

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 Communication Engineering 1st Aug 2022 Shift1
Subject Name :	Electronics and Communication Engineering
Creation Date :	2022-08-01 13:15:00
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 Communication Engineering

Group Number :	1
Group Id :	81959960
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 :	819599231
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 :	819599267
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 81959911831 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 : 81959911832 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

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

Options :

1. ✗ $f(\alpha) - f(\beta)$

2. ✘ $f(\alpha) + f(\beta)$

3. ✘ $f(\alpha - \beta)$

4. ✔ $f(\alpha + \beta)$

Question Number : 3 Question Id : 81959911833 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

$$x + y + z = 9, 2x + 5y + 7z = 52 \text{ and } 2x + y - z = 0 \text{ is}$$

Options :

1. ✘ 0

2. ✔ 1

3. ✘ 2

4. ✘ 3

Question Number : 4 Question Id : 81959911834 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 : 81959911835 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 : 81959911836 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 : 81959911837 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 $4\sin\left(\frac{x}{2}\right) + 5\cos\left(\frac{x}{2}\right)$

Options :

1. ✗ π

2. ✗ 2π

3. ✗ 3π

4. ✓ 4π

Question Number : 8 Question Id : 81959911838 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 $\sin x = \frac{p-q}{p+q}$ 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 : 81959911839 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 $\tan\left[2\tan^{-1}\left(\frac{1}{5}\right) - \frac{\pi}{4}\right]$ is

Options :

1. ✘ $\frac{7}{17}$

2. ✔ $\frac{-7}{17}$

3. ✘ $\frac{17}{7}$

4. ✘ $\frac{-17}{7}$

Question Number : 10 Question Id : 81959911840 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 $\tan x + \cot x = \frac{4}{\sqrt{3}}$ then $x =$

Options :

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

2. ✘ $2n\pi \pm \frac{\pi}{6}, 2n\pi \pm \frac{\pi}{3} \quad n \in \mathbb{Z}$

$$n\pi + \frac{\pi}{6}, n\pi - \frac{\pi}{3} \quad n \in \mathbb{Z}$$

3. ✘

$$n\pi + \frac{\pi}{4}, n \in \mathbb{Z}$$

4. ✘

Question Number : 11 Question Id : 81959911841 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 $\frac{\sin B}{\sin C} = 2\cos A$ then the triangle is

Options :

Equilateral triangle

1. ✘

Right angled triangle

2. ✘

Isosceles triangle

3. ✔

Scalene triangle

4. ✘

Question Number : 12 Question Id : 81959911842 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 :

$$2\sqrt{3} + 2i$$

1. ✘

$$-2\sqrt{3} + 2i$$

2. ✔

3. ✘ $2\sqrt{3} - 2i$

4. ✘ $-\sqrt{3} + i$

Question Number : 13 Question Id : 81959911843 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° , 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 : 81959911844 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 : 81959911845 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 : 81959911846 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 : 81959911847 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 : 81959911848 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

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

Options :

1. ✘ e^{-a}

2. ✘ ae^{-a}

3. ✓ $(1 - a)e^{-a}$

4. ✗ $(1 + a)e^{-a}$

Question Number : 19 Question Id : 81959911849 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 : 81959911850 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 : 81959911851 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. ✗ $\cot u$

2. ✗ $\frac{1}{2} \tan u$

3. ✗ $-\frac{1}{2} \tan u$

4. ✓ $-\cot u$

Question Number : 22 Question Id : 81959911852 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 : 81959911853 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 : 81959911854 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 : 81959911855 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 : 81959911856 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. ✗ $2\tan^{-1}(\sqrt{x + 100}) + C$

4. ✓ $2\tan^{-1}(\sqrt{x + 99}) + C$

Question Number : 27 Question Id : 81959911857 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 : 81959911858 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 $y = x \sin x$ 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 : 81959911859 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 $y = e^x \sin x$, 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 : 81959911860 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 : 81959911861 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 : 81959911862 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 : 81959911863 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 : 81959911864 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 : 81959911865 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 : 81959911866 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. ✘ $y = C_1e^{-x} + e^{2x}(C_2\cos 2x + C_3\sin 2x)$

Question Number : 37 Question Id : 81959911867 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 : 81959911868 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 $\frac{d^3y}{dx^3} + 2\frac{d^2y}{dx^2} + \frac{dy}{dx} = \sin 2x$ 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 : 81959911869 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 : 81959911870 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 : 81959911871 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 : 81959911872 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

$$L\{te^{-t}\sin 3t\} =$$

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 : 81959911873 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

$$L\left\{\frac{\cos 2t - \cos 3t}{t}\right\} =$$

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 : 81959911874 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. ✘ $e^{-t}(2\cos t + \sin t)$

2. ✘ $e^{-t}(2\sin t + \cos t)$

3. ✔ $e^t(2\cos t + \sin t)$

4. ✘ $e^t(2\sin t + \cos t)$

Question Number : 45 Question Id : 81959911875 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. ✘ $e^t(1 + \cos t)$

2. ✘ $e^t(1 - \cos t)$

3. ✘ $e^{-t}(1 + \cos t)$

4. ✔ $e^{-t}(1 - \cos t)$

Question Number : 46 Question Id : 81959911876 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 : 81959911877 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 : 81959911878 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 $f(x) = x \sin x, 0 < x < 2\pi$ and Fourier series of $f(x)$ is given by

$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} (a_n \cos nx + b_n \sin nx) \quad \text{then } b_1 =$$

Options :

1. ✘ 1

2. ✘ 0

3. ✘ -1

4. ✔ π

Question Number : 49 Question Id : 81959911879 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 $f(x) = \begin{cases} x, & \text{when } 0 < x < \frac{\pi}{2} \\ \pi - x, & \text{when } \frac{\pi}{2} < x < \pi \end{cases}$ and the Fourier Series expansion

of $f(x)$ is given by $f(x) = \sum_{n=1}^{\infty} b_n \sin nx$ then the value of $b_2 =$

Options :

1. ✘ π

2. ✔ 0

3. ✘ $-\pi$

4. ✘ -1

Question Number : 50 Question Id : 81959911880 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 :	819599232
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 : 819599268
Question Shuffling Allowed : Yes

Question Number : 51 Question Id : 81959911881 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 : 81959911882 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 : 81959911883 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 : 81959911884 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. ✗ $0\text{ }^{\circ}\text{C}$

2. ✗ $273.15\text{ }^{\circ}\text{C}$

3. ✓ $-273.15\text{ }^{\circ}\text{C}$

4. ✗ $546.3\text{ }^{\circ}\text{C}$

Question Number : 55 Question Id : 81959911885 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 : 81959911886 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 : 81959911887 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 : 81959911888 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 : 81959911889 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. ($g = 10 \text{ m/s}^2$, 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 : 81959911890 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 : 81959911891 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 : 81959911892 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. ✘ $mg(\sin\theta - \cos\theta)$

2. ✘ $mg(\sin\theta + \cos\theta)$

3. ✘ $mg\sin\theta$

4. ✔ $mg\cos\theta$

Question Number : 63 Question Id : 81959911893 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. ✘ $mg y$

2. ✔ $mg x$

3. ✘ $mg(y-x)$

4. ✘ 0

Question Number : 64 Question Id : 81959911894 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 ($g=10 \text{ m/s}^2$)

Options :

1. ✘ 2500 J

2. ✘ 600 J

3. ✔ 15000 J

4. ✘ 150 J

Question Number : 65 Question Id : 81959911895 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 : 81959911896 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

$y = 4 \sin \left(\pi t + \frac{\pi}{4} \right)$ 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 : 81959911897 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 : 81959911898 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 : 81959911899 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 : 81959911900 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 : 81959911901 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' ($r \ll h$) and ' θ ' is the angle of contact then the surface tension of the liquid is given by

Options :

1. ✘ $\frac{hrdg}{2\sin\theta}$

2. ✔ $\frac{hrdg}{2\cos\theta}$

3. ✘ $\frac{hrd}{2g\sin\theta}$

4. ✘ $\frac{hrdg}{\sin\theta}$

Question Number : 72 Question Id : 81959911902 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 5Ω . The resistance of another wire of same material having double length and half the radius is

Options :

1. ✔ 40Ω

2. ✘ 0.4Ω

3. ✘ 5Ω

4. ✘ 10Ω

Question Number : 73 Question Id : 81959911903 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 : 81959911904 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 : 81959911905 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 :	819599233
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 :	819599269
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 81959911906 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 : 81959911907 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 : 81959911908 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 A₂
4. ✗ Ionic A₂B

Question Number : 79 Question Id : 81959911909 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 : 81959911910 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 : 81959911911 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 1 Litre of Water. The P^H of the solution is

Options :

1. ✘ 1

2. ✔ 13

3. ✘ 14

4. ✘ 2

Question Number : 82 Question Id : 81959911912 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. ✘ C_2H_2

2. ✔ BF_3

3. ✘ H_2O

4. ✘ OH^-

Question Number : 83 Question Id : 81959911913 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 : 81959911914 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 : 81959911915 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 : 81959911916 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 : 81959911917 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 :

Electrical energy is converted into Chemical energy

1. ✘

Mechanical energy is converted into Electrical energy

2. ✘

Chemical energy is converted into Electrical energy

3. ✔

Chemical energy is converted into Mechanical energy

4. ✘

Question Number : 88 Question Id : 81959911918 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 :

Lithium- ion battery

1. ✘

Lead Storage battery

2. ✘

Ni-Cd battery

3. ✘

Leclanche battery

4. ✔

Question Number : 89 Question Id : 81959911919 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 :

Au

1. ✘

2. ✓ Na

3. ✗ Cu

4. ✗ Pt

Question Number : 90 Question Id : 81959911920 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 : 81959911921 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. ✗ $\text{Ca}(\text{HCO}_3)_2$

4. ✓ CaCO_3

Question Number : 92 Question Id : 81959911922 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. ✗ $\text{K Al Si}_3\text{O}_8$

2. ✓ $\text{Na}_2\text{Al}_2\text{Si}_2\text{O}_8 \cdot x\text{H}_2\text{O}$

3. ✗ $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$

4. ✗ $\text{K}_2\text{O Al}_2\text{O}_3 6\text{SiO}_2 2\text{H}_2\text{O}$

Question Number : 93 Question Id : 81959911923 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 : 81959911924 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 : 81959911925 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, H₂

2. ✘ CH₄, H₂

3. ✘ CH₄, CO₂

4. ✘ CO, N₂

Question Number : 96 Question Id : 81959911926 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 O₂ is required for combustion of 16 grams of methane (CH₄)

Options :

1. ✘ 32 g

2. ✔ 64 g

3. ✘ 16 g

4. ✘ 8g

Question Number : 97 Question Id : 81959911927 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. ✘ SO₂

2. ✘ CO₂

3. ✔ CFC

4. ✘ H₂

Question Number : 98 Question Id : 81959911928 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 : 81959911929 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 : 81959911930 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 Communication Engineering

Section Id :	819599234
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 :	819599270
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 81959911931 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 region of junction diode has no mobile charge carriers?

Options :

1. ✓ Depletion region
2. ✗ Space charge region
3. ✗ Reverse charge region
4. ✗ Transition region

Question Number : 102 Question Id : 81959911932 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 reverse voltage, space charge width and capacitance of varactor diode are respectively

Options :

1. ✗ Larger, larger and larger
2. ✗ Smaller, smaller and larger

3. ✘ Smaller, smaller and smaller

4. ✔ Larger, larger and smaller

Question Number : 103 Question Id : 81959911933 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

Match the following:

- | | |
|----------------|---|
| (i) Comparator | (a) Selects some part of the signal |
| (ii) Clipper | (b) convert an alternating waveform into dc |
| (iii) Clamper | (c) not reproduce any part of the signal |
| (iv) Rectifier | (d) establishment of recurrent positive or negative extremity of signal |

Options :

1. ✘ (i) – (a), (ii) – (b), (iii) – (c), (iv) – (d)

2. ✔ (i) – (c), (ii) – (a), (iii) – (d), (iv) – (b)

3. ✘ (i) – (a), (ii) – (c), (iii) – (b), (iv) – (d)

4. ✘ (i) – (b), (ii) – (d), (iii) – (c), (iv) – (a)

Question Number : 104 Question Id : 81959911934 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

One of the following is not an advantage of Bridge Rectifier.

Options :

1. ✔ PIV of each diode is $\geq 2 V_m$

2. ✘ Small transformer is required

3. ✘ High transformer utilization factor

4. ✘ Area of one full cycle is twice that of a half wave rectifier

Question Number : 105 Question Id : 81959911935 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 FET differs from the BJT in the following characteristics except

Options :

1. ✘ Unipolar device
2. ✘ Simpler to fabricate
3. ✔ Occupies large space
4. ✘ Exhibits high input resistance

Question Number : 106 Question Id : 81959911936 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 effect of bias current of op-amp integrator can be minimized by

Options :

1. ✔ Increasing the feedback capacitor while simultaneously decreasing the value of R
2. ✘ Decreasing the feedback capacitor while simultaneously decreasing the value of R
3. ✘ Increasing both feedback capacitor and the value of R
4. ✘ Decreasing both feedback capacitor and the value of R

Question Number : 107 Question Id : 81959911937 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 the linear region operation, the collector-base and base-emitter junctions of a transistor are respectively

Options :

1. ✘ both are forward bias

2. ✘ both are reverse bias
3. ✘ forward bias and reverse bias
4. ✔ reverse bias and forward bias

Question Number : 108 Question Id : 81959911938 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

Current amplification factor in common emitter configuration of transistor is

Options :

1. ✔ β
2. ✘ γ
3. ✘ δ
4. ✘ α

Question Number : 109 Question Id : 81959911939 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

To maintain a fixed and stable operating point, the value of stability factor for a transistor amplifier must be

Options :

1. ✔ Zero
2. ✘ Twice that of V_{cc}
3. ✘ Half of V_{cc}
4. ✘ Infinity

Question Number : 110 Question Id : 81959911940 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 number of input signal combinations are possible in differential amplifier except

Options :

1. ✘ An input signal is applied to either input with the other input connected to ground
2. ✘ Two opposite polarity input signals are applied
3. ✘ Same input is applied to both inputs
4. ✔ Both input signals are grounded

Question Number : 111 Question Id : 81959911941 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 amplifier is biased at a dc level above the zero-base-current level and above one-half the supply voltage level; this bias condition is

Options :

1. ✘ Class A
2. ✘ Class B
3. ✔ Class AB
4. ✘ Class D

Question Number : 112 Question Id : 81959911942 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 charge and discharge voltage levels of capacitor in Astable multivibrator using IC 555 timer are

Options :

1. ✘ $< \frac{2}{3}V_{cc}$ and $> \frac{1}{3}V_{cc}$

2. ✔ $> \frac{2}{3}V_{cc}$ and $< \frac{1}{3}V_{cc}$

3. ✘ $< \frac{1}{3}V_{cc}$ and $> \frac{1}{3}V_{cc}$

4. ✘ $> 2V_{ce}$ and $< -V_{cc}$

Question Number : 113 Question Id : 81959911943 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 range of input frequencies over which PLL will capture the input signal is referred as

Options :

1. ✘ free range

2. ✘ lock range

3. ✔ capture range

4. ✘ dead band

Question Number : 114 Question Id : 81959911944 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

Match the following with respect to the negative feedback effect on input and output impedances respectively:

- | | |
|----------------------|-----------------------------|
| (i) Voltage series | (a) increased and increased |
| (ii) Voltage shunt | (b) increased and decreased |
| (iii) Current series | (c) decreased and decreased |
| (iv) Current shunt | (d) decreased and increased |

Options :

- ✘ (i) - (c), (ii) - (d), (iii) - (b), (iv) - (a)
- ✘ (i) - (b), (ii) - (a), (iii) - (d), (iv) - (c)
- ✘ (i) - (a), (ii) - (b), (iii) - (c), (iv) - (d)
- ✔ (i) - (b), (ii) - (c), (iii) - (a), (iv) - (d)

Question Number : 115 Question Id : 81959911945 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 following circuit protect the load from overcurrent as well as protecting the regulator.

Options :

- ✔ fold back limiting
- ✘ current limiting
- ✘ fixed bias
- ✘ comparator

Question Number : 116 Question Id : 81959911946 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 true with respect to KVL?

Options :

1. ✘ The algebraic sum of the voltage drops is zero
2. ✔ The algebraic sum of the voltage rises is infinity
3. ✘ The algebraic sum of the voltage drops equals the algebraic sum of the voltage rises.
4. ✘ The Voltage drops are only across resistors and the voltage rises are only across voltage sources.

Question Number : 117 Question Id : 81959911947 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

Quality factor-Q of a resonant circuit signifies:

Options :

1. ✘ Gain in the resonant circuit
2. ✔ Loss in the resonant circuit
3. ✘ Magnetic energy stored in the circuit
4. ✘ Electric energy stored in the circuit

Question Number : 118 Question Id : 81959911948 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 resistive load receives maximum power from a linear, bilateral dc circuit if the load resistance equals the Thevenin resistance of the circuit” is the statement of the following theorem.

Options :

1. ✘ Thevenin's

2. ✘ Norton's

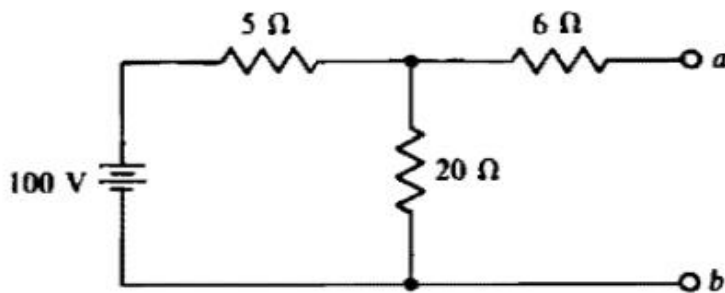
3. ✘ Superposition

4. ✔ Maximum power

Question Number : 119 Question Id : 81959911949 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 resistor draws a current of 5A when connected across terminals a and b of the following circuit?



Options :

1. ✘ 5 Ω

2. ✔ 6 Ω

3. ✘ 10 Ω

4. ✘ 20 Ω

Question Number : 120 Question Id : 81959911950 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

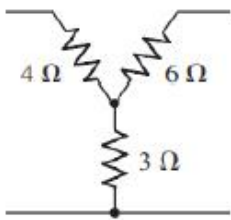
What is the maximum power that can be drawn from a 12 V battery that has an internal resistance of 0.25 Ω?

Options :

1. ✘ 3 W
2. ✘ 48 W
3. ✔ 144 W
4. ✘ 576 W

Question Number : 121 Question Id : 81959911951 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 resistances of delta equivalent circuit for the following star circuit are



Options :

1. ✘ 10Ω, 9Ω, 7Ω
2. ✘ 24Ω, 18Ω, 12Ω
3. ✔ 13.5Ω, 9Ω, 18Ω
4. ✘ 1.85Ω, 1.39Ω, 0.92Ω

Question Number : 122 Question Id : 81959911952 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 the simple RL circuit with the values of $R=200\Omega$, $L=50\text{mH}$ and inductor has initial current of 2A at $t=0$, then the expression for $i_L(t)$ at $t>0$ is

Options :

1. ✔ $2e^{-4000t}$

2. ✘ $0.5e^{4000t}$

3. ✘ $0.5e^{10t}$

4. ✘ $2e^{-10t}$

Question Number : 123 Question Id : 81959911953 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 parallel RLC network is in resonance when the

Options :

1. ✘ Voltage and current at the network input terminals are in outoff phase

2. ✔ Voltage and current at the network input terminals are in phase

3. ✘ Voltage at the network input and output terminals are in outoff phase

4. ✘ Current at the network input and output terminals are in phase

Question Number : 124 Question Id : 81959911954 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 rank of a graph with '4' number of nodes is

Options :

1. ✘ 2

2. ✔ 3

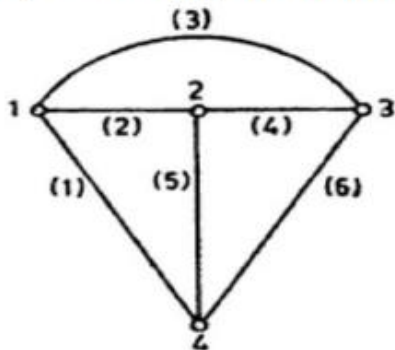
3. ✘ 4

4. ✘ 8

Question Number : 125 Question Id : 81959911955 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 possible twigs of the following graph are



Options :

1. ✘ $\{1,2,5\}, \{2,3,6\}, \{3,4,6\}$
2. ✘ $\{1,3,4\}, \{1,3,6\}, \{2,3,5\}$
3. ✘ $\{1,5,6\}, \{1,4,5\}, \{2,4,6\}$
4. ✔ $\{2,5,6\}, \{2,4,5\}, \{1,4,6\}$

Question Number : 126 Question Id : 81959911956 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 reflection coefficient and VSWR of open circuit transmission line are

Options :

1. ✘ 0 and 1
2. ✘ 1 and 1
3. ✔ 1 and ∞
4. ✘ ∞ and ∞

Question Number : 127 Question Id : 81959911957 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 lossless transmission line α, β, z_0 and v_p are respectively

Options :

1. ✘ $1, \frac{1}{\sqrt{LC}}, \sqrt{\frac{L}{C}}, w\sqrt{LC}$

2. ✘ $0, w/\sqrt{LC}, \sqrt{\frac{C}{L}}, \frac{w}{\sqrt{LC}}$

3. ✔ $0, w\sqrt{LC}, \sqrt{\frac{L}{C}}, \frac{1}{\sqrt{LC}}$

4. ✘ $\infty, w/\sqrt{LC}, \sqrt{\frac{L}{C}}, \frac{w}{\sqrt{LC}}$

Question Number : 128 Question Id : 81959911958 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 characteristic impedance of symmetrical T network is

Options :

1. ✘ $\sqrt{\frac{Z_1 Z_2}{1 + \frac{Z_1}{4Z_2}}}$

2. ✘ $\sqrt{\frac{Z_2^2}{4} + Z_1 Z_2}$

3. ✘ $\sqrt{\frac{Z_1^2}{4} - Z_1 Z_2}$

4. ✔ $\sqrt{\frac{Z_1^2}{4} + Z_1 Z_2}$

Question Number : 129 Question Id : 81959911959 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 selectivity of a series RLC resonance circuit with resonance frequency is 10kHz and a bandwidth of 2kHz?

Options :

- 1. ✘ 0.2
- 2. ✘ 2.5
- 3. ✔ 5.0
- 4. ✘ 10.0

Question Number : 130 Question Id : 81959911960 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 the quarter wave length transmission line

Options :

- 1. ✘ $Z_{in} = 2Z_o$
- 2. ✘ $l = \frac{\lambda}{8}$
- 3. ✘ Larger bandwidth
- 4. ✔ Matches at only one frequency

Question Number : 131 Question Id : 81959911961 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 bands of TRAIC are structured as

Options :

1. ✘ PNP
2. ✘ NPNP
3. ✘ PNPN
4. ✔ NPNNP

Question Number : 132 Question Id : 81959911962 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 Snubber circuit is used in thyristor to protect against

Options :

1. ✘ High $\frac{di}{dt}$
2. ✔ High $\frac{dv}{dt}$
3. ✘ Surge currents of long duration
4. ✘ Fault conditions

Question Number : 133 Question Id : 81959911963 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 welding is employed particularly for welding steel barrels, oil tanks and steam radiators?

Options :

1. ✘ Spot
2. ✘ Butt
3. ✘ Projection

4. ✓ Seam

Question Number : 134 Question Id : 81959911964 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 following all are characteristic features of induction heating except

Options :

1. ✗ The portion of the surface to be heated can be accurately controlled
2. ✗ Working conditions are pleasant near induction heaters
3. ✓ Induction heating is termed as volume heating
4. ✗ Induction heaters can be operated by unskilled labour in industry

Question Number : 135 Question Id : 81959911965 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 input voltage to an LVDT is 0.5V, displacement of the core is $\pm 20\mu\text{m}$ and the sensitivity is $1\text{mV}/5\mu\text{m}/1\text{V}$, calculate the output voltage.

Options :

1. ✗ 0.5 V
2. ✗ 1 V
3. ✓ 2 mV
4. ✗ 10 mV

Question Number : 136 Question Id : 81959911966 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 strain guage

Options :

1. ✓ High sensitivity implies a high value of guage factor
2. ✗ High sensitivity implies a low value of guage factor
3. ✗ low sensitivity implies a high value of guage factor
4. ✗ sensitivity and guage factor are not related

Question Number : 137 Question Id : 81959911967 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 RTD, the variation of resistance with temperature is typically given as

Options :

1. ✗ $R_{T_2} = R_{T_1}(1 + \alpha/(2T_2 + T_1))$
2. ✓ $R_{T_2} = R_{T_1}(1 + \alpha(T_2 - T_1))$
3. ✗ $R_{T_2} = R_{T_1}/(1 + 2\alpha(T_2 - T_1))$
4. ✗ $R_{T_2} = R_{T_1}/(1 + \alpha(T_2 - 2T_1))$

Question Number : 138 Question Id : 81959911968 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 the thermocouple the two wires made of -----are joined at one end

Options :

1. ✗ Metal and insulator
2. ✗ Metal and semiconductor
3. ✗ Similar metals

4. ✓ Dissimilar metals

Question Number : 139 Question Id : 81959911969 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 PLC does not contain the following section

Options :

1. ✓ ADC

2. ✗ CPU

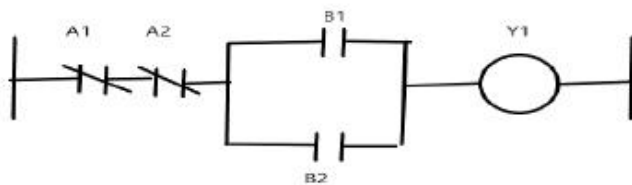
3. ✗ I/O

4. ✗ Programming device

Question Number : 140 Question Id : 81959911970 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 following ladder symbol diagram represents



Options :

1. ✗ AND

2. ✗ OR

3. ✗ AND and OR

4. ✓ NAND and OR

Question Number : 141 Question Id : 81959911971 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

Match the following for different multiplexing methods:

- | | | | |
|-------|-----|-------|--|
| (i) | FDM | (a) | used for optical fibers |
| (ii) | TDM | (b) | message signal is identified by distinctive code |
| (iii) | CDM | (c) | Pule modulation is used |
| (iv) | WDM | (d) | CW modulation is used |

Options :

1. ✘ (i) – (c), (ii) – (a), (iii) – (d) (iv) – (b)
2. ✘ (i) – (b), (ii) – (d), (iii) – (a) (iv) – (c)
3. ✘ (i) – (a), (ii) – (b), (iii) – (c) (iv) – (d)
4. ✔ (i) – (d), (ii) – (c), (iii) – (b) (iv) – (a)

Question Number : 142 Question Id : 81959911972 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 efficiency η of digital communication system is given by

(R is signaling rate, B is channel bandwidth, C is information capacity of channel and
SNR is Signal to Noise Ratio)

Options :

1. ✔ R/C
2. ✘ B/C
3. ✘ B/SNR
4. ✘ R/B

Question Number : 143 Question Id : 81959911973 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 Costas receiver is used to demodulate the following modulated signal.

Options :

1. ✘ AM
2. ✔ DSB
3. ✘ SSB
4. ✘ VSB

Question Number : 144 Question Id : 81959911974 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 equation for VSB modulated signal

Options :

1. ✘ $A_c[1 + k_a m(t)]\cos(2\pi f_c t)$
2. ✘ $A_c m(t)\cos(2\pi f_c t)$
3. ✘ $\frac{1}{2}A_c m_1(t)\cos(2\pi f_c t) \pm \frac{1}{2}A_c m_2(t)\sin(2\pi f_c t)$
4. ✔ $\frac{1}{2}A_c m(t)\cos(2\pi f_c t) \pm \frac{1}{2}A_c m'(t)\sin(2\pi f_c t)$

Question Number : 145 Question Id : 81959911975 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 carrier wave of frequency 100MHz is FM by a sinusoidal wave of amplitude 20 V and frequency 100kHz. The frequency sensitivity of the modulator is 25kHz per volt.

Determine the approximate bandwidth of the FM signal using Carson's rule.

Options :

1. ✘ 50 kHz
2. ✔ 1200 kHz

3. ✘ 100 MHz

4. ✘ 2500 MHz

Question Number : 146 Question Id : 81959911976 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

Linear prediction is used to encode an Analog message signals at reduced bit rates in

Options :

1. ✘ Pulse Code Modulation

2. ✘ Delta Modulation

3. ✘ Delta Sigma Modulation

4. ✔ Differential Pulse Code Modulation

Question Number : 147 Question Id : 81959911977 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 samples of the message signal are used to vary the duration of the individual pulses in the carrier is called

Options :

1. ✘ Pulse Amplitude Modulation

2. ✘ Pulse Position Modulation

3. ✔ Pulse Width Modulation

4. ✘ Pulse Code Modulation

Question Number : 148 Question Id : 81959911978 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 modulation methods exhibit a similar noise performance?

Options :

1. ✘ AM and FM
2. ✘ PCM and AM
3. ✘ PWM and PPM
4. ✔ PPM and FM

Question Number : 149 Question Id : 81959911979 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

One of the following produces smaller bit error rates?

Options :

1. ✘ ASK
2. ✘ FSK
3. ✔ PSK
4. ✘ coherent FSK

Question Number : 150 Question Id : 81959911980 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 most popular frequency band 6/4GHz for satellite communications offers the following advantages except

Options :

1. ✓ Terrestrial microwave systems interference
2. ✗ Relative inexpensive microwave equipment
3. ✗ Low attenuation due to rain fall
4. ✗ Insignificant sky background noise

Question Number : 151 Question Id : 81959911981 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 ratio of the power available at the antenna terminals to the power per unit area of the appropriately polarized incident electromagnetic wave” is called

Options :

1. ✗ Effective aperture
2. ✓ Effective length
3. ✗ Radiation resistance
4. ✗ Beam width

Question Number : 152 Question Id : 81959911982 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 figure of merit of earth station of satellite communication system is given by

Options :

1. ✗ C/N
2. ✗ EIRP
3. ✓ G/T

4. ✘ $\frac{4\pi d}{\lambda}$

Question Number : 153 Question Id : 81959911983 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 superheterodyne receiver constant frequency difference is maintained between the local oscillator and RF circuitry; normally through

Options :

1. ✘ Inductive tuning

2. ✘ Variable resistor

3. ✔ Gang capacitor

4. ✘ Variable frequency

Question Number : 154 Question Id : 81959911984 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 IF frequency of receiver is high then it have all of the following except

Options :

1. ✘ Poor selectivity

2. ✔ Poor image frequency rejection

3. ✘ Poor adjacent channel rejection

4. ✘ Tracking difficulties

Question Number : 155 Question Id : 81959911985 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

One of the following is not correct with respect to broad side array.

Options :

1. ✓ Phase lag between the succeeding elements
2. ✗ Number of dipoles of equal size
3. ✗ Equally spaced along a line
4. ✗ All elements fed from the same source

Question Number : 156 Question Id : 81959911986 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 Rhombic antenna does not have to be an integral number of half-wavelengths long because

Options :

1. ✓ It is non-resonant
2. ✗ It is resonant
3. ✗ Of terminated with high resistance
4. ✗ Of high operating frequencies

Question Number : 157 Question Id : 81959911987 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 transit time of electrons in repeller space of Reflex klystron is (n is any integer)

Options :

1. ✗ $n + \frac{1}{3}$

2. ✘ $n + \frac{1}{4}$

3. ✘ $n + \frac{2}{3}$

4. ✔ $n + \frac{3}{4}$

Question Number : 158 Question Id : 81959911988 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 coho of MTI radar operates at the

Options :

1. ✘ Receiver frequency

2. ✘ Transmitting frequency

3. ✔ Intermediate frequency

4. ✘ Pulse repetition time

Question Number : 159 Question Id : 81959911989 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 echo signals produced from reflecting objects are shown in plan position with range and azimuth angle displayed in

Options :

1. ✘ A scope

2. ✘ B scope

3. ✘ J scope

4. ✓ P scope

Question Number : 160 Question Id : 81959911990 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 formula for the cut-off wavelength, in a standard rectangular waveguide with 2:1 aspect ratio for the TM_{11} mode is

Options :

1. ✗ $2a$

2. ✗ $2b$

3. ✓ $\frac{2a}{\sqrt{5}}$

4. ✗ $\frac{1}{\sqrt{a+b}}$

Question Number : 161 Question Id : 81959911991 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 equivalent binary number of $(123.4)_8$ is

Options :

1. ✓ 001010011.100

2. ✗ 010001100.101

3. ✗ 101010100.110

4. ✗ 101001001.001

Question Number : 162 Question Id : 81959911992 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 minimization of the Boolean function $xyz+xyz^1+x^1yz+x^1y^1z$ is

Options :

1. ✘ $xy+yz$
2. ✘ x^1z+yz
3. ✔ $xy+x^1z$
4. ✘ xyz

Question Number : 163 Question Id : 81959911993 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

One of following gate is functionally complete.

Options :

1. ✘ AND
2. ✘ OR
3. ✘ Ex-OR
4. ✔ NOR

Question Number : 164 Question Id : 81959911994 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 flip-flop remains in one state indefinitely until it is directed by an input signal to do otherwise?

Options :

1. ✘ JK flip-flop
2. ✘ RS flip-flop

3. ✓ T flip-flop

4. ✗ D flip-flop

Question Number : 165 Question Id : 81959911995 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 modulo-8 binary counter is

Options :

1. ✗ Capable of counting in the binary number system up to 8
2. ✗ Producing an output value 1 for every eight input 1 values
3. ✗ After a count of eight is reached, the next input value 1 will reset the counter
4. ✓ After a count of eight counter will reach initial state i.e., count of zero

Question Number : 166 Question Id : 81959911996 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 data router is a

Options :

1. ✗ Multiplexer
2. ✓ Demultiplexer
3. ✗ Encoder
4. ✗ Adder

Question Number : 167 Question Id : 81959911997 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 12-bit adder in the 2's complement notation can handle

Options :

1. ✓ 11 bit integers plus a sign
2. ✗ 12 bit integers plus a sign
3. ✗ 10 bit integers plus a 2 bits for sign
4. ✗ 12 bit integers only

Question Number : 168 Question Id : 81959911998 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 data storage, the more bits per package is better because

Options :

1. ✗ Ability to gain access to all the bits simultaneously
2. ✗ Easy to specifying which bit or group of bits look at
3. ✗ Slow storage capability
4. ✓ Price per bit is declining

Question Number : 169 Question Id : 81959911999 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 address bits required for 1M X 1-bit RAM is

Options :

1. ✗ 8 bits
2. ✗ 16 bits

3. ✓ 20 bits

4. ✗ 32 bits

Question Number : 170 Question Id : 81959912000 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 12 bit DAC with full scale voltage of 10V is

Options :

1. ✓ 2.44 mV

2. ✗ 8.33mV

3. ✗ 1.2 V

4. ✗ 10V

Question Number : 171 Question Id : 81959912001 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 8051 has all of the following except

Options :

1. ✗ 128 bytes of RAM

2. ✓ 8k bytes of on-chip ROM

3. ✗ Two timers

4. ✗ Four I/O ports, each 8 bits wide

Question Number : 172 Question Id : 81959912002 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 interrupt sources in 8051 microcontroller is

Options :

1. ✘ 2
2. ✘ 4
3. ✔ 6
4. ✘ 8

Question Number : 173 Question Id : 81959912003 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 Directives in the microcontroller

Options :

1. ✔ Give directions to the assembler
2. ✘ Tell the CPU what to do?
3. ✘ Add the source byte to register
4. ✘ Load the value to the register

Question Number : 174 Question Id : 81959912004 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 linker program takes one or more object code files and produce an absolute object file with the extension

Options :

1. ✘ lst
2. ✘ obj
3. ✔ abs

4. ✘ hex

Question Number : 175 Question Id : 81959912005 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 Program counter of 8051 microcontroller can access program addresses of

Options :

1. ✘ 000 to FFH
2. ✘ 000 to FFFH
3. ✘ 0000 to FFFF
4. ✔ 0000 to FFFFH

Question Number : 176 Question Id : 81959912006 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 status of the CY, AC, and P flag after the following instructions:

```
MOV A, #38H
ADD A, #2FH
```

Options :

1. ✘ CY = 0, AC = 0, P = 1
2. ✔ CY = 0, AC = 1, P = 1
3. ✘ CY = 1, AC = 0, P = 0
4. ✘ CY = 1, AC = 1, P = 0

Question Number : 177 Question Id : 81959912007 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 following line driver is used to convert the RS232's signals to TTL voltage levels that will be acceptable to 8051's TXD and RxD pins.

Options :

1. ✓ MAX 232
2. ✗ IC 8257
3. ✗ IC89C430
4. ✗ UART

Question Number : 178 Question Id : 81959912008 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

Indicate which mode and which timer of 8051 are selected for the following instruction.

Options :

1. ✗ TMOD=00000001, mode1 of timer 0 is selected
2. ✗ TMOD=00100000, mode 2 of timer 1 is selected
3. ✗ TMOD=00100001, mode2 of timer 1 and mode 1 of timer 2 are selected
4. ✓ TMOD=00010010, mode2 of timer 0 and mode 1 of timer 1 are selected

Question Number : 179 Question Id : 81959912009 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 key matrix is connected to microcontroller in such way that

Options :

1. ✗ All rows and columns are grounded

2. ✘ Rows are connected to ground and columns are connected to Vcc
3. ✘ Rows are connected to Vcc and columns are connected to ground
4. ✔ Rows are connected to an output port and columns are connected to an input port

Question Number : 180 Question Id : 81959912010 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

Match the following:

- | | | |
|-------|----------|-----------------------|
| (i) | IC 8257 | (a) Audio amplifier |
| (ii) | IC 8251 | (b) PPI |
| (iii) | IC 8255 | (c) DMA controller |
| (iv) | MD 8002A | (d) USART |

Options :

1. ✔ (i) – (c) , (ii) - (d) , (iii) – (b) , (iv) – (a)
2. ✘ (i) – (b) , (ii) - (a) , (iii) – (d) , (iv) – (c)
3. ✘ (i) – (d) , (ii) - (c) , (iii) – (b) , (iv) – (a)
4. ✘ (i) – (a) , (ii) - (b) , (iii) – (c) , (iv) – (d)

Question Number : 181 Question Id : 81959912011 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

State true or false for the following statements with respect to color TV

- (i) the hue is indicated by a luminance signal
- (ii) Phase Alteration by Line is a color TV system
- (iii) single camera with a stripe filter is used
- (iv) Color transmissions are not reproducible in black and white

Options :

1. ✘ (i) true (ii) false (iii) false (iv) true

2. ✓ (i) false (ii) true (iii) true (iv) false

3. ✗ (i) true (ii) true (iii) true (iv) false

4. ✗ (i) false (ii) false (iii) true (iv) true

Question Number : 182 Question Id : 81959912012 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 TV the field frequency is ----- the frame frequency.

Options :

1. ✗ Half of

2. ✗ Same

3. ✓ Twice

4. ✗ Three times

Question Number : 183 Question Id : 81959912013 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 electron beam is directed to move by

Options :

1. ✓ Deflection coils is in the form of a sawtooth wave

2. ✗ Vertical amplifier in the form of sinusoidal wave

3. ✗ Horizontal oscillator in the form of square wave

4. ✗ Time delay unit in the form of triangular wave

Question Number : 184 Question Id : 81959912014 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

Progressive scanning is advantage compared to interlaced scanning except

Options :

1. ✘ Better for moving objects
2. ✘ No flicker
3. ✘ Higher vertical resolution
4. ✔ Less bandwidth

Question Number : 185 Question Id : 81959912015 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 serrations are used to

Options :

1. ✔ Provide horizontal sync during vertical pulse
2. ✘ Extract the vertical sync pulse at receiver
3. ✘ Remove blanking after sync pulses
4. ✘ Add equalizing pulses

Question Number : 186 Question Id : 81959912016 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 synchronizing circuits is

Options :

1. ✘ Provide a drive power to the horizontal amplifier
2. ✔ Extraction of sync information from the composite waveform

3. ✘ Separate a sound wave
4. ✘ Supply a power to vertical amplifier

Question Number : 187 Question Id : 81959912017 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 color disk shows that the received Q signal is zero and I is maximum then the color produced is

Options :

1. ✘ Saturated yellowish green
2. ✘ Paler raddish orange
3. ✔ Saturated raddish orange
4. ✘ Pure blue

Question Number : 188 Question Id : 81959912018 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 short burst of color subcarrier is sent to

Options :

1. ✘ Provide a luminance signal as match with monochrome transmission
2. ✘ Separate the sound signal and apply to sound section
3. ✔ Ensure that the absolute phase of I and Q vectors is correct
4. ✘ Represent a required color on screen

Question Number : 189 Question Id : 81959912019 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 interference between the sound subcarrier and video voltage due to color is reduced by making the sound subcarrier frequency is

Options :

1. ✘ As possible as high
2. ✘ Same as vertical field frequency
3. ✘ Same as chroma frequency
4. ✔ Multiple of the horizontal scanning frequency

Question Number : 190 Question Id : 81959912020 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

Match the following with respect to TV system

- | | |
|---------------------|---|
| (i) Shadow mask | (a) speed up the retrace |
| (ii) Degassing coil | (b) reducing the ac magnetic field |
| (iii) Color killer | (c) a beam strikes the appropriate phosphorus dots |
| (iv) Damper diode | (d) chroma amplifier is off during monochrome reception |

Options :

1. ✘ (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)
2. ✔ (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)
3. ✘ (i) - (c), (ii) - (a), (iii) - (d), (iv) - (b)
4. ✘ (i) - (d), (ii) - (b), (iii) - (c), (iv) - (a)

Question Number : 191 Question Id : 81959912021 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 cladding of the optical fiber is used to

Options :

1. ✘ Protect the fiber
2. ✘ Reduce the interference
3. ✔ Guide the light in the core
4. ✘ Provide a mechanical strength

Question Number : 192 Question Id : 81959912022 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

Match the following

- | | |
|-----------|---------------------|
| (i) PAN | (a) Router |
| (ii) LAN | (b) Ethernet |
| (iii) MAN | (c) Bluetooth |
| (iv) WAN | (d) Cable network |

Options :

1. ✘ (i) – (c), (ii) - (d), (iii) – (a), (iv) – (b)
2. ✘ (i) – (d), (ii) - (a), (iii) – (b), (iv) – (c)
3. ✘ (i) – (a), (ii) - (b), (iii) – (d), (iv) – (c)
4. ✔ (i) – (c), (ii) - (b), (iii) – (d), (iv) – (a)

Question Number : 193 Question Id : 81959912023 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 true end-to-end layer is

Options :

1. ✘ Data layer
2. ✘ Physical layer
3. ✔ Transport layer
4. ✘ Session layer

Question Number : 194 Question Id : 81959912024 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

TCP and UCP protocols are used in layer of

Options :

1. ✘ Application layer
2. ✘ Network layer
3. ✘ Link layer
4. ✔ Transport layer

Question Number : 195 Question Id : 81959912025 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

One of the following is incorrect with respect to HTTP.

Options :

1. ✔ Network layer protocol
2. ✘ Runs over TCP
3. ✘ Specifies what messages clients may send to servers
4. ✘ Specifies what responses they get back in return

Question Number : 196 Question Id : 81959912026 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 proxy is used

Options :

1. ✘ to provide a small cache
2. ✔ as an agent that acts on behalf of someone else
3. ✘ then bandwidth is increased
4. ✘ then web requests are slowdown

Question Number : 197 Question Id : 81959912027 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 mechanism used to block the incoming connections to operate internal machines safely is

Options :

1. ✘ Buffers
2. ✘ Routers
3. ✔ Firewall
4. ✘ Ethernet

Question Number : 198 Question Id : 81959912028 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 following all are the advantages of circuit switching except

Options :

1. ✘ No waiting time at switches

2. ✘ Connection-oriented service
3. ✘ Data is transmitted with fixed data rate
4. ✔ Dedicated channels

Question Number : 199 Question Id : 81959912029 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 host is connected to one or multiple hosts in the topology of

Options :

1. ✘ Bus
2. ✘ Star
3. ✔ Mesh
4. ✘ Ring

Question Number : 200 Question Id : 81959912030 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

Socket is a combination of

Options :

1. ✔ Port and IP address
2. ✘ Server and user
3. ✘ Data and datagram
4. ✘ File and protocol