd compound

Options :

1. ✔ Buna-S

2. ✖ Polystyrene

3. ✖ PVC

4. ✖ Teflon

Question Number : 94 Question Id : 81959912324 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The configuration at every double bond in Natural Rubber is

Options :

1. ✖ Octet

2. ✔ Cis

3. ✖ Trans

4. ✖ Sextet

Question Number : 95 Question Id : 81959912325 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Blue gas mainly contains

Options :

1. ✔ CO, H_2

2. ✖ CH_4, H_2

3. ✖ CH_4, CO_2

4. ✖ CO, N_2

Question Number : 96 Question Id : 81959912326 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

How many grams of O_2 is required for combustion of 16 grams of methane (CH_4)

Options :

1. ✖ 32 g

2. ✔ 64 g

3. ✖ 16 g

4. ✖ 8g

Question Number : 97 Question Id : 81959912327 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Ozone layer depletion is due to

Options :

1. ✖ SO_2

2. ✖ CO_2

3. ✔ CFC

4. ✖ H_2

Question Number : 98 Question Id : 81959912328 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hyacinth is useful in reduction of

Options :

1. ✖ Air pollution

2. ✖ Ozone layer depletion

3. ✖ Global warming

4. ✔ Water pollution

Question Number : 99 Question Id : 81959912329 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The parameter used to indicate the Water pollution is

Options :

1. ✔ BOD

2. ✖ Contaminant

3. ✖ pollutant

4. ✖ TLV

Question Number : 100 Question Id : 81959912330 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is Non-Renewable energy source

Options :

1. ✔ Coal

2. ✖ Wind energy

3. ✖ Solar energy

4. ✖ Tidal energy

Electronics and Instrumentation Engineering

Section Id :	819599242
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	819599278
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 81959912331 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The resonant frequency in radians/sec of a circuit having a 10mH inductor in series with a 1μF capacitor is

Options :

1. ✖ 10^8

2. ✔ 10^4

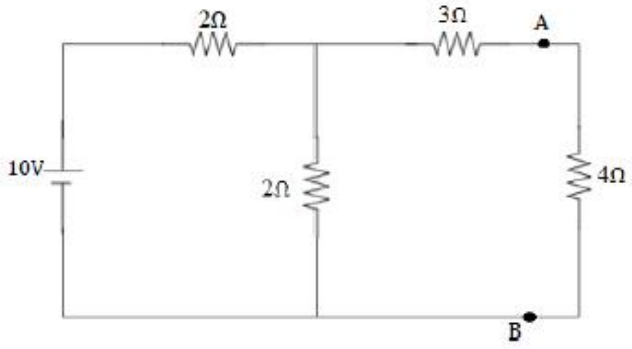
3. ✖ 10^2

4. ✖ 10^3

Question Number : 102 Question Id : 81959912332 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Thevenin resistance across the terminals AB for the following circuit is:



Options :

1. ✔ 4Ω

2. ✖ 2 Ω

3. ✖ 3 Ω

4. ✖ 1 Ω

Question Number : 103 Question Id : 81959912333 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Three 2V cells are connected in parallel. The output voltage is

Options :

1. ✖ 6V

2. ✖ 3V

3. ✔ 2V

4. ✖ 1.5V

Question Number : 104 Question Id : 81959912334 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A 125V DC motor is rated at 10KW. What is the current rating for the motor?

Options :

1. ✖ 8 A

2. ✖ 4.6 A

3. ✖ 46.2 A

4. ✔ 80 A

Question Number : 105 Question Id : 81959912335 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of turns of primary and secondary windings of a transformer is 100 and 200 respectively. If the current through the primary winding is 2A, the current through the secondary winding is

Options :

1. ✔ 1A

2. ✖ 2A

3. ✖ 1.5A

4. ✖ 1.2 A

Question Number : 106 Question Id : 81959912336 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two coils of self inductances 2mH and 8mH are placed so close together that the effective flux in one coil is completely linked with the other. The mutual inductance between these coils is

Options :

1. ✖ 10 mH

2. ✖ 6 mH

3. ✔ 4 mH

4. ✖ 16 mH

Question Number : 107 Question Id : 81959912337 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An ideal voltage source of 12V provides a current of 150mA to a load connected across it. If the load impedance is halved, the new load current will be

Options :

1. ✖ 0.15 A

2. ✔ 0.3 A

3. ✖ 1.2 A

4. ✖ 0.1 A

Question Number : 108 Question Id : 81959912338 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following material is a diamagnetic material

Options :

1. ✖ Nickel

2. ✖ Iron

3. ✖ Aluminium

4. ✔ Copper

Question Number : 109 Question Id : 81959912339 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A 1μF capacitor is connected to 12V battery. The energy stored in the capacitor is

Options :

1. ✖ 12 μJ

2. ✖ 12 J

3. ✔ 72 J

4. ✖ 72 μJ

Question Number : 110 Question Id : 81959912340 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the applied voltage is 1000V and thickness of dielectric is 5cm, then the electric field intensity is

Options :

1. ✖ 200 kV/m

2. ✖ 2 kV/m

3. ✔ 20 kV/m

4. ✖ 10 kV/m

Question Number : 111 Question Id : 81959912341 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two 1 columb charges are kept at 1m distance in air medium. What is the force of attraction or repulsion between them?

Options :

1. ✖ 1 dyne

2. ✖ 1 N

3. ✔ $9x10^9$ N

4. ✖ 1.6 μN

Question Number : 112 Question Id : 81959912342 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A 3-phase 440V, 50 Hz Induction motor has 4% slip. The frequency of rotor e.m.f is

Options :

1. ✖ 200 Hz

2. ✖ 50 Hz

3. ✖ 0.2 Hz

4. ✔ 2 Hz

Question Number : 113 Question Id : 81959912343 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The frequency voltage of generated by an alternator having 4 poles and rotating at 1800 r.p.m is

Options :

1. ✔ 60 Hz

2. ✖ 7200 Hz

3. ✖ 120 Hz

4. ✖ 200 Hz

Question Number : 114 Question Id : 81959912344 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The function of baffles in speaker system is

Options :

1. ✖ To produce echo effect

2. ✔ To prevent the noise interference

To allow high frequencies to pass

3. ✖

To provide bass

4. ✖

Question Number : 115 Question Id : 81959912345 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Negative resistance characteristics is exhibited by

Options :

Varactor Diode

1. ✖

Photo Diode

2. ✖

Tunnel Diode

3. ✔

Zener diode

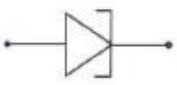
4. ✖

Question Number : 116 Question Id : 81959912346 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

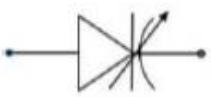
Correct Marks : 1 Wrong Marks : 0

The circuit symbol of varactor Diode is

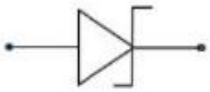
Options :

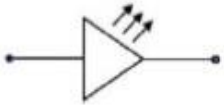


1. ✖



2. ✔

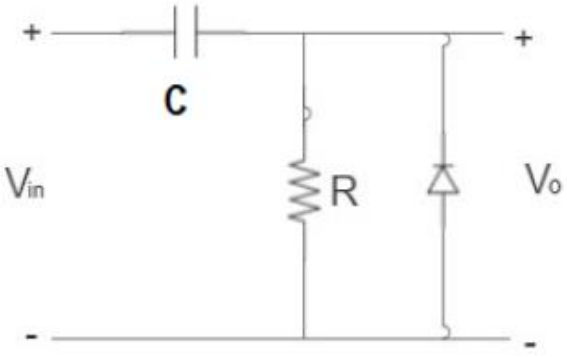
3. ✖ 

4. ✖ 

Question Number : 117 Question Id : 81959912347 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The circuit shown in the given figure is



Options :

1. ✔ Positive clamper

2. ✖ Negative clamper

3. ✖ Positive clipper

4. ✖ Negative clipper

Question Number : 118 Question Id : 81959912348 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In common Base configuration of a transistor if I_c=0.95 mA and I_B=0.05 mA. The value of current amplification factor is

Options :

1. ✖ 0.5

2. ✔ 0.95

3. ✖ 1

4. ✖ 0.8

Question Number : 119 Question Id : 81959912349 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Phase shift provided by one phase shift network in RC phase shift oscillator in 3 stage is

Options :

1. ✔ 60 degree

2. ✖ 180 degree

3. ✖ 120 degree

4. ✖ 90 degree

Question Number : 120 Question Id : 81959912350 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which is the name of process that removing of copper present in the unmasked portion in PCB?

Options :

1. ✖ Grinding

2. ✖ Desoldering

3. ✖ Filing

4. ✔ Etching

Question Number : 121 Question Id : 81959912351 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The constant current region of a JFET is called as

Options :

1. ✖ Ohmic region

2. ✖ Breakdown region

3. ✔ Pinch-off region

4. ✖ Saturation region

Question Number : 122 Question Id : 81959912352 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a filter, no load output voltage is 275V and full load output voltage is 250V. The regulation of the circuit is

Options :

1. ✖ 5%

2. ✖ 25%

3. ✖ 27.5%

4. ✔ 10%

Question Number : 123 Question Id : 81959912353 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A Darlington pair consisting of two power transistors has an effective β of 120. If the driver BJT has a β of 20, the β of the main transistor is

Options :

1. ✔ 6

2. ✖ 2

3. ✖ 10

4. ✖ 4

Question Number : 124 Question Id : 81959912354 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the common mode gain of a differential amplifier if CMRR=10^5 and differential gain = 10^5

Options :

1. ✖ 10^{10}

2. ✖ 10^5

3. ✖ $2x10^5$

4. ✔ 1

Question Number : 125 Question Id : 81959912355 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A gain of 1000 times in voltage is expressed by

Options :

1. ✔ 60 dB

2. ✖ 600 dB

3. ✖ 120 dB

4. ✖ 30 dB

Question Number : 126 Question Id : 81959912356 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a Unijunction Transistor (UJT) relaxation oscillator, the value of R_{B1} is 5KΩ and R_{B2} is 2 KΩ. The value of intrinsic standoff ratio is

Options :

1. ✔ 0.6

2. ✖ 0.5

3. ✖ 0.9

4. ✖ 0.1

Question Number : 127 Question Id : 81959912357 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When negative voltage feedback is applied to an amplifier of gain 100, the overall gain falls to 50. What would be the value of fraction of output voltage feedback?

Options :

1. ✔ 0.01

2. ✖ 0.05

3. ✖ 0.02

4. ✖ 0.3

Question Number : 128 Question Id : 81959912358 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum rectifier efficiency of a fullwave rectifier is

Options :

1. ✖ 40.6%

2. ✖ 89%

3. ✖ 50%

4. ✔ 81.2%

Question Number : 129 Question Id : 81959912359 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$(170)_{10}$ is equivalent to

Options :

1. ✖ $(FD)_{16}$

2. ✖ $(DF)_{16}$

3. ✖ $(AF)_{16}$

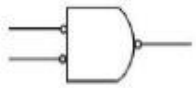
4. ✔ $(AA)_{16}$

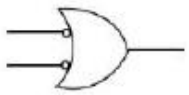
Question Number : 130 Question Id : 81959912360 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

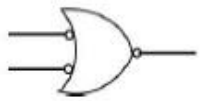
Correct Marks : 1 Wrong Marks : 0

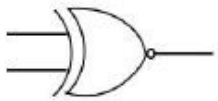
Which of the following gates shown in figures is an AND gate?

Options :

1. ✖ 

2. ✖ 

3. ✔ 

4. ✖ 

Question Number : 131 Question Id : 81959912361 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Boolean expression ABC+BC+AC reduces to

Options :

1. ✖ A

2. ✖ B

3. ✖ C

4. ✔ (A+B)C

Question Number : 132 Question Id : 81959912362 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of 4:1 multiplexers required to make 64:1 multiplexer is

Options :

1. ✔ 16

2. ✖ 7

3. ✖ 32

4. ✖ 64

Question Number : 133 Question Id : 81959912363 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Number of flip-flops required for a count of 50 pulse is

Options :

1. ✖ 50

2. ✖ 25

3. ✖ 10

4. ✔ 6

Question Number : 134 Question Id : 81959912364 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Race around condition occurs in a J-k flip flop when

Options :

1. ✖ Both the inputs are ZERO

2. ✔ Both the inputs are ONE

3. ✖ The inputs are complementary

4. ✖ When one input is delayed

Question Number : 135 Question Id : 81959912365 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The logic family TTL is a

Options :

1. ✔ Current sinking

2. ✖ Current sourcing

3. ✖ Voltage sinking

4. ✖ Voltage sourcing

Question Number : 136 Question Id : 81959912366 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dual of $x + \overline{x} = 1$ is

Options :

1. ✖ $x.\overline{x} = 1$

2. ✔ $x.\overline{x} = 0$

3. ✖ $x + \overline{x} = 0$

4. ✖ $x - \overline{x} = 1$

Question Number : 137 Question Id : 81959912367 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The memory in which the stored data is lost, when power is switched off is

Options :

1. ✖ ROM

2. ✖ Ferrite core memory

3. ✔ RAM

4. ✖ PROM

Question Number : 138 Question Id : 81959912368 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In serial adder, the addition is carried out

Options :

1. ✖ 3 bits per second

2. ✖ Byte by Byte

3. ✔ Bit by Bit

4. ✖ All bits at the same time

Question Number : 139 Question Id : 81959912369 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What are the three output conditions of a tri state buffer?

Options :

1. ✖ High-Z, 0, float

2. ✖ 1, Low-Z, float

3. ✖ Negative, Positive, Zero

4. ✔ HIGH, LOW, FLOAT

Question Number : 140 Question Id : 81959912370 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not used as ionizing gas in Geiger Muller counter?

Options :

1. ✖ Argon

2. ✖ Methane

3. ✖ Helium

4. ✔ Nitrogen

Question Number : 141 Question Id : 81959912371 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the air is holding one-third as much moisture as it can possibly hold, what is the relative humidity?

Options :

1. ✖ 50%

2. ✖ 25%

3. ✖ 67%

4. ✔ 33%

Question Number : 142 Question Id : 81959912372 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The viscosity of a fluid in motion is 1 poise. What will be its viscosity (in Poise) when the fluid is at rest?

Options :

1. ✖ 0.5

2. ✖ 2

3. ✔ 1

4. ✖ 5

Question Number : 143 Question Id : 81959912373 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A Quartz piezo-electric crystal having a thickness of 2mm and voltage sensitivity 0.005 V-m/N is subjected to a pressure of 1.5MN/m^2. What is the output voltage?

Options :

1. ✖ 165V

2. ✔ 150V

3. ✖ 100V

4. ✖ 200V

Question Number : 144 Question Id : 81959912374 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hot wire anemometer is used to measure

Options :

1. ✖ Pressure in gases

2. ✖ Pressure in liquids

3. ✖ Liquid discharge

4. ✔ Velocity of a gas

Question Number : 145 Question Id : 81959912375 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which type of proximity sensor is not suitable of detecting 'glass bottles'

Options :

1. ✖ Photoelectric type

2. ✔ Inductive type

3. ✖ Capacitive type

4. ✖ Ultrasonic type

Question Number : 146 Question Id : 81959912376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A displacement of 12.5 mm results in a secondary voltage of 5V in an LVDT. If the secondary voltage is 3.2V, the absolute value of the corresponding displacement is

Options :

1. ✖ 4 mm

2. ✖ 6 mm

3. ✔ 8 mm

4. ✖ 10 mm

Question Number : 147 Question Id : 81959912377 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Gyroscope is used to measure

Options :

1. ✖ Linear Acceleration

2. ✔ Angular velocity

3. ✖ Angular velocity and Linear Acceleration

4. ✖ Linear Velocity

Question Number : 148 Question Id : 81959912378 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Iron-constantan thermocouple is commercially known as _____ thermocouple

Options :

1. ✖ I – type

2. ✔ J - type

3. ✖ K - type

4. ✖ E – type

Question Number : 149 Question Id : 81959912379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The flowmeter which cannot measure bidirectional flow is

Options :

1. ✖ Ultrasonic flowmeter

2. ✖ Electromagnetic flowmeter

3. ✔ Turbine flowmeter

4. ✖ Electro Mechanical Flowmeter

Question Number : 150 Question Id : 81959912380 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Mc Leod gauge works on the principle of

Options :

1. ✔ Boyle's law

2. ✖ Pascal's law

3. ✖ Hook's law

4. ✖ Newton's law

Question Number : 151 Question Id : 81959912381 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following flowmeter is dependent of fluid conductivity

Options :

1. ✖ Venturi meter

2. ✖ Turbine flowmeter

3. ✖ Ultrasonic flowmeter

4. ✔ Magnetic flowmeter

Question Number : 152 Question Id : 81959912382 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate the gauge factor of a strain gauge if the value of resistance is 120Ω, which changes by $24x10^{-5}\Omega$ for 1 microstrain.

Options :

1. ✔ 2

2. ✖ 1

3. ✖ 24

4. ✖ 5

Question Number : 153 Question Id : 81959912383 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following crystal produce scintillation?

Options :

1. ✖ Sodium chloride

2. ✔ Sodium iodide

3. ✖ Sodium sulphate

4. ✖ Sodium cardonate

Question Number : 154 Question Id : 81959912384 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In nuclear power station, moderator is used to

Options :

1. ✖ Absorb neutrons

2. ✔ Reduce the speed of neutrons

3. ✖ Accelerate the speed of neutrons

4. ✖ Stop chain reactions

Question Number : 155 Question Id : 81959912385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is the primary objective of bleaching in wood pulp?

Options :

1. ✖ To increase strength

2. ✖ To maximize yield

3. ✔ To increase brightness

4. ✖ To remove lignin

Question Number : 156 Question Id : 81959912386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Proving rings are used to measure

Options :

1. ✖ Displacement

2. ✖ Shock

3. ✖ Acceleration

4. ✔ Force

Question Number : 157 Question Id : 81959912387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The traffic light system is a

Options :

1. ✖ Closed loop system

2. ✔ Open loop system

3. ✖ Combination of Closed and Open loop system

4. ✖ Time Delay System

Question Number : 158 Question Id : 81959912388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A force of 400 N is required to open a process control valve. What is the area of diaphragm needed for a diaphragm actuator to open the valve with a control gauge pressure of 40 Kpa?

Options :

1. ✔ $0.01\ m^2$

2. ✖ $0.04\ m^2$

3. ✖ $0.1\ m^2$

$0.4\ m^2$

4. ✖

Question Number : 159 Question Id : 81959912389 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the gain of a controller is 5, what is the value of proportional band (in %)

Options :

5%

1. ✖

20%

2. ✔

50%

3. ✖

45%

4. ✖

Question Number : 160 Question Id : 81959912390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cascade control means

Options :

Feed forward control

1. ✖

ON-OFF Control

2. ✖

One Feedback loop

3. ✖

More than one Feedback loop

4. ✔

Question Number : 161 Question Id : 81959912391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A current to pressure converter receives a 4-20 mA signal and converts it into a proportional pneumatic signal is

Options :

1. ✖ 0-15 PSI

2. ✔ 3-15 PSI

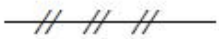
3. ✖ 4-20 PSI

4. ✖ 10-50 PSI

Question Number : 162 Question Id : 81959912392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the following P&I diagram



Options :

1. ✔ Pneumatic line

2. ✖ Hydraulic line

3. ✖ Capillary tube

4. ✖ Mechanical link

Question Number : 163 Question Id : 81959912393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

ANSI stands for

Options :

1. ✖ American Network Security Interrupt

2. ✖ American Network Standard Interfacing

3. ✔ American Network Standard Institute

4. ✖ American Network Signal Interrupts

Question Number : 164 Question Id : 81959912394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The symbol of a butterfly valve is

Options :

1. ✖ 

2. ✖ 

3. ✔ 

4. ✖ 

Question Number : 165 Question Id : 81959912395 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

ON-OFF controller is basically a proportional controller with

Options :

1. ✔ Zero Proportional band

2. ✖ Large Proportional band

3. ✖ Medium Proportional band

4. ✖ Range Proportional Band

Question Number : 166 Question Id : 81959912396 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Offset can be eliminated with the help of

Options :

1. ✖ Derivative action

2. ✖ Proportional action

3. ✔ Integral action

4. ✖ Proportional Derivate and Integral Action

Question Number : 167 Question Id : 81959912397 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Which of the following represents the correct relation between pressure and distance between flapper and Nozzle?

Options :

1. ✖ Direct Proportionality

2. ✔ Inverse Proportionality

3. ✖ Equal

4. ✖ Derivative

Question Number : 168 Question Id : 81959912398 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

In a ratio controller, if the controlled flow is 500 gpm and the wild flow is 200 gpm, what is the ratio factor?

Options :

1. ✔ 5/2

2. ✖ 2/5

3. ✖ 3/2

4. ✖ 3/5

Question Number : 169 Question Id : 81959912399 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

A stepper motor has 10^0 per step and must rotate at 250 rpm. What input pulse rate, in pulses per second is required?

Options :

1. ✖ 9000 pulses/sec

2. ✖ 2500 pulses/sec

3. ✖ 25 pulses/sec

4. ✔ 150 pulses/sec

Question Number : 170 Question Id : 81959912400 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Find the working force resulting from 200N applied to a 1 cm radius forcing piston, if the working piston has a radius of 6 cm.

Options :

1. ✖ 1200 N

2. ✔ 7200 N

3. ✖ 1800 N

4. ✖ 1000N

Question Number : 171 Question Id : 81959912401 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An equal percentage valve has a maximum flow of $50m^3$/sec and a minimum of 2 m^3/sec. If the full travel is 2 cm, find the flow at a 1 cm opening.

Options :

1. ✖ $25\ m^3/sec$

2. ✖ $2\ m^3/sec$

3. ✖ $1\ m^3/sec$

4. ✔ $10\ m^3/sec$

Question Number : 172 Question Id : 81959912402 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The feed forward control system

Options :

1. ✖ Cannot make corrections until a measurable error exists

2. ✖ Makes a change in output that is the integrated error

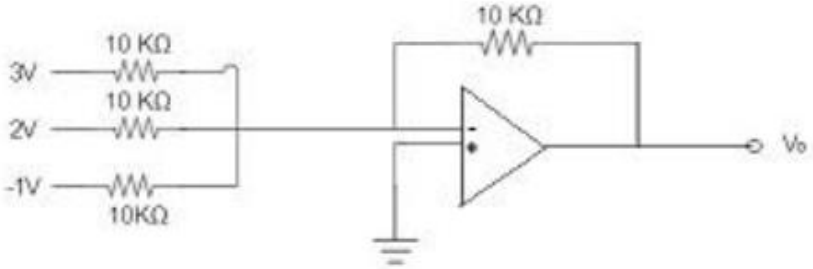
3. ✖ Makes a change in output that is the differentiated error

4. ✔ Predicts the incoming deviation and compensates for it.

Question Number : 173 Question Id : 81959912403 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The output voltage (V_o) in the given circuit is



Options :

1. ✖ 4V

2. ✔ -4V

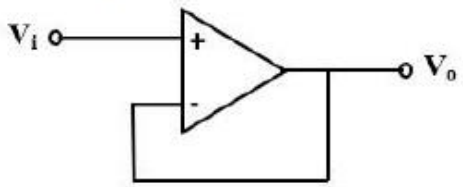
3. ✖ 6V

4. ✖ -6V

Question Number : 174 Question Id : 81959912404 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The OP Amp circuit shown below is a



Options :

1. ✖ Voltage to current converter

2. ✖ Summer

3. ✖ Non inverting amplifier

4. ✔ Voltage follower

Question Number : 175 Question Id : 81959912405 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The cutoff frequency of a first order low pass filter for feedback resistance R_f=2kΩ and feedback capacitance C_f=0.05μF is

Options :

1. ✔ 10,000 radians/sec

2. ✖ 8,000 radians/sec

3. ✖ 1,000 radians/sec

4. ✖ 1,200 radians/sec

Question Number : 176 Question Id : 81959912406 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How many pins are utilized for the purpose of PLL in IC 565.

Options :

1. ✖ 14

2. ✖ 8

3. ✔ 10

4. ✖ 6

Question Number : 177 Question Id : 81959912407 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the output voltage for an integrator when input is a step voltage for $0 \leq t \leq 2$, RC=3 sec and V_{in}=6V

Options :

1. ✖ -6V

2. ✖ -3V

3. ✖ -2V

4. ✔ -4V

Question Number : 178 Question Id : 81959912408 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

IC 7805 provides a constant output voltage of

Options :

1. ✔ 5 V

2. ✖ 6 V

3. ✖ 12 V

4. ✖ 15 V

Question Number : 179 Question Id : 81959912409 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A symmetrical astable multivibrator has R=100Ω and C=0.1μF.

The periodic time is T is

Options :

1. ✖ 138 µF

2. ✖ 69 µF

3. ✖ 6.9 µF

4. ✔ 13.8 µF

Question Number : 180 Question Id : 81959912410 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following type of flip-flop is used in 555 IC?

Options :

1. ✔ SR

2. ✖ T

3. ✖ D

4. ✖ JK

Question Number : 181 Question Id : 81959912411 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A Current to voltage converter produces a

Options :

1. ✖ Proportional output current for a variable input voltage

2. ✔ Proportional output voltage for a variable input current

3. ✖ Variable output voltage for a constant input current

4. ✖ Constant output voltage for a variable input current

Question Number : 182 Question Id : 81959912412 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which circuit converts irregularly shaped waveform to regular shaped waveforms?

Options :

1. ✖ Monostable Multivibrator

2. ✖ RC Phase shift oscillator

3. ✔ Schmitt trigger

4. ✖ Integrator

Question Number : 183 Question Id : 81959912413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How a triangular wave generator is derived from square wave generator?

Options :

1. ✖ Connect oscillator at the output

2. ✖ Connect voltage follower at the output

3. ✖ Connect differentiator at the output

4. ✔ Connect integrator at the output

Question Number : 184 Question Id : 81959912414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The resolution of 5 bit D/A converter is

Options :

1. ✖ $\frac{1}{32}$

2. ✖ 32

3. ✔ $\frac{1}{31}$

4. ✖ 31

Question Number : 185 Question Id : 81959912415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Conversion time of 10 bit successive approximation type A/D converter, if the clock frequency is 10 MHz is

Options :

1. ✖ 0.1 µsec

2. ✖ 0.01 µsec

3. ✔ 1 µsec

4. ✖ 10 µsec

Question Number : 186 Question Id : 81959912416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The internal RAM memory of the 8051 is

Options :

1. ✖ 32 bytes

2. ✔ 128 bytes

3. ✖ 256 bytes

4. ✖ 512 bytes

Question Number : 187 Question Id : 81959912417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Which port of 8255 PPI is capable of performing the hand shaking function with the interfaced devices?

Options :

1. ✖ Port A

2. ✖ Port B

3. ✔ Port C

4. ✖ Port A and Port B

Question Number : 188 Question Id : 81959912418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The contents of the accumulator after this operation is

```
MOV A, # 0B H
ANL  A, # 2C  H
```

Options :

1. ✖ 1101 0111

2. ✖ 1101 1010

3. ✔ 0000 1000

4. ✖ 0010 1000

Question Number : 189 Question Id : 81959912419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The robot designed with Cartesian coordinate system has

Options :

1. ✔ Three linear movements

2. ✖ Three rotational movements

3. ✖ Two linear and one rotational movement

4. ✖ Two rotational and one linear movement

Question Number : 190 Question Id : 81959912420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

8251 peripheral IC is a

Options :

1. ✖ DMA Controller

2. ✔ Universal Synchronous and Asynchronous Receiver and Transmitter

3. ✖ Keyboard and display controller

4. ✖ LED Controller

Question Number : 191 Question Id : 81959912421 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

An NOR function implemented in ladder logic uses

Options :

1. ✔ Normally closed contacts in series

2. ✖ Normally open contacts in series

3. ✖ Normally closed contacts in parallel

4. ✖ Normally open contacts in parallel

Question Number : 192 Question Id : 81959912422 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Which of the following is a 16 bit register in 8051

Options :

1. ✖ Accumulator

2. ✖ TCON

3. ✖ TMOD

4. ✔ PC

Question Number : 193 Question Id : 81959912423 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the full form of SCADA system?

Options :

1. ✖ Supervisory Control and Document Acquisition

2. ✖ Supervisory Control and Document Assessment

3. ✖ Supervisory Control and Data Assessment

4. ✔ Supervisory Control and Data Acquisition

Question Number : 194 Question Id : 81959912424 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

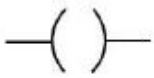
Correct Marks : 1 Wrong Marks : 0

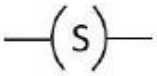
Choose the symbol that is used in ladder programming which is similar to the below diagram

Options :

1. ✖ 

2. ✔ 

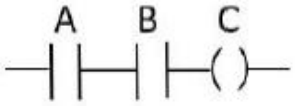
3. ✖ 

4. ✖ 

Question Number : 195 Question Id : 81959912425 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the equivalent logic function of the following ladder diagram



Options :

1. ✖ NOR

2. ✖ NAND

3. ✖ OR

4. ✔ AND

Question Number : 196 Question Id : 81959912426 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The fullform of DCS is

Options :

1. ✖ Derivative Control System

2. ✔ Distributed Control System

3. ✖ Data Control System

4. ✖ Data Complete System

Question Number : 197 Question Id : 81959912427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In 8051 micro controller, let A contains 251 and B contains 18. The instruction DIV AB will produce the following value in the accumulator

Options :

1. ✔ 13

2. ✖ 17

3. ✖ 18

4. ✖ 24

Question Number : 198 Question Id : 81959912428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following two pins are used for transferring and receiving data serially in 8051 microcontroller?

Options :

1. ✖ XTAL1, XTAL2

2. ✖ $\overline{WR}$, $\overline{RD}$

3. ✖ $\overline{INT0}$, $\overline{INT1}$

4. ✔ TXD, RXD

Question Number : 199 Question Id : 81959912429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the fullform of CNC?

Options :

1. ✖ Computer number control

2. ✖ Computer numbers count

3. ✖ Computer network control

4. ✔ Computer Numerical control

Question Number : 200 Question Id : 81959912430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following registers are used to set the timer/counter mode in 8051 microcontroller?

Options :

1. ✔ TMOD, TCON

2. ✖ PSW, PC

3. ✖ SMOD, SCON

4. ✖ PSW, SMOD