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 3rd Aug 2021 Shift1
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Electronics and Instrumentation Engineering

Group Number :	1

Group Id :	800894100
Group Maximum Duration :	0
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Show Attended Group? :	No
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Mathematics

Section Id :	800894388
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
Sub-Section Number :	1
Sub-Section Id :	800894442
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 80089419846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$, then $A^{50} =$

Options :

1. ✖ $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

2. ✔ $\begin{bmatrix} 1 & 0 & 0 \\ 25 & 1 & 0 \\ 25 & 0 & 1 \end{bmatrix}$

3. ✖ $\begin{bmatrix} 1 & 0 & 0 \\ 24 & 1 & 0 \\ 24 & 0 & 1 \end{bmatrix}$

4. ✖ $\begin{bmatrix} 1 & 0 & 0 \\ 50 & 1 & 0 \\ 50 & 0 & 1 \end{bmatrix}$

Question Number : 2 Question Id : 80089419847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $a+b+c=0$, $\begin{vmatrix} ax & by & cz \\ bz & cx & ay \\ cy & az & bx \end{vmatrix} = k \begin{vmatrix} x & y & z \\ z & x & y \\ y & z & x \end{vmatrix} = abc(x^3+y^3+z^3) - xyz(a^3+b^3+c^3)$, then $k =$

Options :

1. ✖ xyz

2. ✔ abc

3. ✖ $x+y+z$

4. ✖ 0

Question Number : 3 Question Id : 80089419848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Consider the statements with reference to the 3× 3 matrices A and B and k is a constant .

I) $A = kB \Rightarrow |A| = k|B|$.

II) adj (AB)=adj(B) adj(A) .

III) for a matrix C, if A=BC⇒ C=$B^{-1}A$

Which of the above statements are correct?

Options :

1. ✖ Only I and II are correct

2. ✔ Only II is correct

3. ✖ Only III is correct

4. ✖ Only II and III are correct

Question Number : 4 Question Id : 80089419849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the solution of the system of equations $x - y + z = 4, 2x + y - 3z = 0, x + y + z = 2$ is (x, y, z).

then x+y+z=

Options :

1. ✖ 0

2. ✖ 3

3. ✔ 2

4. ✖ 4

Question Number : 5 Question Id : 80089419850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\frac{3x-2}{(x+1)(2x^2+3)} = \frac{A}{x+1} - \frac{Bx+C}{2x^2+3}$, then $A + B + C =$

Options :

1. ✖ 2

2. ✔ -4

3. ✖ 0

4. ✖ -2

Question Number : 6 Question Id : 80089419851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $y = \frac{a^x + a^{-x}}{2}$, $x > 0$ and $a > 1$ then $x =$

Options :

1. ✖ $\frac{a^y - a^{-y}}{2}$

2. ✔ $\log_a\left(y+\sqrt{y^2-1}\right)$

3. ✖ $\log_a\left(\frac{y-\sqrt{y^2-1}}{2}\right)$

4. ✖ $\log_{1/a} y$

Question Number : 7 Question Id : 80089419852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $a^{2019-x} \cdot b^{2021x} = a^{x+2021} \cdot b^{2019x}$, then $x =$

Options :

1. ✖ $\log_{(\frac{b}{a})} b$

2. ✖ $\log_{(\frac{a}{b})} b$

3. ✔ $\log_{(\frac{b}{a})} a$

4. ✖ $\log_{(\frac{a}{b})} a$

Question Number : 8 Question Id : 80089419853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\tan\theta = \frac{p}{q}$ then $\frac{p\sin\theta - q\cos\theta}{p\sin\theta + q\cos\theta} =$

Options :

1. ✖ $\frac{p-q}{p+q}$

2. ✖ $\frac{p^2-q}{p+q^2}$

3. ✔ $\frac{p^2-q^2}{p^2+q^2}$

4. ✖ $\frac{2p}{p+q}$

Question Number : 9 Question Id : 80089419854 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the area of a triangle is 75 sq.cm and two of its sides are 20 cm and 15 cm, then the included angle between the sides is

Options :

1. ✖ 60^0 or 120^0

2. ✔ 30^0 or 150^0

3. ✖ 45^0 or 135^0

4. ✖ 90^0 or 135^0

Question Number : 10 Question Id : 80089419855 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\cosh 2x = 99$, then $\coth x =$

Options :

1. ✖ $\frac{5}{7\sqrt{2}}$

2. ✔ $\frac{10}{7\sqrt{2}}$

3. ✖ $\frac{10}{2\sqrt{7}}$

4. ✖ $\frac{5}{2\sqrt{7}}$

Question Number : 11 Question Id : 80089419856 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A complex number 'z 'having least modulus value and satisfying $|z - 2 + 2i| = 1$ is

Options :

1. ✖ $\left(2 - \frac{1}{\sqrt{2}}\right)(1 + i)$

2. ✖ $\left(2 + \frac{1}{\sqrt{2}}\right)(1 + i)$

3. ✔ $\left(2 - \frac{1}{\sqrt{2}}\right)(1 - i)$

4. ✖ $\left(2+\frac{1}{\sqrt{2}}\right)(1-i)$

Question Number : 12 Question Id : 80089419857 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\frac{(1+i)x-2i}{3+i}+\frac{(2-3i)y+i}{3-i}=1$, then $x+y=$

Options :

1. ✖ $\frac{75}{67}$

2. ✖ $\frac{18}{37}$

3. ✖ $\frac{57}{35}$

4. ✔ $\frac{66}{23}$

Question Number : 13 Question Id : 80089419858 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$\left(\frac{\sqrt{3}+i}{2}\right)^6+\left(\frac{\sqrt{3}-i}{2}\right)^6=$

Options :

1. ✔ -2

2. ✖ -4

3. ✖ -6

4. ✖ -8

Question Number : 14 Question Id : 80089419859 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the equation of the straight line $x + y + 1 = 0$ is changed into the form $x \cos \alpha + y \sin \alpha = p$, $(p > 0)$, then α =

Options :

1. ✖ $\frac{\pi}{4}$

2. ✖ $\frac{3\pi}{4}$

3. ✔ $\frac{5\pi}{4}$

4. ✖ $\frac{7\pi}{4}$

Question Number : 15 Question Id : 80089419860 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

GCD of p, q, r is 1. If the line $px + qy + r = 0$ is passing through the point (4,3) the sum of the intercepts made by the line on the coordinate axes is 14, then a value of $p + q + r$ =

Options :

1. ✖ -25

2. ✖ -23

3. ✔ -17

4. ✖ 31

Question Number : 16 Question Id : 80089419861 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The distance between the parallel lines $3x-4y+20=0, 3x-4y+5=0$ is

Options :

1. ✖ 15 units

2. ✖ 20 units

3. ✔ 3 units

4. ✖ 5 units

Question Number : 17 Question Id : 80089419862 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The distance between the centers of the two circles touching the coordinate axes and the line $3x+4y=12$ in the first quadrant is

Options :

1. ✖ $5\sqrt{3}$

2. ✖ $2\sqrt{5}$

3. ✖ $3\sqrt{5}$

4. ✔ $5\sqrt{2}$

Question Number : 18 Question Id : 80089419863 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of a tangent to the circle $x^2 + y^2 - 2x + 8y - 23 = 0$ having slope 3 is

Options :

1. ✖ $6x - 2y + 25 = 0$

2. ✖ $3x - y + 27 = 0$

3. ✖ $3x - y + 23 = 0$

4. ✔ $3x - y + 13 = 0$

Question Number : 19 Question Id : 80089419864 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The interval in which the value of λ lies, if the line $3x - 4y = \lambda$ cuts the circle $x^2 + y^2 - 4x - 8y = 5$ at two points is

Options :

1. ✖ $(15, 35)$

2. ✖ $(35, 15)$

3. ✔ $(-35, 15)$

4. ✖ $(-15, 35)$

Question Number : 20 Question Id : 80089419865 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For $A \neq 0$ $\lim_{n\to\infty}\left(\frac{A+e^{nx}}{x+Ae^{nx}}\right) =$

Options :

1. ✖ 1, when $x > 0$

2. ✔ $\frac{A}{x}$, when $x < 0$

3. ✖ $\frac{A}{x}$, when $x > 0$

4. ✖ 0, when $x \in \mathbb{R}$

Question Number : 21 Question Id : 80089419866 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let f be a differentiable function such that $f(x+y) = f(x) \cdot f(y), \forall\, x, y \in \mathbb{R}$. If $f'(0) = -3$ and $f(5) = 9$,

then $f'(5) =$

Options :

1. ✔ -27

2. ✖ 6

3. ✖ $-\frac{1}{3}$

4. ✖ -3

Question Number : 22 Question Id : 80089419867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $y = x^{-x}$ then $\frac{x}{y}\frac{d^2y}{dx^2} + 1 =$

Options :

1. ✖ x

2. ✖ y^2

3. ✔ $y(1 + \log_e x)^2$

4. ✖ $(1 + \log_e x)$

Question Number : 23 Question Id : 80089419868 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The angle of intersection between the curves $x^2 + y^2 = 36\sqrt{2}$ and $x^2 - y^2 = 36$, is

Options :

1. ✖ $\frac{\pi}{6}$

2. ✔ $\frac{\pi}{4}$

3. ✖ $\frac{\pi}{3}$

4. ✖ $\frac{\pi}{12}$

Question Number : 24 Question Id : 80089419869 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If m is the slope of a tangent to the curve $e^y = 1 + x^2$, then

Options :

1. ✖ $|m| > 1$

2. ✖ $m > 1$

3. ✖ $m > -1$

4. ✔ $|m| \leq 1$

Question Number : 25 Question Id : 80089419870 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum and minimum values of the function $f(x)=x^3-18x^2+96x+4$ are M and

m respectively, then M-m=

Options :

1. ✔ 32

2. ✖ 22

3. ✖ 42

4. ✖ 52

Question Number : 26 Question Id : 80089419871 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $u = log\left(\frac{x^3+y^3}{x^5+y^5}\right)$, then $\left(x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}\right)=$

Options :

1. ✖ e^u

2. ✔ -2

3. ✖ log(u)

4. ✖ 1

Question Number : 27 Question Id : 80089419872 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(t) = 1 + t^2 + t^4 + t^6$, then $\int f(\tan x)dx =$

Options :

1. ✖ $x + \frac{(\tan x)^3}{3} + \frac{(\tan x)^5}{5} + \frac{(\tan x)^7}{7} + c$

2. ✔ $\tan x + \frac{(\tan x)^5}{5} + c$

3. ✖ $(\tan x)^2 + \frac{(\tan x)^5}{5} + c$

4. ✖ $\tan x + \frac{(\tan x)^3}{3} + \frac{(\tan x)^5}{5} + \frac{(\tan x)^7}{7} + c$

Question Number : 28 Question Id : 80089419873 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\int\left((1+x)\sin x + (1-x)\cos x\right)dx =$ A(sinx - cosx) + f(x)(sinx + cos x) + C, then A f(x)=

Options :

1. ✖ 3x

2. ✖ 3 sinx

3. ✔ - 2x

4. ✖ 2 x +sinx

Question Number : 29 Question Id : 80089419874 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \int x^5 e^{x^2} dx = \frac{1}{2} e^{x^2} f(x) + c \text{ then } f(2) =$$

Options :

1. ✖ 8

2. ✖ 9

3. ✔ 10

4. ✖ 12

Question Number : 30 Question Id : 80089419875 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\lim_{n\to\infty} \frac{1}{n}\left(\sin\left(\frac{1}{n}\right) + \sin\left(\frac{2}{n}\right) + \sin\left(\frac{3}{n}\right) + \ldots\ldots \sin(1)\right) =$$

Options :

1. ✖ $\cos(1)$

2. ✖ Cos (½)

3. ✔ $2\sin^2\left(\frac{1}{2}\right)$

4. ✖ $\log 2$

Question Number : 31 Question Id : 80089419876 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The area bounded by the curve $y = (x-1)(x-2)(x-3)$ and x-axis lying between $x = 1$ and $x = 3$

is

Options :

1. ✖ $\frac{5}{2}$

2. ✖ $\frac{11}{2}$

3. ✔ $\frac{1}{2}$

4. ✖ $\frac{7}{4}$

Question Number : 32 Question Id : 80089419877 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The area of the region bounded by the curves $y = \sin x$ and $y = \cos x$, x-axis, $x=0$ and $x=\frac{\pi}{2}$ is

Options :

1. ✖ twice the area between $y = (\sin x - \cos x)$, x-axis, $x=0$ and $x=\frac{\pi}{4}$

2. ✖ equal to the area between $y = \sin x$, x-axis, $x=0$ and $x=\frac{\pi}{4}$

3. ✖

equal to the area between $y = (\sin x + \cos x)$, x-axis, $x=0$ and $x=\frac{\pi}{2}$

4. ✔ twice the area between $y = \sin x$, x-axis, $x=0$ and $x=\frac{\pi}{4}$

Question Number : 33 Question Id : 80089419878 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The value of a function f at different points are given in the following table

x	0	1	2	3	4	5	6
f(x)	0	1	1.414	1.732	2	2.236	2.449

The approximate value of $\int_0^6 f(x)\,dx =$

Options :

1. ✖ 8.516

2. ✔ 9.716

3. ✖ 9.125

4. ✖ 9.203

Question Number : 34 Question Id : 80089419879 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If p and q respectively are order and degree of the differential equation $y^2\left(\frac{d^2y}{dx^2}\right)+3x\left(\frac{dy}{dx}\right)^{\frac{1}{3}}=\sin x-x^2y^2$, then pq =

Options :

1. ✖ 2

2. ✔ 6

3. ✖ 15

4. ✖ 12

Question Number : 35 Question Id : 80089419880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of the curve passing through the origin and satisfying the differential equation $\frac{dy}{dx}=\frac{x-y}{x+y}$ is

Options :

1. ✔ $x^2-y^2-2xy=0$

2. ✖ $x^2-y^2+2xy=0$

3. ✖ $x^2+y^2-2xy=0$

4. ✖ $x^2+y^2+2xy=0$

Question Number : 36 Question Id : 80089419881 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{dy}{dx} - ky = 0, y(0) = 1$, approach zero as x$\rightarrow \infty$, when

Options :

1. ✖ $k = 0$

2. ✖ $k > 0$

3. ✔ $k < 0$

4. ✖ k is any real number

Question Number : 37 Question Id : 80089419882 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The general solution of the differential equation $x\frac{dy}{dx} + y = x^3y^6$ is

Options :

1. ✖ $(5x^3 - cx^5)y^5 = 2$

2. ✖ $(5x^5 - cx^3)y^5 = 2$

3. ✖ $(5x^5 + cx^3)y^5 = 2$

4. ✔ $(5x^3 + cx^5)y^5 = 2$

Question Number : 38 Question Id : 80089419883 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the particular integral of $\frac{d^2y}{dx^2} - 6\frac{dy}{dx} + 13y = 8e^{3x}\sin 2x$ is equal to f(x) times the particular integral of $\frac{d^2y}{dx^2} + 4y = \sin 2x$, then f(x) =

Options :

1. ✖ e^{2x}

2. ✔ $8e^{3x}$

3. ✖ $8\sin 2x$

4. ✖ $8e^{3x}\sin 2x$

Question Number : 39 Question Id : 80089419884 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The particular integral of $\frac{d^2y}{dx^2} + 4y = -4\cos 2x$ is

Options :

1. ✔ $-x\sin 2x$

2. ✖ $\frac{-x\sin 2x}{2}$

3. ✖ $\frac{-x\cos 2x}{2}$

4. ✖ $-x\cos 2x$

Question Number : 40 Question Id : 80089419885 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Laplace transform of the function $f(t) = |t-1| + |t+1|, t \geq 0$ is

Options :

1. ✖ $\frac{2}{s}(s + e^{-s})$

2. ✔ $\frac{2}{s^2}(s + e^{-s})$

3. ✖ $\frac{2}{s^2}(s - e^{-s})$

4. ✖ $\frac{2}{s}(s - e^{-s})$

Question Number : 41 Question Id : 80089419886 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $L\{F(t)\} = \frac{2s+5}{s^2+2s-3}$ then $L\{F(2t)\} =$

Options :

1. ✔ $\frac{2s+10}{s^2+4s-12}$

2. ✖ $\frac{2s+10}{s^2+4s+12}$

3. ✖ $\frac{2s+10}{s^2+6s-12}$

4. ✖ $\frac{s+5}{s^2+4s-12}$

Question Number : 42 Question Id : 80089419887 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(t)= \sin t + (\sin 2t - \sin t)u(t-\pi) + (\sin 3t - \sin 2t)u(t-2\pi)$ where u(t - a) is a unit step function , then f(t) when $\pi \le t \le 2\pi$ is

Options :

1. ✖ Sint

2. ✔ sin 2t

3. ✖ sin 3t

4. ✖ sint + sin2t

Question Number : 43 Question Id : 80089419888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Laplace transform of $f(t) = \begin{cases} 0, 0 < t \le 1 \\ (t-1), 1 < t < 2 \\ 1, \ t \ge 2 \end{cases}$

Options :

1. ✖

$\frac{e^{-s}+e^{-2s}}{s^2}$

2. ✖ $\frac{e^{-s}-e^{-2s}}{s}$

3. ✔ $\frac{e^{-s}-e^{-2s}}{s^2}$

4. ✖ $\frac{e^{-2s}-e^{-s}}{s^2}$

Question Number : 44 Question Id : 80089419889 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$L^{-1}\left\{\frac{3s+1}{(s+1)^4}\right\}=e^{-t}F(t)$ then $F(1)=$

Options :

1. ✖ $\frac{1}{6}$

2. ✖ $\frac{1}{3}$

3. ✔ $\frac{7}{6}$

4. ✖ $\frac{5}{6}$

Question Number : 45 Question Id : 80089419890 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $L(f(t)) = \left\{\frac{1}{(s+4)^{5/2}}\right\}$, than f(t) is

Options :

1. ✔ $\frac{4}{3\sqrt{\pi}} e^{-4t} t^{3/2}$

2. ✖ $\frac{4}{3\sqrt{\pi}} t^{3/2}$

3. ✖ $\frac{4}{3\sqrt{\pi}} e^{4t} t^{3/2}$

4. ✖ $\frac{4}{3\sqrt{\pi}} e^{-4t} t^{5/2}$

Question Number : 46 Question Id : 80089419891 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $y = y(t)$ satisfies the differential equation $y''' + 2y'' - y' - 2y = 0$ together with the conditions

$y(0) = y'(0) = 0, y''(0) = 3$, then the Laplace transform of $y(t)$ is equal to

Options :

1. ✖ $\frac{3}{(s^2-1)(s-2)}$

2. ✔ $\frac{3}{(s^2-1)(s+2)}$

3. ✖ $\frac{3}{(s^2+1)(s+2)}$

4. ✖ $\frac{3}{(s^2+1)(s-2)}$

Question Number : 47 Question Id : 80089419892 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Let $f(x)=e^{2x}$ in $(-\pi,\pi)$ and $f(x+2\pi)=f(x),\forall x$. If the Fourier series expansion of the function is

$$f(x)=\sum_{n=0}^{\infty}(a_n\cos nx+b_n\sin nx) \text{ then } a_0 =$$

Options :

1. ✖ $\frac{\sinh 2\pi}{8\pi}$

2. ✖ $\frac{\sinh 2\pi}{\pi}$

3. ✖ $\frac{\sinh 2\pi}{4\pi}$

4. ✔ $\frac{\sinh 2\pi}{2\pi}$

Question Number : 48 Question Id : 80089419893 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(x)=\begin{cases}0, \text{if } -\pi \le x \le 0 \\ \sin x, \text{if } 0 \le x \le \pi\end{cases}$, $f(x+2\pi)=f(x), \forall x$ and $f(x)=\sum_{n=0}^{\infty}(a_n \cos nx + b_n \sin nx)$, then

$b_1+b_2+b_3=$

Options :

1. ✖ 0

2. ✖ -1

3. ✔ $\frac{1}{2}$

4. ✖ $\frac{1}{4}$

Question Number : 49 Question Id : 80089419894 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If f(x) is periodic function defined on $-p \le x \le p$, then the coefficient of $\cos \frac{n\pi x}{p}$ in the Fourier series expansion of f(x) is

Options :

1. ✖ $\frac{1}{p}\int_{-p}^{p} f(x) \cos nx dx$

2. ✖ $\frac{1}{2p}\int_{-p}^{p} f(x) \cos \frac{nx}{p} dx$

3. ✖ $\frac{2}{p}\int_{0}^{p} f(x) \cos \frac{n\pi x}{p} dx$

4. ✔ $\frac{1}{p}\int_{-p}^{p} f(x)\cos\frac{n\pi x}{p}dx$

Question Number : 50 Question Id : 80089419895 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $f(x) = |\cos x|, x \in (-\pi, \pi)$ and $f(x) = \sum_{n=0}^{\infty}(a_n \cos nx + b_n \sin nx)$, then $a_0 + b_1 =$

Options :

1. ✖ $\frac{-4}{\pi^2}$

2. ✔ $\frac{2}{\pi}$

3. ✖ $\frac{4}{\pi}$

4. ✖ $\frac{-2}{\pi^2}$

Physics

Section Id :	800894389
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	Yes

Clear Response :

Sub-Section Number : 1

Sub-Section Id : 800894443

Question Shuffling Allowed : Yes

Question Number : 51 Question Id : 80089419896 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dimensional formulae of the following pair of physical quantities are same

Options :

1. ✖ Heat and Temperature

2. ✖ Work and Power

3. ✔ Work and Energy

4. ✖ Power and Energy

Question Number : 52 Question Id : 80089419897 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the phenomenon of photo electric effect, the number of photo electrons emitted is proportional to

Options :

1. ✔ The intensity of radiation

2. ✖ The frequency of radiation

3. ✖ The velocity of incident radiation

4. ✖ The work-function of cathode material

Question Number : 53 Question Id : 80089419898 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The superconducting state is perfectly _____ in nature

Options :

1. ✔ Diamagnetic

2. ✖ Paramagnetic

3. ✖ Ferromagnetic

4. ✖ Non-magnetic

Question Number : 54 Question Id : 80089419899 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An ideal gas at temperature T is compressed through an isochoric process until its pressure is doubled
What is the final temperature

Options :

1. ✔ 2T

2. ✖ T/2

3. ✖ T

4. ✖ 3T

Question Number : 55 Question Id : 80089419900 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Match the following lists

List-I	List-II
A. Isochoric process	i. Pressure remains constant
B. Isobaric process	ii. Temperature remains constant
C. Isothermal process	iii. Heat remains constant
D. Adiabatic process	iv. Volume remains constant

Options :

1. ✖ A-i, B-ii, C-iii, D-iv

2. ✖ A-iv, B-ii, C-iii, D-i

3. ✖ A-iv, B-iii, C-ii, D-i

4. ✔ A-iv, B-i, C-ii, D-iii

Question Number : 56 Question Id : 80089419901 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The difference between two specific heats, C_p and C_v for a gas represents

Options :

1. ✖ Increase in kinetic energy of gas molecules

2. ✖ Increase in potential energy of gas molecules

3. ✔ External work done

4. ✖ Internal work done

Question Number : 57 Question Id : 80089419902 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two vectors of equal magnitude R make an angle 60 degrees with each other. What is the magnitude of their resultant?

Options :

1. ✖ $R/\sqrt{2}$

2. ✖ $2\sqrt{2}\,R$

3. ✖ $\sqrt{2}\,R$

4. ✔ $\sqrt{3}\,R$

Question Number : 58 Question Id : 80089419903 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If **i** and **j** represent unit vectors in East and North directions, then the vector **i** – **j** is in the direction of

Options :

1. ✖ North-East

2. ✖ North-West

3. ✔ South-East

4. ✖ South-West

Question Number : 59 Question Id : 80089419904 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If θ is the angle between two vectors $\vec{a}$ and $\vec{b}$, then $|\vec{a}.\vec{b}| = |\vec{a} \times \vec{b}|$, when θ is equal to

Options :

1. ✖ 0

2. ✔ $\frac{\pi}{4}$

3. ✖ $\frac{\pi}{2}$

4. ✖ π

Question Number : 60 Question Id : 80089419905 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A stone of mass 10 gm is horizontally thrown from a cliff of height 500 m with an initial velocity 100 m/s. Time taken to reach the ground. [Take g = 10 m/s^2 , and neglect air resistance].

Options :

1. ✖ $\sqrt{80}$ s

2. ✖ 40 s

3. ✖ 20 s

4. ✔ 10 s

Question Number : 61 Question Id : 80089419906 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum height a football reaches if it is kicked with a velocity 40 m/s at an angle 30 degrees with the horizontal. (Take g = 10 m/s^2)

Options :

1. ✖ 60 m

2. ✖ 40 m

3. ✔ 20 m

4. ✖ 10 m

Question Number : 62 Question Id : 80089419907 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following produces least friction?

Options :

1. ✖ Sliding friction

2. ✖ Composite friction

3. ✔ Rollingfriction

4. ✖ Static friction

Question Number : 63 Question Id : 80089419908 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two cars of unequal masses, having similar tyres, are moving on horizontal surface with the same initial speed. The minimum stopping distance is

Options :

1. ✖ smaller for lighter car

2. ✖ smaller for heavier car

3. ✖ depends on the volume of the car

4. ✔ same for both the cars

Question Number : 64 Question Id : 80089419909 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the work done by an engine which lifts a mass of 100 kg through a height of 10 cm

[Take g = 10 m/s^2]

Options :

1. ✔ 100 J

2. ✖ 1000J

3. ✖ 10,000 J

4. ✖ 1 J

Question Number : 65 Question Id : 80089419910 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If a light body and a heavy body have equal momentum, then

Options :

1. ✔ The lighter body has greater energy than the heavier body

2. ✖ The lighter body has lesser kinetic energy than the heavier body

3. ✖ The kinetic energy of the lighter body is equal to the kinetic energy of the heavier body

4. ✖ The kinetic energy of both the bodies are independent of momentum

Question Number : 66 Question Id : 80089419911 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In simple harmonic motion, the restoring force must be proportional to

Options :

1. ✖ Amplitude

2. ✖ Frequency

3. ✖ Velocity

4. ✔ Displacement

Question Number : 67 Question Id : 80089419912 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The time period of the particle executing simple harmonic motion as per the equation

$x = (25\ m) \sin [(2\ \pi\ s^{-1})\ t + \pi / 2]$.

Options :

1. ✔ 1 s

2. ✖ 2 s

3. ✖ 3 s

4. ✖ 4 s

Question Number : 68 Question Id : 80089419913 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the length of a simple pendulum that has a period of 10 s ?

Options :

1. ✖ 24.84 cm

2. ✖ 2.484 cm

3. ✖ 2.484 m

4. ✔ 24.84 m

Question Number : 69 Question Id : 80089419914 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The intensity of sound is measured in the units of

Options :

1. ✖ Joule

2. ✖ Ampere

3. ✔ Decibel

4. ✖ Volt

Question Number : 70 Question Id : 80089419915 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

According to Sabine the reverberation time is

Options :

1. ✔ Proportional to the volume of the hall and inversely proportional to the total absorption

2. ✖ Proportional to the total absorption and inversely proportional to the volume of the hall

3. ✖ Proportional to both volume of the hall and total absorption

4. ✖ Independent of volume of the hall and total absorption

Question Number : 71 Question Id : 80089419916 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the deforming forces are removed, if a body remains in the deformed state and does not even partially regain its original shape it is called

Options :

1. ✖ Elastic body

2. ✖ Perfectly elastic body

3. ✔ Inelastic body

4. ✔ Plastic body

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 72 Question Id : 80089419917 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The viscosity of a gas_____

Options :

1. ✖ Decreases with increase in temperature

2. ✔ Increases with increase in temperature

3. ✖ Is independent of temperature

4. ✖ is independent of pressure for very high pressure intensities

Question Number : 73 Question Id : 80089419918 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Ohm's law is not applicable to _____

Options :

1. ✖ DC circuits

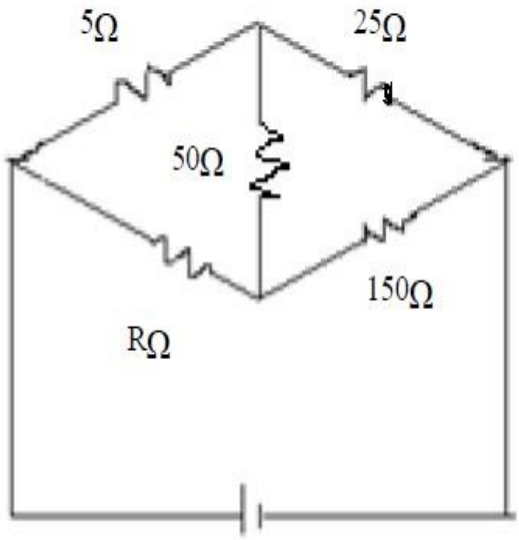
2. ✖ High currents

3. ✖ Small resistors

4. ✔ Semiconductors

Question Number : 74 Question Id : 80089419919 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Assume that the current through resistor 50Ω in the given circuit is zero, the value of R is



Options :

1. ✔ 30 Ω

2. ✖ 40 Ω

3. ✖ 50 Ω

4. ✖ 100 Ω

Question Number : 75 Question Id : 80089419920 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The force of attraction between the magnetic poles of strength m_1 and m_2 separated by a distance 'd' in free space is given by

Options :

1. ✖ $$F = \frac{\mu}{4\pi}\frac{m_1 m_2}{d^2}$$

2. ✔ $$F = \frac{\mu_0}{4\pi}\frac{m_1 m_2}{d^2}$$

3. ✖ $$F = \frac{\mu_0}{2\pi}\frac{m_1 m_2}{d^2}$$

4. ✖ $$F = \frac{\mu_0}{4\pi}\frac{d^2}{m_1 m_2}$$

Chemistry

Section Id :	800894390
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
Sub-Section Number :	1
Sub-Section Id :	800894444

Question Shuffling Allowed : Yes

Question Number : 76 Question Id : 80089419921 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

According to Paulis exclusion principle, two electrons in the same orbital contains

Options :

1. ✖ Vertical spins

2. ✖ Angular spins

3. ✖ Same spins

4. ✔ Opposite spins

Question Number : 77 Question Id : 80089419922 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In the formation of nitrogen molecule, the number of electron pairs shared between the two nitrogen atoms is

Options :

1. ✖ Two

2. ✔ Three

3. ✖ One

4. ✖ Four

Question Number : 78 Question Id : 80089419923 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In the redox reaction of hypo and Iodine, the oxidation number of sulphur atom changes from

Options :

1. ✔ +2 to +2.5

2. ✖ +2.5 to +2.0

3. ✖ +2.0 to +3.0

4. ✖ +1.0 to +2.0

Question Number : 79 Question Id : 80089419924 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

When the Phenol and water mixed together, the formed solution is called

Options :

1. ✖ Homogeneous

2. ✔ Heterogeneous

3. ✖ Colloidal

4. ✖ Azeotropic

Question Number : 80 Question Id : 80089419925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

How many grams of anhydrous oxalic acid is required to prepare one liter of 0.1 N oxalic acid solution?

Options :

1. ✖ 45 grams

2. ✖ 9.0 grams

3. ✔ 4.5 grams

4. ✖ 0.9 grams

Question Number : 81 Question Id : 80089419926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the sulphate ion concentration in a solution of $Al_2(SO_4)_3$ is 0.25 M, the concentration of $Al_2(SO_4)_3$ in the solution is

Options :

1. ✖ 0.250 M

2. ✖ 0.0625 M

3. ✔ 0.0833 M

4. ✖ 0.125M

Question Number : 82 Question Id : 80089419927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following pair of species represent as conjugate Acid base?

Options :

1. ✖ HCl, H_2O

2. ✖ H_3PO_4, H_3O^+

3. ✔ HSO_3^-, SO_3^{2-}

4. ✖ H_2CO_3, CO_2

Question Number : 83 Question Id : 80089419928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

From the following, choose the correct $[H^+]$ of a NaOH solution in M, if its pOH is 11.3

Options :

1. ✔ 2×10^{-3}

2. ✖ 2.7×10^{-3}

3. ✖ 2.7×10^{-12}

4. ✖ 6.2×10^{-8}

Question Number : 84 Question Id : 80089419929 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Hydrochloric acid is a strong acid. This means that _____.

Options :

1. ✔ HCl dissociates completely in to $H^+(aq)$ and $Cl^-(aq)$ when it dissolves in water

2. ✖ HCl does not dissociate at all when it is dissolved in water

3. ✖ HCl produces a gaseous product when it is neutralized

4. ✖ HCl cannot be neutralized by a weak base

Question Number : 85 Question Id : 80089419930 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The impurities associated with mineral used in metallurgy are called

Options :

1. ✖ Flux

2. ✔ Gangue

3. ✖ Slag

4. ✖ Ore

Question Number : 86 Question Id : 80089419931 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

German silver is an alloy of

Options :

1. ✖ Ag, Cu, Zn

2. ✖ Ag, Cu, Au

3. ✔ Cu, Zn, Ni

4. ✖ Cu, Zn, Fe

Question Number : 87 Question Id : 80089419932 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The degree of dissociation of weak electrolytes is

Options :

1. ✖ 100 %

2. ✖ ≥ 30 %

3. ✖ ≤ 10 %

4. ✔ < 3 %

Question Number : 88 Question Id : 80089419933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

With reference to Faraday's second law, the weights of different substances deposited by the passage of the same quantity of electricity, are proportional to their _____

Options :

1. ✔ Chemical equivalent weights

2. ✖ Current supply

3. ✖ Chemical equivalent density

4. ✖ Molecular Weights

Question Number : 89 Question Id : 80089419934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A zinc rod is placed in 0.1M solution of zinc sulphate at 25°C. Assuming that the salt is dissociated to the extent of 95% at this dilution. The potential of the electrode at this temperature is ($E^{\circ}_{Zn^{2+}/Zn}$ = - 0.76 V and log 0.095 = -1.0223).

Options :

1. ✖ -0.76 V

2. ✖ $+0.76$ V

3. ✔ -0.79 V

4. ✖ $+0.79$ V

Question Number : 90 Question Id : 80089419935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following does not corrode when exposed to air?

Options :

1. ✖ Cu

2. ✔ Al

3. ✔ Ag

4. ✖ Fe

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 91 Question Id : 80089419936 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which metals from the following can provide cathodic protection to Iron?

Options :

1. ✖ Zn and Cu

2. ✖ Al and Cu

3. ✖ Al and Ni

4. ✔ Al and Zn

Question Number : 92 Question Id : 80089419937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The hardness of water is caused by

Options :

1. ✖ Undissolved salts of Ca^{+2} and Mg^{+2}

2. ✖ Undissolved salts of Cu^{+2} and Mg^{+2}

3. ✔ Dissolved salts of Ca^{+2} and Mg^{+2}

4. ✖ Undissolved $CaCO_3$

Question Number : 93 Question Id : 80089419938 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A water sample contains 204 mg of $CaSO_4$ per Litre. Its hardness in terms of $CaCO_3$ equivalent is

Options :

1. ✔ 150 ppm

2. ✖ 136 ppm

3. ✖ 204 ppm

4. ✖ 100 ppm

Question Number : 94 Question Id : 80089419939 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Hard water can block radiators due to the formation of?

Options :

1. ✔ insoluble calcium and magnesium salts

2. ✖ insoluble sodium salts

3. ✖ insoluble phosphate salts

4. ✖ insoluble potassium salts

Question Number : 95 Question Id : 80089419940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Choose the incorrect statement from the following options.

Options :

1. ✖ The molecular weight of the polymer steadily rises throughout the reaction, in condensation polymerisation

2. ✖ In addition polymerisation, growth of chain is at one active centre.

3. ✖ No by product will be formed in the addition polymerisation

The molecular weight of the polymer steadily increases throughout the reaction,

4. ✔ in addition polymerisation

Question Number : 96 Question Id : 80089419941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is a thermoplastic?

Options :

1. ✔ Teflon

2. ✖ Natural rubber

3. ✖ Neoprene

4. ✖ Buna-S

Question Number : 97 Question Id : 80089419942 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following a characteristic feature is of a good fuel?

Options :

1. ✖ High moisture content

2. ✖ Should undergo spontaneous combustion

3. ✖ Low calorific value

4. ✔ High calorific value

Question Number : 98 Question Id : 80089419943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Producer gas is primarily a mixture of

Options :

1. ✔ $CO + N_2$

2. ✖ $CO + H_2$

3. ✖ $CO + CH_4$

4. ✖ $N_2 + H_2$

Question Number : 99 Question Id : 80089419944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The measurement of dissolved oxygen used by microorganisms during the biochemical oxidation of organic matter in 5 days at 20°C is said to be

Options :

1. ✔ Biological Oxygen Demand

2. ✖ Chemical Oxygen Demand

3. ✖ Biological Dissolved Oxygen

4. ✖ Threshold Oxygen Demand

Question Number : 100 Question Id : 80089419945 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a green house gas?

Options :

1. ✖ H_2

2. ✖ N_2

3. ✖ CO

4. ✔ CO_2

Electronics and Instrumentation Engineering

Section Id :	800894391
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
Sub-Section Number :	1

Sub-Section Id : 800894445

Question Shuffling Allowed : Yes

Question Number : 101 Question Id : 80089419946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two coils of self inductance 8 H and 10 H are connected in parallel such a way that their mutual inductance of 4 H assists the self inductances. The effective inductance of the combination is

Options :

1. ✖ 2.4 H

2. ✔ 6.4 H

3. ✖ 10 H

4. ✖ 26 H

Question Number : 102 Question Id : 80089419947 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A two winding transformer has iron losses and full load copper losses equal to W watts each. It is tested along with another similar transformer for back to back test. The total power input would be

Options :

1. ✔ 4 W

2. ✖ 2 W

3. ✖ 1 W

4. ✖ 0.5 W

Question Number : 103 Question Id : 80089419948 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

How many kilocalories of heat will approximately be developed in a 420 W electric bulb in 10 minutes?

Options :

1. ✖ 25.2

2. ✖ 10.5

3. ✖ 30

4. ✔ 60

Question Number : 104 Question Id : 80089419949 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a linear network, the ratio of voltage excitation to current response is unaltered when the position of excitation and response are interchanged. This assertion stems from the

Options :

1. ✖ Principle of duality

2. ✔

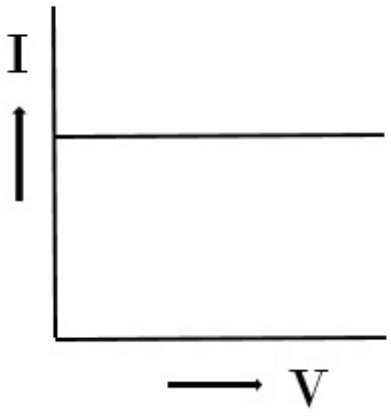
Reciprocity theorem

3. ✖ Principle of Superposition

4. ✖ Equivalence theorem

Question Number : 105 Question Id : 80089419950 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The following V – I characteristic represents



Options :

1. ✔ Ideal Current Source

2. ✖ Ideal Voltage Source

3. ✖ Practical Current Source

4. ✖ Practical Voltage Source

Question Number : 106 Question Id : 80089419951 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is not a part of transformer?

Options :

1. ✖ Core

2. ✖ Coils

3. ✔ Rotor

4. ✖ Transformer oil

Question Number : 107 Question Id : 80089419952 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The unit of absolute permittivity is

Options :

1. ✖ Volt/ metre

2. ✖ Coulomb/ Farad

3. ✔ Farad/ metre

4. ✖ Coulomb/metere^2

Question Number : 108 Question Id : 80089419953 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The direction of rotation of a d.c motor can be reversed

Options :

1. ✖ By reversing the connections of both armature and the filed windings with the supply

2. ✔ By reversing the connections of either the armature or the field.

3. ✖ By reducing the field flux

4. ✖ By introducing an extra resistance in the armature circuit

Question Number : 109 Question Id : 80089419954 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following are same for primary and secondary of a 1- phase transformer?

Options :

1. ✖ Resistances and leakage reactances only

2. ✖ Currents and induced voltages only

3. ✔ Voltage per turn and Ampere-turns only

4. ✖ Copper loss only

Question Number : 110 Question Id : 80089419955 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The slip of 400 V, three phase, 50 Hz, 4-pole induction motor when rotating at 1440 r.p.m is

Options :

1. ✖ 2%

2. ✖ 3%

3. ✔ 4%

4. ✖ 5%

Question Number : 111 Question Id : 80089419956 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Torque developed by a three-phase, 400 V, Induction motor is 100 N-m. If the applied voltage is reduced to

200-V, the developed torque will be

Options :

1. ✖ 50 N-m

2. ✔ 25 N-m

3. ✖ 200 N-m

4. ✖ 62.5 N-m

Question Number : 112 Question Id : 80089419957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A voltage source is delivering a maximum power of 25 W to the load. The power generated by the source is

Options :

1. ✖ 25 W

2. ✖ 75 W

3. ✖ 100 W

4. ✔ 50 W

Question Number : 113 Question Id : 80089419958 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the rotor circuit resistance of a poly phase induction motor is increased

Options :

1. ✔ The starting torque increases

2. ✖ The maximum value of torque increases

3. ✖ The slip at which maximum torque occurs remains unchanged

4. ✖ Maximum torque is developed at starting

Question Number : 114 Question Id : 80089419959 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The rotor reactance of a 3-phase Induction motor under running conditions, is proportional to

Options :

1. ✔ Slip

2. ✖ 1/ slip

3. ✖ Supply voltage

4. ✖ Induced e.m.f

Question Number : 115 Question Id : 80089419960 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Primary cells are

Options :

1. ✖ Rechargeable

2. ✔ Can't Recharge

3. ✖ Diacharges fast

4. ✖ Wet cells

Question Number : 116 Question Id : 80089419961 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Current flowing in an inductor 'L' is given by the formula

Options :

1. ✔ $i = \frac{1}{L}\int_{-\infty}^{t} Vdt$

2. ✖ $i = L\frac{dv}{dt}$

3. ✖ $\mathrm{i} = L\int_{-\infty}^{t} Vdt$

4. ✖ $\mathrm{i} = \frac{1}{L}\frac{dv}{dt}$

Question Number : 117 Question Id : 80089419962 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Light emitting diode (LED) operates in

Options :

1. ✔ Forward bias

2. ✖ Reverse bias

3. ✖ Both forward & reverse

4. ✖ Un bias

Question Number : 118 Question Id : 80089419963 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Given two coupled inductors L_1 and L_2,their mutual inductance M satisfies

Options :

1. ✖ $M = \sqrt{L_1^2 + L_2^2}$

2. ✖ $M > \frac{L_1+L_2}{2}$

3. ✖ $M > \sqrt{L_1 L_2}$

4. ✔ $M \leq \sqrt{L_1 L_2}$

Question Number : 119 Question Id : 80089419964 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following diode used in voltage regulator?

Options :

1. ✖ LED

2. ✖ Photo diode

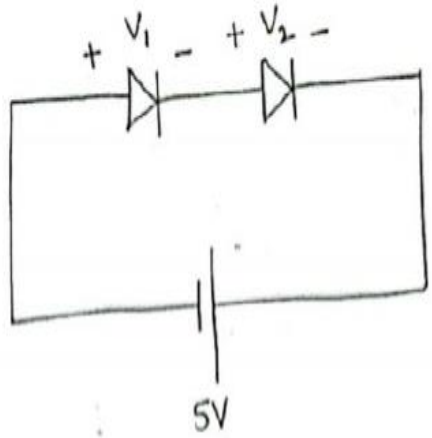
3. ✔ Zener diode

4. ✖ Forward biased Zener diode

Question Number : 120 Question Id : 80089419965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For the circuit shown below, calculate the voltage across each diode V_1 and V_2. If the diodes are identical and

made up of silicon and also breakdown voltage of each diode is greater than 5V



Options :

1. ✖ 2.5V

2. ✖ 5V

3. ✔ -2.5V

4. ✖ 0V

Question Number : 121 Question Id : 80089419966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In-an n-type silicon, which of the following statement is true

Options :

1. ✖ $n_e >> n_h$ and trivalent atoms are dopants

2. ✔ $n_e >> n_h$ and pentavalent atoms are dopants

3. ✖ $n_e << n_h$ and pentavalent atoms are dopants

4. ✖ $n_e << n_h$ and trivalent atoms are dopants

Question Number : 122 Question Id : 80089419967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following statements, A tunnel diode is :

a) made of Ge and GaAs

b) an abrupt junction with both sides heavily doped

c) an abrupt junction with one side heavily doped

d) a majority carrier device

Which of the following statements are correct

Options :

1. ✔ a and b

2. ✖ c and d

3. ✖ a, c and d

4. ✖ a, b and d

Question Number : 123 Question Id : 80089419968 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Voltage gain for a transistor amplifier is _____

Options :

1. ✖ Constant for all frequencies

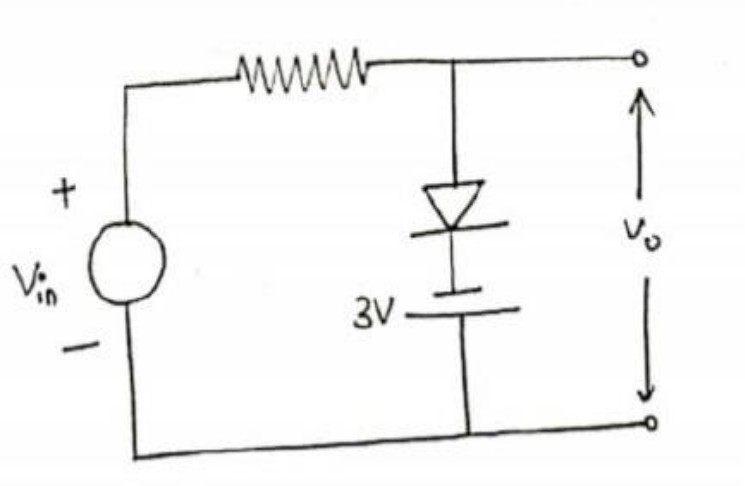
2. ✔ Constant for mid frequencies

3. ✖ High at high frequencies

4. ✖ High at low frequencies

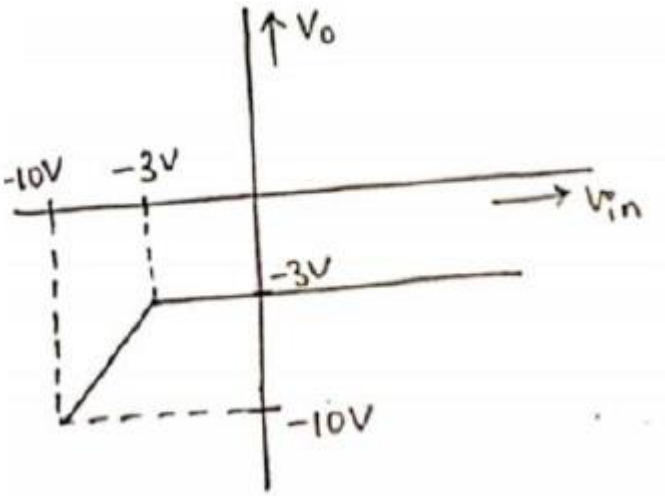
Question Number : 124 Question Id : 80089419969 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The transfer characteristic in the circuit shown below if V_{in} ranges from -10V to 10V is:

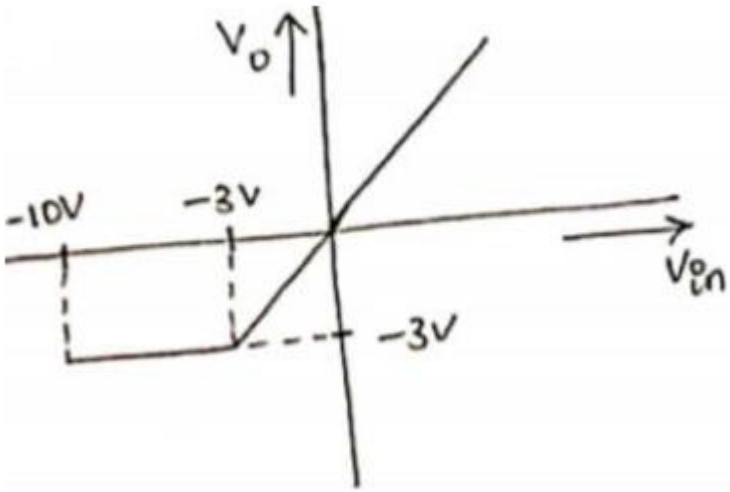


Options :

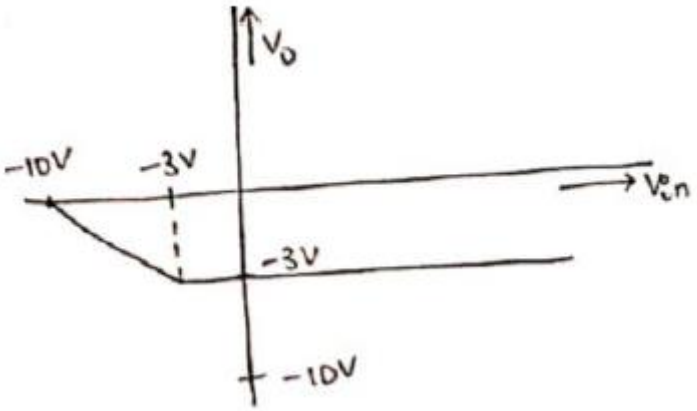
1. ✔

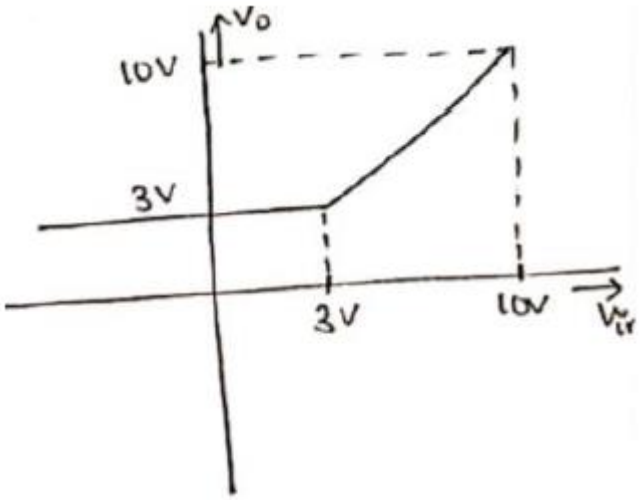


2. ✖



3. ✖





4. ✖

Question Number : 125 Question Id : 80089419970 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For a CE-transistor amplifier, the signal voltage across the R_c of 2 kΩ is 2V. Current amplification factor of transistor is 100. If base resistance is 1 kΩ, find the input signal voltage?

Options :

1. ✔ 0.01 v

2. ✖ 0.001 v

3. ✖ 0.1 v

4. ✖ 1.0 v

Question Number : 126 Question Id : 80089419971 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Darlington circuit is consists of two transistors

Options :

1. ✖ in common base configuration connected in series

2. ✔ in common collector configuration connected in series

3. ✖ in common emitter configuration connected in parallel

4. ✖ in common base configuration connected in parallel

Question Number : 127 Question Id : 80089419972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Medium input and output impedance amplifier is

Options :

1. ✔ Common-Emitter (CE) type

2. ✖ C-B type

3. ✖ C-C type

4. ✖

Cascaded

Question Number : 128 Question Id : 80089419973 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Class B, push pull amplifier has conversion efficiency of _____ theoretically

Options :

1. ✔ 78.5%

2. ✖ 50%

3. ✖ 25%

4. ✖ 100%

Question Number : 129 Question Id : 80089419974 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Potentiometers (PoT) is a

Options :

1. ✖ Fixed Resister

2. ✔ Variable resister

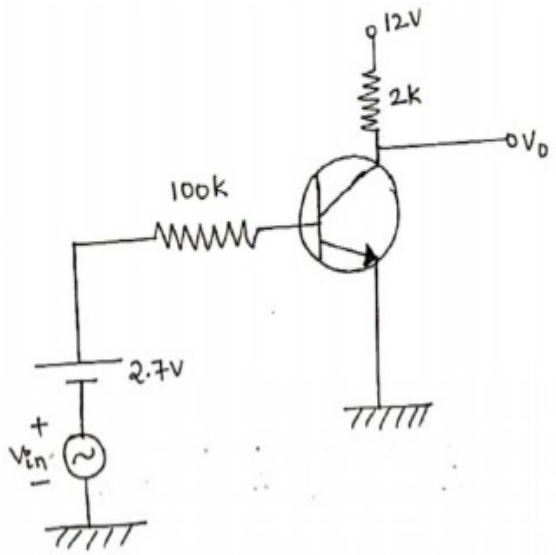
3. ✖ Temperature dependent Resistor

4. ✖

Insulator

Question Number : 130 Question Id : 80089419975 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The voltage gain $\frac{V_o}{V_{in}}$ for the following circuit is_____. Assume V_{BE}=0.7V, β=100



Options :

1. ✖ -1.5

2. ✔ -1.97

3. ✖ -2.5

4. ✖ 1.5

Question Number : 131 Question Id : 80089419976 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An ideal operational amplifier (op-amp) should have bandwidth of

Options :

1. ✖ Zero

2. ✖ Maximum

3. ✔ Infinite

4. ✖ Minimum

Question Number : 132 Question Id : 80089419977 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For a transistor to be in _____ region for acting as amplifier

Options :

1. ✖ Saturation region

2. ✔ Active region

3. ✖ Cut off region

4. ✖ Reverse cut off region

Question Number : 133 Question Id : 80089419978 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Cascode amplifier consist of

Options :

1. ✔ CE stage followed by CB stage

2. ✖ CB stage followed by CE stage

3. ✖ CE stage followed by CC stage

4. ✖ CB stage followed by CC stage

Question Number : 134 Question Id : 80089419979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

With usual notations, the condition for sustained oscillations in Colpitts Oscillator is

Options :

1. ✔ $|A_v| \geq \frac{C_1}{C_2}$

2. ✖ $|A_v| \leq \frac{C_1}{C_2}$

3. ✖ $|A_v| \geq \frac{R_1 C_1}{R_2 C_2}$

4. ✖ $|A_v| \leq \frac{R_1 C_1}{R_2 C_2}$

Question Number : 135 Question Id : 80089419980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which is the basic element of all the a.c signal sources, generates sinusoidal signal of a known frequency?

Options :

1. ✖ Amplifier

2. ✔ Oscillator

3. ✖ Transformer

4. ✖ Filter

Question Number : 136 Question Id : 80089419981 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number 43 in 2's complement representation is

Options :

1. ✖ 01010101

2. ✖ 11010101

3. ✔ 00101011

4. ✖ 10101011

Question Number : 137 Question Id : 80089419982 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Electronic Calculator is a

Options :

1. ✔ Digital system

2. ✖ Analog system

3. ✖ Control system

4. ✖ Multiplexer

Question Number : 138 Question Id : 80089419983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Universal gates are

Options :

1. ✖ AND, NAND

2. ✖ OR, NOR

3. ✔ NAND, NOR

4. ✖ AND, OR

Question Number : 139 Question Id : 80089419984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

RAM is a memory type of

Options :

1. ✔ Volatile

2. ✖ Non Volatile

3. ✖ Read only type

4. ✖ Write only type

Question Number : 140 Question Id : 80089419985 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In half Adder circuit, sum & carry bits are implemented with gates respectively

Options :

1. ✔ EX-OR, AND

2. ✖ EX-OR, OR

3. ✖ AND, EX-OR

4. ✖ EX-OR, EX-NOR

Question Number : 141 Question Id : 80089419986 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Decade counters is also known as

Options :

1. ✖ Mod – 8

2. ✔ Mod – 10

3. ✖ Mod – 16

4. ✖ Mod - N

Question Number : 142 Question Id : 80089419987 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

4 x1 Multiplexer has

Options :

1. ✔ 4 data inputs, 2 selection lines, 1 output

2. ✖ 2 data inputs, 4 selection lines, 1 output

3. ✖ 1 data inputs, 2 selection lines, 4 output

4. ✖ 4 data inputs, 1 selection lines, 2 output

Question Number : 143 Question Id : 80089419988 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The output of a gate is LOW when at least one of its inputs is HIGH. This is true for

Options :

1. ✖ AND

2. ✖ NAND

3. ✖ OR

4. ✔ NOR

Question Number : 144 Question Id : 80089419989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If a counter having 10 Flipflops is initially at 0. What count will it hold after 2060 pulses?

Options :

1. ✔ 000 000 1100

2. ✖ 000 001 1100

3. ✖ 000 001 1000

4. ✖ 000 000 1110

Question Number : 145 Question Id : 80089419990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A pulse train with a frequency of 1MHz is counted using modulo-1024 ripple counter built with J-K flipflops. For proper operation of counter, the maximum permissible propagation delay per flipflop stage is ----------

Options :

1. ✖ 10 nSec

2. ✖ 1000 nSec

3. ✔ 100 nSec

4. ✖ 1 nSec

Question Number : 146 Question Id : 80089419991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A circuit in which data gets shifted towards left or right when clock pulses are applied is called

Options :

1. ✖ Flip flop

2. ✔ Shift Register

3. ✖ Counter

4. ✖ Latch

Question Number : 147 Question Id : 80089419992 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dual of a Boolean function is obtained by

Options :

1. ✖ Interchanging all 0s and 1s only

2. ✖ Changing all 0s to 1s only

3. ✖ Changing all 1s to 0s only

4. ✔ Interchanging (i) all 0s and 1s and (ii) '+' and '-' signs

Question Number : 148 Question Id : 80089419993 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Value of MSB and full scale output for an 8-bit DAC for V_R=10V is

Options :

1. ✖ 5V,10V

2. ✔ 5V, 9.961V

3. ✖ 9.961V, 5V

4. ✖ 10V, 5V

Question Number : 149 Question Id : 80089419994 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Karnaugh map is used to

Options :

1. ✖ Minimise the number of flip-flops in a digital circuit

2. ✖ Maximize the number of gates

3. ✖ Maximize the fan-in requirements

4. ✔ Minimize the number of gates and fan-in requirements of the gates in a digital circuit

Question Number : 150 Question Id : 80089419995 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Maximum Conversion time in successive approximation ADC is

Options :

1. ✔ N Clock Cycles

2. ✖ 2^N Clock Cycles

3. ✖ 2^{N+1}-1 Clock Cycles

4. ✖ 2^{N-1}-1 Clock Cycles

Question Number : 151 Question Id : 80089419996 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A transducers is a device which

Options :

1. ✖ Transfers a signal from one circuit to the other

2. ✔ Converts a physical quantity to be measured into an equivalent electrical signal

3. ✖ Amplifies a signal for the purpose of measurement

4. ✖ Converts an ac signal into a dc signal.

Question Number : 152 Question Id : 80089419997 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An analog transducer with a 0-10V input is able to distinguish a change of 10mV in its input signal if its resolution

is

Options :

1. ✖ 1 part in 100

2. ✔ 1 part in 1000

3. ✖ 1 part in 10

4. ✖ 1 part in 10000

Question Number : 153 Question Id : 80089419998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is an active transducer?

Options :

1. ✖ Thermistor

2. ✖ LVDT

3. ✖ Photo transistor

4. ✔ Thermocouple

Question Number : 154 Question Id : 80089419999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The emf developed by a thermocouple depends on

Options :

1. ✖ The length of wires and temperature difference between the hot and cold junctions

2. ✖ Materials used, diameter of wires used and temperature difference between the hot and cold junctions

3. ✔ Materials used, temperature of hot junction and temperature of cold junction

4. ✖ Materials used, shape and size of materials, resistance of the wires and temperature difference between the hot and cold junctions

Question Number : 155 Question Id : 80089420000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A thermistor is a

Options :

1. ✖ Temperature-dependent resistor with +ve temperature coefficient of resistance

2. ✔ Temperature-dependent resistor with -ve temperature coefficient of resistance

3. ✖ Temperature-independent resistor with +ve temperature coefficient of resistance

4. ✖ Temperature-independent resistor with -ve temperature coefficient of resistance

Question Number : 156 Question Id : 80089420001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A piezoelectric type accelerometer has a sensitivity of 100mV/g. The transducer is subjected to a constant acceleration of 5g. The steady state output of the transducer will be

Options :

1. ✔ 0V

2. ✖ 100mV

3. ✖ 0.5V

4. ✖ 5.0V

Question Number : 157 Question Id : 80089420002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is Inductive type transducer?

Options :

1. ✔ LVDT-type transducer

2. ✖ Thermistor transducers

3. ✖ Thermocouple-type transducer

4. ✖ Strain gauge

Question Number : 158 Question Id : 80089420003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The differential pressure transmitter of a flow meter using a venturi tube reads 2.5×10^5 Pa for a flow rate of $0.5 m^3/s$.

The approximate flow rate in m^3/s for a differential pressure of 0.9×10^5Pa is

Options :

1. ✔ 0.30

2. ✖ 0.18

3. ✖ 0.83

4. ✖ 0.60

Question Number : 159 Question Id : 80089420004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is variable area flow meter?

Options :

1. ✖ Orifice

2. ✖ Venturi

3. ✖ Ultrasonic

4. ✔ Rotameter

Question Number : 160 Question Id : 80089420005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Scale factor of transducer is

Options :

1. ✔ Directly proportional to sensitivity

2. ✖ Inversely proportional to sensitivity

3. ✖ Directly proportional to square of sensitivity

4. ✖ Inversely proportional to square of sensitivity

Question Number : 161 Question Id : 80089420006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Strain gauge is not used for measurement of

Options :

1. ✖ Force

2. ✖ Torque

3. ✖ Pressure

4. ✔ Temperature

Question Number : 162 Question Id : 80089420007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Pneumatic transducer is used to measure

Options :

1. ✔ Pressure

2. ✖ Alkalinity

3. ✖ Flow of liquid

4. ✖ Viscosity

Question Number : 163 Question Id : 80089420008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following are the Hydel power plant units?

I. Reservoir & Dam

II. Boiler

III. Turbine

IV. Generator

Options :

1. ✖ I,II,III,IV

2. ✔ I,III,IV

3. ✖ II,III,IV

4. ✖ I,IV

Question Number : 164 Question Id : 80089420009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following nuclear reactor doesn't require a heat exchanger to supply steam to power turbine?

Options :

1. ✖ Molten sodium cooled

2. ✖ Helium cooled

3. ✔ Boiling water

4. ✖ Pressurized water

Question Number : 165 Question Id : 80089420010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Wet-end and dry-end operators are used in manufacturing of

Options :

1. ✖ Iron & Steel

2. ✔ Paper

3. ✖ Power

4. ✖ Cement

Question Number : 166 Question Id : 80089420011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is open loop control system?

Options :

1. ✔ Traffic light control

2. ✖ A thermostatic control

3. ✖ The respiratory system of human being

4. ✖ A system for controlling the movement of the slide of a copying milling machine

Question Number : 167 Question Id : 80089420012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which one of the following is Cheapest and simple control system?

Options :

1. ✔ Open loop

2. ✖ Close loop

3. ✖ Non linear

4. ✖ Cacade

Question Number : 168 Question Id : 80089420013 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The industrial controller having the best steady-state accuracy is

Options :

1. ✔ An Integral controller

2. ✖

A derivative controller

3. ✖ A rate feedback controller

4. ✖ A proportional controller

Question Number : 169 Question Id : 80089420014 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The variable which is modified to reach processes output at set value is known as

Options :

1. ✖ Controlled variable

2. ✔ Manipulated variable

3. ✖ Load variable

4. ✖ Normal variable

Question Number : 170 Question Id : 80089420015 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is a three mode controller?

Options :

1. ✖ Proportional controller

2. ✖ ON-OFF controller

3. ✖ Integral controller

4. ✔ PID controller

Question Number : 171 Question Id : 80089420016 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Cascade controller consist of

Options :

1. ✖ Primary controller only

2. ✖ Secondary controller only

3. ✔ Both primary and secondary controller

4. ✖ Ratio controller

Question Number : 172 Question Id : 80089420017 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following control action has long period of oscillation?

Options :

1. ✔ PI type

2. ✖ P type

3. ✖ PD type

4. ✖ PID type

Question Number : 173 Question Id : 80089420018 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The motor gives discrete steps of rotation is known as

Options :

1. ✖ Servomotor

2. ✖ A.C motor

3. ✔ Stepper motor

4. ✖ D.C motor

Question Number : 174 Question Id : 80089420019 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following component configurations completely forms a Current to Pressure converter?

Options :

1. ✖ Flapper & Nozzle

2. ✖ Flapper, Nozzle & Spring

3. ✔ Flapper, Nozzle, Spring & Pivot

4. ✖ Flapper, Nozzle & Pivot

Question Number : 175 Question Id : 80089420020 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The standard current signal range in process industries

Options :

1. ✖ 0- 20 mA

2. ✖ 3-15 mA

3. ✔ 4-20 mA

4. ✖ 0-15mA

Question Number : 176 Question Id : 80089420021 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following statement is Correct?

Options :

1. ✔ Feed forward control system is used to minimize the deviation of the controlled variable

2. ✖ Feed forward control system is used to maximize the deviation of the controlled variable

3. ✖ Feed forward control system acts after the output is disturbed

4. ✖ In cascade control configuration, there is one manipulated variable and only one measurement

Question Number : 177 Question Id : 80089420022 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Solenoid valve operated with the signal of

Options :

1. ✔ Electrical

2. ✖ Mechanical

3. ✖ Thermal

4. ✖ Pneumatic

Question Number : 178 Question Id : 80089420023 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A P/I converter displays current value as 18mA. The corresponding pressure is

Options :

1. ✖ 14.5 psi

2. ✔ 13.5 psi

3. ✖ 16 psi

4. ✖ 18 psi

Question Number : 179 Question Id : 80089420024 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following statements is not true for an integrated circuit?

Options :

1. ✖ Integrated circuits are basically microelectronic circuit

2. ✖ Integrated circuits connect all components

3. ✖ Integrated circuits are very small in size

4. ✔ Integrated circuits consists only of active circuit components

Question Number : 180 Question Id : 80089420025 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In medium scale Integration number of components are

Options :

1. ✖ <10

2. ✖ <100

3. ✔ >100

4. ✖ >1000

Question Number : 181 Question Id : 80089420026 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Logic gate is an example of

Options :

1. ✔ Small-scale integrated circuits (SSI)

2. ✖ Medium-scale integrated circuits (MSI)

3. ✖ Large-scale integrated circuits (LSI)

4. ✖ Very-large scale integrated circuits (VLSI)

Question Number : 182 Question Id : 80089420027 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Unit for slew rate of Op-Amp is

Options :

1. ✖ μs/V

2. ✔ V/μs

3. ✖ I/μs

4. ✖ μs/I

Question Number : 183 Question Id : 80089420028 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An RS flip-flop is an integral part of

Options :

1. ✔ IC 555

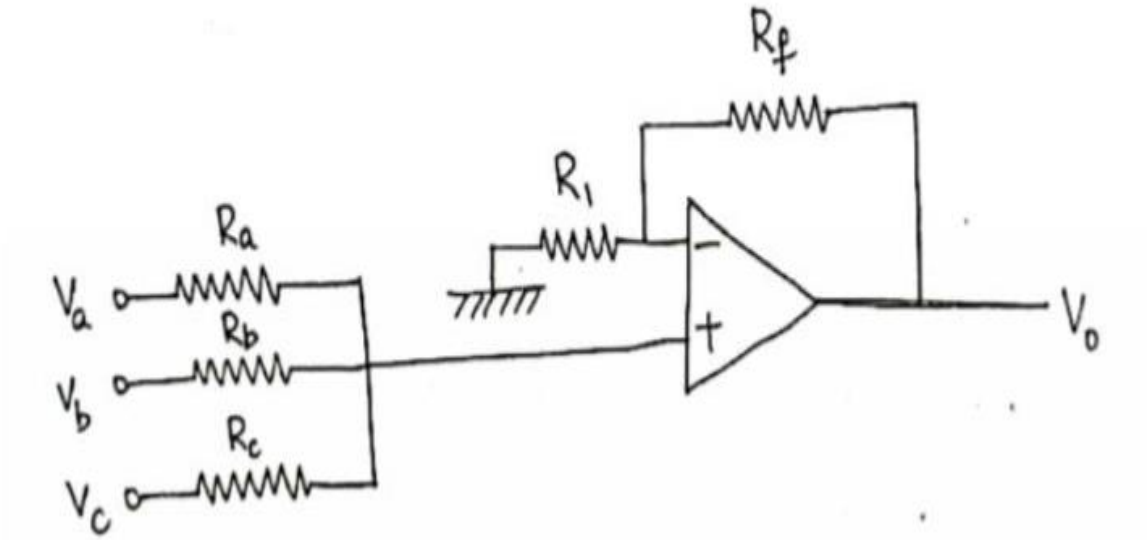
2. ✖ IC 741

3. ✖ MC 1741

4. ✖ IC 78XX

Question Number : 184 Question Id : 80089420029 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The relation between input voltage and output voltage of the following circuit if $R_a=R_b=R_c$ is



Options :

1. ✖ $\frac{R_f}{R_1}(\frac{V_a+V_b+V_c}{3})$

2. ✔ $(1+\frac{R_f}{R_1})(\frac{V_a+V_b+V_c}{3})$

3. ✖ $-(\frac{R_f}{R_1})(\frac{V_a+V_b+V_c}{3})$

4. ✖ $(1-\frac{R_f}{R_1})(\frac{V_a+V_b+V_c}{3})$

Question Number : 185 Question Id : 80089420030 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An operational amplifier (op-amp) is basically a _____ amplifier

Options :

1. ✔ Negative feedback

2. ✖ Low input impedance

3. ✖ Low-gain

4. ✖ Low band width

Question Number : 186 Question Id : 80089420031 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

With usual notations, the duty cycle of Astable Multivibrator is given by

Options :

1. ✔ $\frac{R_A+R_B}{R_A+2R_B}$

2. ✖ $\frac{R_A+2R_B}{R_A+R_B}$

3. ✖ $\frac{R_A}{R_A+R_B}$

4. ✖ $\frac{R_A}{R_A+2R_B}$

Question Number : 187 Question Id : 80089420032 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A monostable multivibrator is also called a

Options :

1. ✖ Flip-flop

2. ✖ Clock

3. ✔ One shot multivibrator

4. ✖ Free running multivibrator

Question Number : 188 Question Id : 80089420033 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Number of pins available in 78xx regulator are ?

Options :

1. ✔ 3

2. ✖ 4

3. ✖ 2

4. ✖ 5

Question Number : 189 Question Id : 80089420034 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

8051 is a

Options :

1. ✖ 16 bit microcontroller

2. ✔ 8 bit microcontroller

3. ✖ 32 bit microcontroller

4. ✖ 4 bit microcontroller

Question Number : 190 Question Id : 80089420035 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

8051 microcontroller has memory ROM, RAM size

Options :

1. ✔ 4 KB of ROM , 128 bytes of RAM

2. ✖ 128 bytes of ROM , 4 KB of RAM

3. ✖ 4 KB of ROM , 1KB bytes of RAM

4. ✖ 2 KB of ROM , 128 bytes of RAM

Question Number : 191 Question Id : 80089420036 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following Mnemonic corresponds to register addressing mode in 8051 Microcontroller?

Options :

1. ✖ MOV @ R_0, 80h

2. ✖ MOV @ R_1, A

3. ✔ MOV R_5, A

4. ✖ MOV add, A

Question Number : 192 Question Id : 80089420037 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Integration of processor with necessary peripherals on a single chip is known as

Options :

1. ✖ Microprocessor

2. ✔ Micro controller

3. ✖ PLC

4. ✖ SCADA

Question Number : 193 Question Id : 80089420038 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many addresses are in 8255 interfacing peripheral?

Options :

1. ✖ 2

2. ✔ 3

3. ✖ 4

4. ✖ 5

Question Number : 194 Question Id : 80089420039 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

8051 Microcontroller is used in which of the following application?

Options :

1. ✔ Automatic water level maintenance

2. ✖ Calculators

3. ✖ Accounting systems

4. ✖ Laser Printer

Question Number : 195 Question Id : 80089420040 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Programming method most widely used in PLC's are

Options :

1. ✖ Instruction set

2. ✔ Ladder diagram

3. ✖ FBD

4. ✖ Assembly langue

Question Number : 196 Question Id : 80089420041 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following statement is Correct with respect to PLC?

Options :

1. ✖ The latch instruction is often called as RES (reset)

2. ✖ The Set instruction causes the relay not to self hold

3. ✔ Retentive relays retain their state of activation, even when the power supply is Off

4. ✖ HSC is one of the low speed counter instruction

Question Number : 197 Question Id : 80089420042 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is not SCADA element?

Options :

1. ✖ Sensor

2. ✖ Actuator

3. ✖ PLC

4. ✔ CNC

Question Number : 198 Question Id : 80089420043 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is a part of PLC architecture?

Options :

1. ✖ Actuator

2. ✖ Motor

3. ✖ Graphical code

4. ✔ Input sensing module

Question Number : 199 Question Id : 80089420044 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

which of the following is a programmable peripheral interface (PPI) ?

Options :

1. ✖ 8085

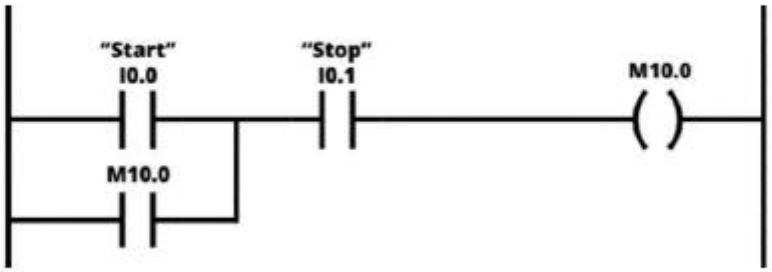
2. ✖ 8051

3. ✔ 8255

4. ✖ 8086

Question Number : 200 Question Id : 80089420045 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What will be the outcome of the ladder logic program shown below?



Options :

1. ✔ The Motor (M10.0) can be ON/OFF by single push button

2. ✖ The Motor (M10.0) can be ON/OFF by two push button

3. ✖ The Motor (M10.0) can only be ON by single push button

4. ✖ The Motor (M10.0) can only be OFF by single push button