

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 20th May 2023 Shift1 SET1
Subject Name :	Electronics and Communication Engineering
Creation Date :	2023-05-20 13:03:33
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
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 :	15920728
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 :	159207106
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 : 159207127
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 1 Question Id : 1592075416 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$. If $A^2 = \alpha A + \beta I$, where I is the 2×2 identity matrix, then $(\alpha, \beta) =$

Options :

1. ✘ (5, 7)

2. ✘ (-5, -7)

3. ✘ (-5, 7)

4. ✔ (5, -7)

Question Number : 2 Question Id : 1592075417 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $(a + b + c) = 5$, then

$$\det \begin{bmatrix} a-b-c & 2b & 2c \\ 2a & b-c-a & 2c \\ 2a & 2b & c-a-b \end{bmatrix} =$$

Options :

1. ✘ 5

2. ✘ 25

3. ✔ 125

4. ✘ 625

Question Number : 3 Question Id : 1592075418 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \begin{bmatrix} 4 & 3 \\ 9 & 7 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 18 \\ 41 \end{bmatrix}, \text{ then } 12x + 10y =$$

Options :

1. ✘ 58

2. ✔ 56

3. ✖ 54

4. ✖ 52

Question Number : 4 Question Id : 1592075419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\log_{16} x + \log_4 x + \log_2 x = 7$, then $x =$

Options :

1. ✔ 16

2. ✖ 32

3. ✖ 64

4. ✖ 128

Question Number : 5 Question Id : 1592075420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\frac{2x^2 - 6x + 5}{x^3 - 6x^2 + 11x - 6} = \frac{A}{x-1} + \frac{B}{x-2} + \frac{C}{x-3}$, then $10A + B + 2C =$

Options :

1. ✘ 5

2. ✘ 7

3. ✔ 9

4. ✘ 11

Question Number : 6 Question Id : 1592075421 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\log_x (3x^2 + 10x) = 3$, then $x =$

Options :

1. ✘ 3

2. ✔ 5

3. ✘ 7

4. ✘ 9

Question Number : 7 Question Id : 1592075422 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\sin^2 45^\circ + \sin^2 135^\circ + \sin^2 225^\circ + \sin^2 315^\circ$ is

Options :

1. ✘ 1

2. ✔ 2

3. ✘ 0

4. ✘ 4

Question Number : 8 Question Id : 1592075423 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\triangle ABC$, if $a = 3$, $b = 4$ and $\sin A = \frac{3}{4}$, then the angle $B =$

Options :

1. ✘ 45°

2. ✘ 60°

3. ✓ 90°

4. ✗ 70°

Question Number : 9 Question Id : 1592075424 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\sin^2 36^\circ - \sin^2 18^\circ =$$

Options :

1. ✗ $\frac{1}{2}$

2. ✓ $\frac{1}{4}$

3. ✗ $\frac{1}{8}$

4. ✗ 1

Question Number : 10 Question Id : 1592075425 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 the function $\cos\left(\frac{5}{3}\right)\sin\left(\frac{2x}{3}\right) + \sin\left(\frac{5}{3}\right)\cos\left(\frac{2x}{3}\right)$ is

Options :

1. ✘ π

2. ✘ 2π

3. ✔ 3π

4. ✘ $\frac{3\pi}{2}$

Question Number : 11 Question Id : 1592075426 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\cosh x = \frac{5}{4}$, then $\coth 2x =$

Options :

1. ✔ $\frac{17}{15}$

2. ✘ $\frac{5}{3}$

3. ✘ $\frac{15}{17}$

4. ✘ $\frac{3}{5}$

Question Number : 12 Question Id : 1592075427 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 modulus of the complex number $\frac{2+i}{3-i}$ is

Options :

1. ✘ $\frac{1}{\sqrt{3}}$

2. ✘ 1

3. ✘ $\sqrt{2}$

4. ✔ $\frac{1}{\sqrt{2}}$

Question Number : 13 Question Id : 1592075428 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 sides of a triangle are 13, 7 and 8, then the greatest angle of the triangle is

Options :

1. ✘ $\frac{\pi}{3}$

2. ✘ $\frac{\pi}{2}$

3. ✔ $\frac{2\pi}{3}$

4. ✘ $\frac{3\pi}{2}$

Question Number : 14 Question Id : 1592075429 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 angles of a triangle are in the ratio of 1: 4: 5 , then the ratio of the greatest side to the smallest side is

Options :

1. ✓ $4:\sqrt{5} - 1$

2. ✗ $5:4$

3. ✗ $\sqrt{5}-1:4$

4. ✗ $4:\sqrt{5}$

Question Number : 15 Question Id : 1592075430 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Number of tangents drawn at a point of the circle is

Options :

1. ✓ One

2. ✗ Two

3. ✗ Three

4. ✗ Many

Question Number : 16 Question Id : 1592075431 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 minimum value of $f(x) = |x - 2| + |x + 2|$ is

Options :

1. ✘ 0

2. ✘ 2

3. ✔ 4

4. ✘ 8

Question Number : 17 Question Id : 1592075432 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 eccentricity of ellipse $\frac{x^2}{16} + \frac{y^2}{4} = 1$ is

Options :

1. ✘ $2\sqrt{3}$

2. ✘ $\sqrt{2}$

3. ✔

$$\frac{\sqrt{3}}{2}$$

4. ✘ $\sqrt{3}$

Question Number : 18 Question Id : 1592075433 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \rightarrow \infty} \left(1 + \frac{2}{x}\right)^x =$$

Options :

1. ✘ e

2. ✔ e^2

3. ✘ e^3

4. ✘ e^4

Question Number : 19 Question Id : 1592075434 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\frac{d}{dx}(\sqrt{\sin \sqrt{x}}) =$$

Options :

1. ✘ $\frac{1 \sin \sqrt{x}}{4 \sqrt{x}}$

2. ✘ $\frac{1 \cos \sqrt{x}}{6 \sqrt{x}}$

3. ✔ $\frac{1 \cos \sqrt{x}}{4 \sqrt{x} \sqrt{\sin \sqrt{x}}}$

4. ✘ $\frac{1 \cos \sqrt{x}}{2 \sqrt{\sin \sqrt{x}}}$

Question Number : 20 Question Id : 1592075435 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $x = 2\cos t - \cos 2t$, $y = 2\sin t - \sin 2t$, then $\frac{dy}{dx}$ at $t = \frac{\pi}{6}$ is

Options :

1. ✘ 0

2. ✔ 1

3. ✘ $\sqrt{3}$

4. ✘ $\frac{1}{\sqrt{3}}$

Question Number : 21 Question Id : 1592075436 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $y = \cos(x + y)$, then $\frac{dy}{dx} =$

Options :

1. ✘ $\frac{1 - \sin(x + y)}{\cos x + \cos y}$

2. ✘ $\frac{1 + \sin(x + y)}{\cos x - \cos y}$

3. ✘ $\frac{\cos(x + y)}{1 + \sin(x + y)}$

4. ✔ $\frac{-\sin(x + y)}{1 + \sin(x + y)}$

Question Number : 22 Question Id : 1592075437 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 of tangent to the curve $xy = 16$ at P (4, 4) is

Options :

1. ✘ $x + y = 2$

2. ✘ $x + y = 4$

3. ✔ $x + y = 8$

4. ✘ $x + y = 16$

Question Number : 23 Question Id : 1592075438 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum value of $f(x) = \left(\frac{1}{x}\right)^x$ is

Options :

1. ✔ $e^{1/e}$

2. ✘ $\left(\frac{1}{e}\right)^e$

3. ✘ $\left(\frac{1}{e}\right)^{\frac{1}{e}}$

4. ✘ e^e

Question Number : 24 Question Id : 1592075439 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $u(x, y, z) = \log(x^3 + y^3 + z^3 - 3xyz)$, then $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} =$

Options :

1. ✘ $\frac{1}{x+y+z}$

2. ✘ $\frac{9}{x+y+z}$

3. ✘ $\frac{6}{x+y+z}$

4. ✔ $\frac{3}{x+y+z}$

Question Number : 25 Question Id : 1592075440 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

$$\text{If } u(x, y) = \log\left(\frac{x^4 + y^4}{x + y}\right), \text{ then } x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} =$$

Options :

1. ✘ 4

2. ✔ 3

3. ✘ 2

4. ✘ 1

Question Number : 26 Question Id : 1592075441 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

$$\int \frac{\sin(\tan^{-1} x)}{1+x^2} dx =$$

Options :

1. ✔ $-\cos(\tan^{-1} x) + c$

2. ✘ $\cos(\tan^{-1} x) + c$

3. ✘ $\sin(\tan^{-1}x) + c$

4. ✘ $-\sin(\tan^{-1}x) + c$

Question Number : 27 Question Id : 1592075442 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{1}{e^{2x} + e^x} dx$$

Options :

1. ✘ $\log(e^x + 1) - e^{-x} + c$

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

3. ✔ $\log(e^{-x} + 1) - e^{-x} + c$

4. ✘ $\log\left(\frac{e^{-x}}{e^x + 1}\right) + e^{-x} + c$

Question Number : 28 Question Id : 1592075443 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 the integral $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin |x| dx$ is

Options :

1. ✘ 0

2. ✘ 1

3. ✘ -2

4. ✔ 2

Question Number : 29 Question Id : 1592075444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 curves $y = x^2 - 4$ and $y = 1 - x^2$ together enclose an area of

Options :

1. ✘ $10\sqrt{10}$

2. ✘ $5\sqrt{10}$

3. ✔

$$\frac{10\sqrt{10}}{3}$$

4. ✘ $\frac{10\sqrt{10}}{9}$

Question Number : 30 Question Id : 1592075445 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 RMS value of the $f(x) = \sqrt{\log x}$ on $[1, e]$ is

Options :

1. ✘ $\sqrt{\frac{e}{e-1}}$

2. ✘ $\sqrt{\frac{e-1}{e}}$

3. ✔ $\frac{1}{\sqrt{e-1}}$

4. ✘ $\sqrt{e-1}$

Question Number : 31 Question Id : 1592075446 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 the integral $\int_0^1 \frac{1}{1+x} dx$, using Trapezoidal rule with $h = 0.5$, is

Options :

0.69450

1. ✘

0.70834

2. ✔

0.67435

3. ✘

0.68500

4. ✘

Question Number : 32 Question Id : 1592075447 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 velocity of a body as a function of time is given as

$v(t) = 5e^{-2t} + 4$, where t is in seconds and v is in m/s. The acceleration when $t = 5$ in m/s^2 is

Options :

$-10e^{-10}$

1. ✔

2. ✘ $-20e^{-10}$

3. ✘ $-30e^{-10}$

4. ✘ $-40e^{-10}$

Question Number : 33 Question Id : 1592075448 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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

$$\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 + x = 0 \text{ respectively are}$$

Options :

1. ✘ 3 and 3

2. ✘ 2 and 2

3. ✘ 2 and 3

4. ✔ 2 and 1

Question Number : 34 Question Id : 1592075449 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 general solution of $ye^x dx + (y-1)dy = 0$ is

Options :

1. ✘ $e^x - \log y = c$

2. ✘ $e^x - y = c$

3. ✘ $e^x - y - \log x = c$

4. ✔ $e^x + y - \log y = c$

Question Number : 35 Question Id : 1592075450 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\sin x \frac{dy}{dx} + y \cos x = x \sin x$, then $(y-1)\sin x =$

Options :

1. ✘ $c - x \sin x$

2. ✘ $c + x \sin x$

3. ✓ $c - x \cos x$

4. ✗ $c + x \cos x$

Question Number : 36 Question Id : 1592075451 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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

$$(e^y + 1)\cos x \, dx + e^y \sin x \, dy = 0 \text{ is}$$

Options :

1. ✓ $(e^y + 1)\sin x = c$

2. ✗ $e^x \sin x = c$

3. ✗ $(e^x + 1)\cos x = c$

4. ✗ $(e^y - 1)\sin x = c$

Question Number : 37 Question Id : 1592075452 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 differential equation satisfied by $y = \frac{A}{x} + B$, (A,B are parameters) is

Options :

1. ✘ $x^2 y_1 = y$

2. ✘ $xy_1 + 2y_2 = 0$

3. ✔ $xy_2 + 2y_1 = 0$

4. ✘ $x^2 y_1 - 2y = 0$

Question Number : 38 Question Id : 1592075453 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 general solution of $\log\left(\frac{dy}{dx}\right) = 3x + 3y$ is

Options :

1. ✘ $e^{3x} + e^{3y} = c$

2. ✘ $e^{-3x} + e^{-3y} = c$

3. ✘ $e^{-3x} + e^{3y} = c$

4. ✔ $e^{3x} + e^{-3y} = c$

Question Number : 39 Question Id : 1592075454 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $y dx + y^2 dy = x dy, x \in \mathbb{R}, y > 0$ and $y(1) = 1$, then $y(-3) =$

Options :

1. ✔ 3

2. ✘ 2

3. ✘ 1

4. ✘ 5

Question Number : 40 Question Id : 1592075455 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L\{\sin 2t - 2t \cos 2t\} =$$

Options :

1. ✘ $\frac{2}{(s^2 + 4)^2}$

2. ✘ $\frac{8}{(s^2 + 4)^2}$

3. ✔ $\frac{16}{(s^2 + 4)^2}$

4. ✘ $\frac{32}{((s^2 + 4))^2}$

Question Number : 41 Question Id : 1592075456 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L\{\cosh 3t \cos 3t\} =$$

Options :

1. ✘ $\frac{1}{2} \left[\frac{s-6}{s^2 - 3s + 18} + \frac{s+6}{s^2 + 3s + 18} \right]$

2. ✔

$$\frac{1}{2} \left[\frac{s-3}{s^2-6s+18} + \frac{s+3}{s^2+6s+18} \right]$$

3. ✘

$$\frac{1}{2} \left[\frac{s-4}{s^2-4s+9} + \frac{s-3}{s^2-6s+9} \right]$$

4. ✘

$$\frac{1}{2} \left[\frac{s-6}{s^2+9} + \frac{s+6}{3s^2+9} \right]$$

Question Number : 42 Question Id : 1592075457 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L \left\{ \frac{1 - \cos 3t}{t} \right\} =$$

Options :

1. ✘

$$\frac{1}{2} \log \left(\frac{s^2+9}{s^2+3} \right)$$

2. ✘

$$\frac{1}{2} \log \left(\frac{s}{s+9} \right)$$

3. ✘

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

4.

✓ $\frac{1}{2} \log\left(\frac{s^2+9}{s^2}\right)$

Question Number : 43 Question Id : 1592075458 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Laplace transform of $f(t) = t \sin t$ is $F(s)$ where $F(s) =$

Options :

1. ✘ $\frac{s}{(1+s^2)^2}$

2. ✘ $\frac{2s}{(1+s^2)^2}$

3. ✘ $\frac{2s}{1+s^2}$

4. ✓ $\frac{s}{1+s^2}$

Question Number : 44 Question Id : 1592075459 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\text{If } L^{-1}\left\{\frac{2s^2-1}{(s^2+1)(s^2+4)}\right\} = f(t), \text{ then } f\left(\frac{\pi}{2}\right) =$$

Options :

1. ✘ 1

2. ✔ -1

3. ✘ 2

4. ✘ -2

Question Number : 45 Question Id : 1592075460 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_0^{\infty} \frac{e^{-3t} - e^{-6t}}{t} dt =$$

Options :

1. ✘ log 6

2. ✘ log 3

3. ✔ log 2

4. ✘ $\log 18$

Question Number : 46 Question Id : 1592075461 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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

$$y'' - 2y' + 2y = 0 \text{ satisfying } y(0) = y'(0) = 1 \text{ is}$$

Options :

1. ✘ $e^t + e^{-2t} \cos t$

2. ✘ $e^t + \cos t$

3. ✘ $e^t \sin t$

4. ✔ $e^t \cos t$

Question Number : 47 Question Id : 1592075462 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 the Fourier coefficient a_0 in the Fourier series
expansion of $f(x) = x \sin x$ in $(0, 2\pi)$ is

Options :

1. ✘ 2

2. ✔ -2

3. ✘ 1

4. ✘ -1

Question Number : 48 Question Id : 1592075463 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 b_1, b_2 are Fourier coefficients in the Fourier series expansion of
 $f(x) = |\sin x|$ in $(-\pi, \pi)$, then $b_1 + b_2 =$

Options :

1. ✘ $\frac{2}{\pi}$

2. ✘ $-\frac{2}{\pi}$

3. ✔ 0

4. ✘ $\frac{4}{\pi}$

Question Number : 49 Question Id : 1592075464 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

At $x = 0$, the Fourier series of $f(x) = \begin{cases} \pi + x & \text{if } -\pi < x < 0 \\ 0 & \text{if } 0 \leq x < \pi \end{cases}$
converges to

Options :

1. ✘ π

2. ✘ 0

3. ✘ $-\pi$

4. ✔ $\frac{\pi}{2}$

Question Number : 50 Question Id : 1592075465 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $x = \frac{\pi}{2} + \sum_{n=1}^{\infty} a_n \cos nx$, $0 < x < \pi$, then the value of a_n is

Options :

$$\frac{2}{\pi n^2} [(-1)^n - 1]$$

1. ✓

$$\frac{2}{\pi n^2}$$

2. ✗

0

3. ✗

$$\frac{4}{\pi n^2}$$

4. ✗

Physics

Section Id :	159207107
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 : 159207128
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 51 Question Id : 1592075466 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 is force, x is distance and t is time, then the dimensions
of $\frac{b}{a}$ in the equation $F = \frac{b-x}{at}$ are same as that of

Options :

1. ✘ Velocity
2. ✘ Force
3. ✔ Momentum
4. ✘ Time

Question Number : 52 Question Id : 1592075467 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 static friction is

Options :

1. ✘ Equal to the dynamic friction
2. ✔ Always greater than the dynamic friction
3. ✘ Always less than the dynamic friction
4. ✘ Sometimes less than and sometimes equal to dynamic friction

Question Number : 53 Question Id : 1592075468 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 vector A points vertically upward and B points towards north, the vector product of $B \times A$ is

Options :

1. ✘ Along west
2. ✔ Along east
3. ✘ Vertically downward

4. ✘ No direction

Question Number : 54 Question Id : 1592075469 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Vector A has magnitude $9/2$ unit towards north, the direction
of vector $-6A$ and $8A$.

Options :

1. ✘ -27 units and 36 units towards south

2. ✘ -27 units and 36 units towards north

3. ✔ -27 units towards south and 36 units towards north

4. ✘ -27 units towards west and 36 units towards east

Question Number : 55 Question Id : 1592075470 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Angular displacement of a particle is described as

$\theta = 2t + 3t^2$, the angular velocity (in rad/sec) at $t = 2$ sec is

Options :

1. ✘ 2

2. ✘ 6

3. ✘ 16

4. ✔ 14

Question Number : 56 Question Id : 1592075471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 acceleration of a car moving on a straight road with a constant velocity of 40 m/sec is

Options :

1. ✘ 30 m/s²

2. ✘ 20 m/s²

3. ✔ 0 m/s²

4. ✘ 40 m/s^2

Question Number : 57 Question Id : 1592075472 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 wires of same length and made with same material are stretched with the same force. If the radii of the wires are in the ratio 1:3, then the ratio of their elongations is

Options :

1. ✘ 1:3

2. ✔ 9:1

3. ✘ 3:1

4. ✘ 1:9

Question Number : 58 Question Id : 1592075473 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Along a stream line flow of fluid

Options :

The velocity of all fluid particles at a given instant is constant.

1. ✘

The velocity of a fluid particle remains constant.

2. ✘

The velocity of all fluid particles crossing a given position is constant.

3. ✔

The speed of a fluid particle remains constant.

4. ✘

Question Number : 59 Question Id : 1592075474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 gives the relation between C_p and C_v

Options :

1. ✔ $C_p - C_v = R$

2. ✘ $C_p = C_v$

3. ✘ $C_p - C_v > R$

4. ✘ $C_p / C_v = R$

Question Number : 60 Question Id : 1592075475 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Compressed air coming out of punctured football becomes cooler because.

Options :

1. ✔ Adiabatic expansion

2. ✘ Isothermal expansion

3. ✘ Energy dissipation

4. ✘ See-beck effect

Question Number : 61 Question Id : 1592075476 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 work done (Joule) by a 1 mole of a perfect gas when it expands isothermally to double its volume. The initial temperature of the gas is 0°C and $R = 8.31 \times 10^7 \text{ erg} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$. ($\log_{10} 2 = 0.3010$)

Options :

1. ✘ 15.72 joule
2. ✘ 157.2 joule
3. ✔ 1572 joule
4. ✘ 1.572 joule

Question Number : 62 Question Id : 1592075477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 energy possessed by an object, by virtue of its motion is termed as

Options :

1. ✘ Potential Energy
2. ✔ Kinetic Energy
3. ✘ Gravitational Energy
4. ✘ Nuclear Energy

Question Number : 63 Question Id : 1592075478 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At what speed the observer must move towards a stationary source so that the apparent frequency will be double the original frequency of the source? The velocity of sound is V .

Options :

1. ✓ V

2. ✗ $\frac{V}{2}$

3. ✗ $2V$

4. ✗ $\frac{V}{4}$

Question Number : 64 Question Id : 1592075479 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 equation of a particle executes SHM is given by $y = a \sin \omega t + b \cos \omega t$, the resultant amplitude is

Options :

1. ✓ $(a^2 + b^2)^{1/2}$

2. ✗ $(a + b)$

3. ✗ $(a + b)^{1/2}$

4. ✗ Zero

Question Number : 65 Question Id : 1592075480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 periodic time (T) of simple pendulum is observed for different lengths (L). If a graph of $\log_{10}L$ against $\log_{10}T$ is plotted, the slope of the graph will be

Options :

1. ✗ $1/2$

2. ✗ $-1/2$

3. ✗ $(2)^{1/2}$

4. ✓ 2

Question Number : 66 Question Id : 1592075481 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum velocity of a particle performing SHM is 0.12 m/sec, if its maximum acceleration is 0.48 m/sec^2 , then its time period (sec) is

Options :

1. ✗ 1.54

2. ✗ 1.59

3. ✓ 1.57

4. ✗ 1.75

Question Number : 67 Question Id : 1592075482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 minimum energy required to take out an electron from an alkali metal is called

Options :

1. ✘ Kinetic Energy
2. ✘ Potential Energy
3. ✘ Gibbs Free Energy
4. ✔ Work Function

Question Number : 68 Question Id : 1592075483 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

N_1 and N_2 be the number of atoms in the ground and excited states. Then the condition for population inversion is

Options :

1. ✘ $N_1 = N_2$
2. ✘ $N_1 > N_2$
3. ✔ $N_2 > N_1$
4. ✘ $N_2 = 0$

Question Number : 69 Question Id : 1592075484 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 magnets have magnetic moments in the ratio 2:1. Their pole strengths are in the ratio 1:2. Then the ratio of their magnetic lengths is

Options :

1. ✘ 1:4

2. ✘ 1:1

3. ✘ 2:3

4. ✔ 4:1

Question Number : 70 Question Id : 1592075485 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 susceptibility of para magnetic material is

Options :

1. ✔ Positive and small

2. ✘ Positive and large

3. ✘ Negative

4. ✘ Zero

Question Number : 71 Question Id : 1592075486 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

There are three equal resistors, how many different combinations of these resistors are possible.

Options :

1. ✔ Four

2. ✘ Two

3. ✘ Three

4. ✘ Five

Question Number : 72 Question Id : 1592075487 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 the perfect diamagnetic?

Options :

1. ✘ Any conductor
2. ✘ P-Type semiconductor
3. ✘ N-Type semiconductor
4. ✔ Superconductor

Question Number : 73 Question Id : 1592075488 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 current in the PN junction diode during the reverse bias is
the result of

Options :

1. ✘ Majority carriers
2. ✔ Minority carriers
- 3.

✘ Both majority and minority carriers

4. ✘ Only electrons

Question Number : 74 Question Id : 1592075489 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 has maximum energy gap?

Options :

1. ✓ Insulators

2. ✘ Superconductors

3. ✘ Metals

4. ✘ Semiconductors

Question Number : 75 Question Id : 1592075490 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Fermi energy level for p-type
extrinsic semiconductor?

Options :

1. ✘ At middle of the band gap
2. ✔ Close to valence band
3. ✘ Close to conduction band
4. ✘ Fermi level does not exist

Chemistry

Section Id :	159207108
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 :	159207129
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 1592075491 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Azimuthal and principal quantum numbers respectively for an electron that is present in 4d orbital

Options :

1. ✘ 1 and 4

2. ✘ 4 and 1

3. ✔ 2 and 4

4. ✘ 4 and 2

Question Number : 77 Question Id : 1592075492 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 molecule has ionic bonding?

Options :

1. ✘ CH_3Cl

2. ✘ CH_3OH

3. ✘ CO_2

4. ✔ MgO

Question Number : 78 Question Id : 1592075493 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Oxidation number of carbon in formaldehyde?

Options :

1. ✘ -4

2. ✘ +4

3. ✔ 0

4. ✘ +2

Question Number : 79 Question Id : 1592075494 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Molarity of a solution containing 9 g of glucose (molar mass 180)
in 500 g of water is

Options :

1. ✘ 0.5

2. ✔ 0.1

3. ✘ 0.2

4. ✘ 1.0

Question Number : 80 Question Id : 1592075495 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Prussian blue colloid is

Options :

1. ✘ As_2S_3

2. ✘ $\text{Fe}(\text{OH})_3$

3. ✔ $\text{KFe}[\text{Fe}(\text{CN})_6]$

4. ✘ FeCl_3

Question Number : 81 Question Id : 1592075496 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 anions is the strongest base?

Options :

1. ✓ ClO^-

2. ✗ ClO_2^-

3. ✗ ClO_3^-

4. ✗ ClO_4^-

Question Number : 82 Question Id : 1592075497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 pH of 10^{-9} molar solution of HCl is

Options :

1. ✗ 9

-9

2. ✗

3. ✗ Between 7 & 8

4. ✓ Between 6 & 7

Question Number : 83 Question Id : 1592075498 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 a Renewable energy source?

Options :

1. ✘ Petroleum

2. ✘ Coal

3. ✘ Natural gas

4. ✓ Wind mills

Question Number : 84 Question Id : 1592075499 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 gas is responsible for depletion of ozone layer
in the atmosphere?

Options :

1. ✘ CH_2Cl_2

2. ✔ CF_2Cl_2

3. ✘ CH_2F_2

4. ✘ CO_2

Question Number : 85 Question Id : 1592075500 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 exhausted permutit is regenerated by percolating through it a solution of

Options :

1. ✘ Calcium chloride

2. ✘ Zinc chloride

3. ✔ Sodium chloride

4. ✘ Magnesium chloride

Question Number : 86 Question Id : 1592075501 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During reverse osmosis:

Options :

1. ✘ Dissolved salts are pushed out through semipermeable membrane
2. ✘ Only dissolved ionic salts are pushed out through the semipermeable membrane
3. ✔ Pure water is pushed out through semipermeable membrane
4. ✘ Both water and dissolved salts are pushed out through the semipermeable membrane

Question Number : 87 Question Id : 1592075502 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a weak electrolyte?

Options :

1. ✘ HCl
2. ✘ NaOH

3. ✓ CH_3COOH

4. ✗ H_2SO_4

Question Number : 88 Question Id : 1592075503 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 2 amperes of current is passed through CuSO_4 solution for 10 minutes, the amount of Cu deposited is (Atomic weight of Cu = 63.5 g)

Options :

1. ✗ 3.94 g

2. ✓ 0.394 g

3. ✗ 0.788 g

4. ✗ 7.88 g

Question Number : 89 Question Id : 1592075504 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Nichrome alloy is

Options :

1. ✘ Ni:68%, Cu:27%, Fe:5%

2. ✔ Ni:78%, Cr:20%, Fe:2%

3. ✘ Ni:40%, Cu:60%

4. ✘ Al:95%, Cu:2%, Ni:1%

Question Number : 90 Question Id : 1592075505 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 froth flotation method, pine oil

Options :

1. ✘ Increases the surface tension of the solution

2. ✘ Acts as a collector

3. ✘ Does not affect the surface tension of the solution

4. ✔ Decreases the surface tension of the solution

Question Number : 91 Question Id : 1592075506 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During electro chemical corrosion in acidic environment

Options :

1. ✓ Hydrogen evolution takes place
2. ✗ Oxygen evolution takes place
3. ✗ Oxygen absorption occurs
4. ✗ Hydrogen absorption takes place

Question Number : 92 Question Id : 1592075507 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 process of coating of Iron with Zinc metal is known as

Options :

1. ✓ Galvanizing
2. ✗

Sherardizing

3. ✘ Zincing

4. ✘ Tinning

Question Number : 93 Question Id : 1592075508 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Bakelite is prepared by the condensation polymerization of

Options :

1. ✔ Phenol and formaldehyde

2. ✘ Urea and formaldehyde

3. ✘ Phenol and acetaldehyde

4. ✘ Urea and acetone

Question Number : 94 Question Id : 1592075509 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 trade name of the polymer coated on non-stick utensils is

Options :

1. ✘ Dacron

2. ✘ Orlon

3. ✔ Teflon

4. ✘ Nylon

Question Number : 95 Question Id : 1592075510 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Octane number of a petrol that consists 20:80 mixture of n-heptane and 2,2,4-trimethyl pentane is

Options :

1. ✘ 100

2. ✘ Zero

3. ✔ 80

4. ✘ 20

Question Number : 96 Question Id : 1592075511 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Producer gas is a mixture of

Options :

1. ✘ $\text{CO}_2 + \text{H}_2$

2. ✔ $\text{CO} + \text{N}_2$

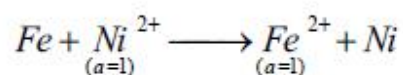
3. ✘ $\text{CO} + \text{CH}_4$

4. ✘ $\text{CH}_4 + \text{H}_2$

Question Number : 97 Question Id : 1592075512 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 following cell reaction



The EMF of the cell at 298 K is ($\overset{\circ}{E}_{\text{Fe}^{2+}/\text{Fe}} = -0.440 \text{ V}$; $\overset{\circ}{E}_{\text{Ni}^{2+}/\text{Ni}} = -0.250 \text{ V}$)

Options :

1. ✘ -0.190 V

2. ✓ + 0.190 V

3. ✗ + 0.690 V

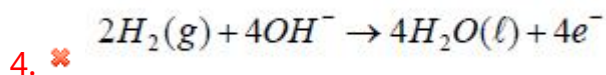
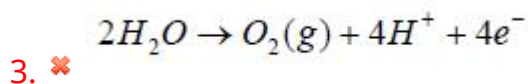
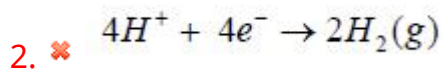
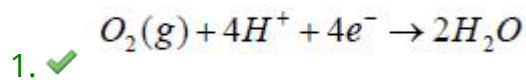
4. ✗ - 0.690 V

Question Number : 98 Question Id : 1592075513 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Hydrogen-Oxygen fuel cell, the reaction at the cathode is

Options :



Question Number : 99 Question Id : 1592075514 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 statements is true about SMOG?

Options :

1. ✘ SMOG is derived from the fog
2. ✘ SMOG is derived from smoke
3. ✘ SMOG is derived from water vapour
4. ✔ SMOG is derived from both fog and smoke

Question Number : 100 Question Id : 1592075515 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 do BOD and COD stand for?

Options :

1. ✔ Biological Oxygen Demand and Chemical Oxygen Demand respectively
2. ✘ Chemical Oxygen Demand and Biological Oxygen Demand respectively
3. ✘ Botanical Oxygen Demand and Chemical Oxygen Demand respectively

4. ✖ Basic Oxygen Demand and Chemical Oxygen Demand respectively

Electronics and Communication Engineering

Section Id :	159207109
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 :	159207130
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 1592075516 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 current equation of $p-n$ junction diode is

Options :

$$I_0 = I(e^{\frac{V}{\eta V_T}} - 1)$$

1. ✖

$$I = I_0 \left(e^{\left(\frac{V}{\eta V_T}\right)} - 1 \right)$$

2. ✓

$$I = I_0 \left(e^{\left(\frac{\eta V_T}{V}\right)} - 1 \right)$$

3. ✘

$$I = I_0 \left(e^{\left(\frac{\eta V_T}{V}\right)} + 1 \right)$$

4. ✘

Question Number : 102 Question Id : 1592075517 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 reverse bias is decreased, the depletion region narrows, decreasing the separation between the P-type and N-type regions, its capacitance.

Options :

Decreases

1. ✘

Increases

2. ✓

Remains constant

3. ✘

Becomes zero

4. ✘

Question Number : 103 Question Id : 1592075518 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 feedback topology for which input impedance and output impedance will increase is

Options :

1. ✘ Voltage shunt feedback

2. ✘ Voltage series feedback

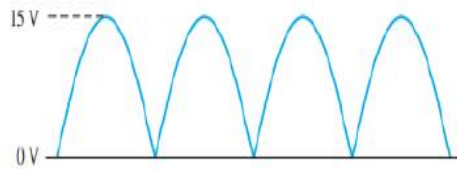
3. ✔ Current series feedback

4. ✘ Current shunt feedback

Question Number : 104 Question Id : 1592075519 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 average value of the following full-wave rectifier voltage waveform shown in the figure below is ____ V.



Options :

1. ✘ 15

2. ✘ 2

3. ✘ 3.414

4. ✔ 9.55

Question Number : 105 Question Id : 1592075520 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 stability factor of a transistor biasing circuit is

Options :

1. ✘ $\frac{1-\beta}{1+\beta\frac{dI_C}{dI_B}}$

2. ✔

$$\frac{1+\beta}{1-\beta \frac{dI_B}{dI_C}}$$

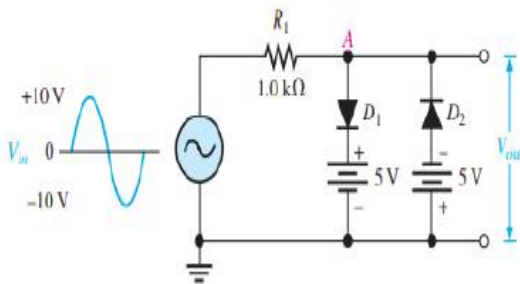
3. ✘ $\frac{\beta}{1-\beta \frac{dI_C}{dI_B}}$

4. ✘ $\frac{\beta}{1+\beta \frac{dI_B}{dI_C}}$

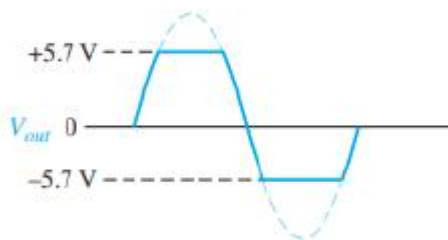
Question Number : 106 Question Id : 1592075521 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the circuit shown below figure with silicon diodes, determine the output voltage waveform.

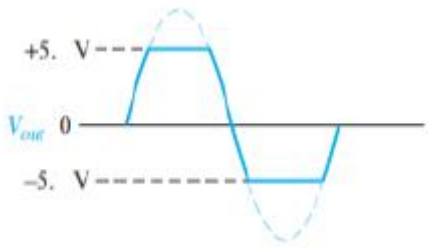


Options :

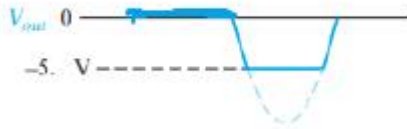


1. ✔

2. ✘



3. ✘

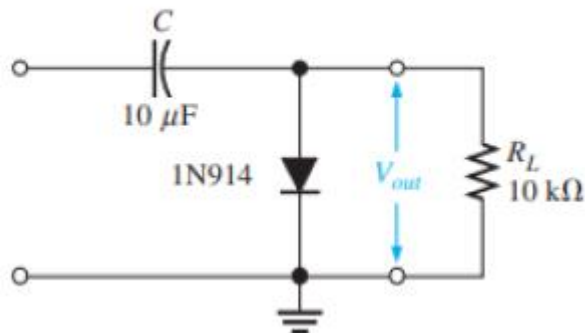


4. ✘

Question Number : 107 Question Id : 1592075522 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Circuit shown in the following figure is a



Options :

Half wave Rectifier

1. ✘

2. ✘ Positive Clipper

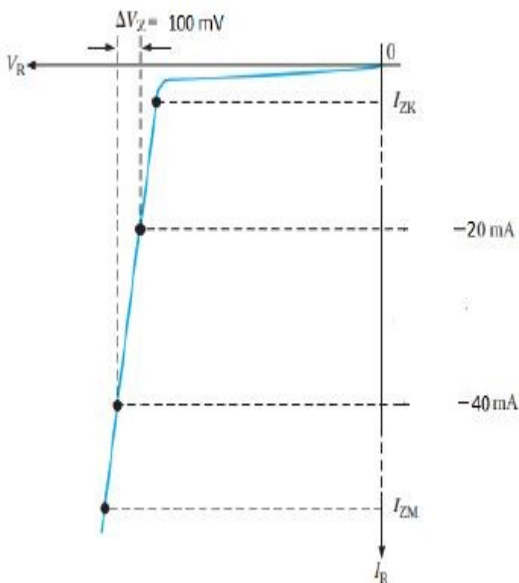
3. ✘ Negative Clamper

4. ✔ Positive Clamper

Question Number : 108 Question Id : 1592075523 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 zener diode exhibits the following characteristics shown in the below figure.



The zener impedance will be

Options :

1. ✘ $2\ \Omega$

2. ✘ $100\ \Omega$

3. ✘ 40Ω

4. ✔ 5Ω

Question Number : 109 Question Id : 1592075524 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 ideal value of efficiency of Class- B power amplifier is

Options :

1. ✘ 25 %

2. ✘ 50 %

3. ✔ 78.5 %

4. ✘ 72.6 %

Question Number : 110 Question Id : 1592075525 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 List I with List II

List-I

- a. Monostable multivibrator
- b. Astable multivibrator
- c. Free running multivibrator
- d. Bistable multivibrator

List-II

- 1. No stable state
- 2. One stable state
- 3. Two stable states
- 4. Alternative high and low output

Options :

1. ✘ 2-a 3-b 1-c 4-d

2. ✘ 3-a 2-b 4-c 1-d

3. ✘ 1-a 3-b 4-c 2-d

4. ✔ 2-a 1-b 4-c 3-d

Question Number : 111 Question Id : 1592075526 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 CE amplifier, the collector resistance is $6\text{ k}\Omega$ and load resistance is $3\text{ k}\Omega$. The a.c. load resistance is

Options :

1. ✘ $9\text{ k}\Omega$

2. ✘ $6\text{ k}\Omega$

3. ✘ 3 kΩ

4. ✔ 2 kΩ

Question Number : 112 Question Id : 1592075527 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 List I with List II

List-I (efficiency)	List -II (class of amplifier)
a. <50%	1. A
b. >50%	2. AB
c. 78.5%	3. B
d. 100%	4. C

Options :

1. ✘ 2-a 1-b 4-c 3-d

2. ✘ 1-a 3-b 4-c 2-d

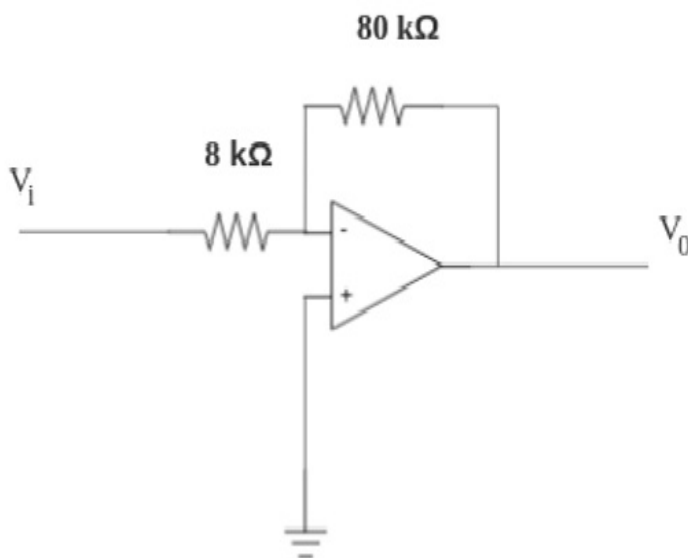
3. ✔ 1-a 2-b 3-c 4-d

4. ✘ 4-a 1-b 2-c 3-d

Question Number : 113 Question Id : 1592075528 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Refer to the given figure. The op amp has unity gain bandwidth of 6MHz.
The bandwidth of circuit is



Options :

1. ✘ 500 KHz
2. ✔ 600 KHz
3. ✘ 300 KHz
4. ✘ 400 KHz

Question Number : 114 Question Id : 1592075529 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 wideband pass filter has $f_L = 50\text{Hz}$ and $f_H = 5\text{KHz}$ then f_0 of the filter is

Options :

1. ✘ 50Hz

2. ✔ 500 Hz

3. ✘ 5KHz

4. ✘ 5Hz

Question Number : 115 Question Id : 1592075530 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 fixed bias circuit, the stability factor is

Options :

1. ✘ $\frac{1}{\beta+1}$

2. ✘ 1

3. ✓ $\beta + 1$

4. ✗ β

Question Number : 116 Question Id : 1592075531 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 differential voltage gain and the common mode voltage gain of a differential amplifier are 48 dB and 2 dB respectively, then its common mode rejection ratio is

Options :

1. ✗ 23 dB

2. ✗ 25 dB

3. ✓ 46 dB

4. ✗ 50 dB

Question Number : 117 Question Id : 1592075532 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 ripple factor in an ideal regulator is

Options :

1. ✓ Zero

2. ✗ 1

3. ✗ 0.5

4. ✗ 0.1

Question Number : 118 Question Id : 1592075533 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Barkhausen criterion for oscillation stability is

Options :

1. ✗ $|A\beta| = 0$

2. ✓ $|A\beta| = 1$

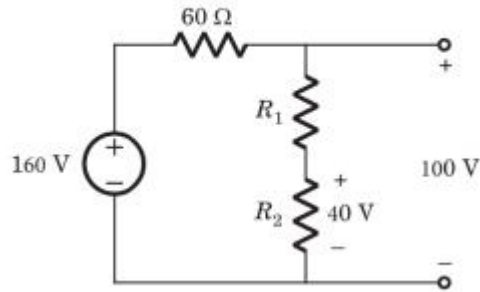
3. ✗ $|A\beta| = \frac{1}{2}$

4. ✗ $|A\beta| = \infty$

Question Number : 119 Question Id : 1592075534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 value of R_1 in the Figure shown below



Options :

1. ✘ 25 Ω

2. ✔ 60 Ω

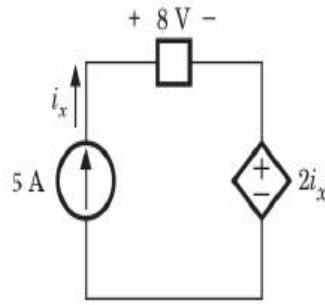
3. ✘ 100 Ω

4. ✘ 2000 Ω

Question Number : 120 Question Id : 1592075535 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 circuit of Figure shown below, the power through the dependent source is

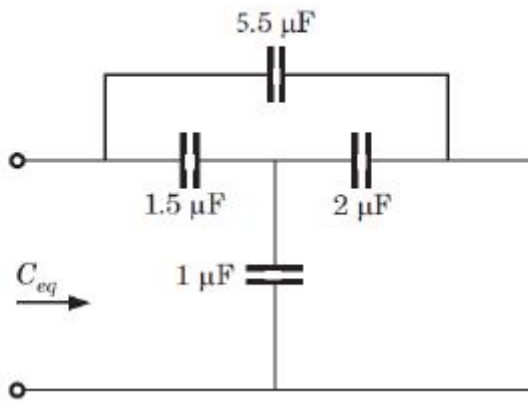


Options :

1. ✘ Supplies 50 W
2. ✔ Absorbs 50 W
3. ✘ Supplies 32 W
4. ✘ Absorbs 32 W

Question Number : 121 Question Id : 1592075536 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Calculate the equivalent capacitance in Figure.



Options :

1. ✘ $3.5\ \mu\text{F}$

2. ✔ $2.1\ \mu\text{F}$

3. ✘ $4.4\ \mu\text{F}$

4. ✘ $5.6\ \mu\text{F}$

Question Number : 122 Question Id : 1592075537 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 number of branches in a network is 'b', the number of nodes is 'n' and the number of dependent loops is 'l', then the number of independent node equations will be

Options :

1. ✘ $n+l-1$

2. ✘ b-1

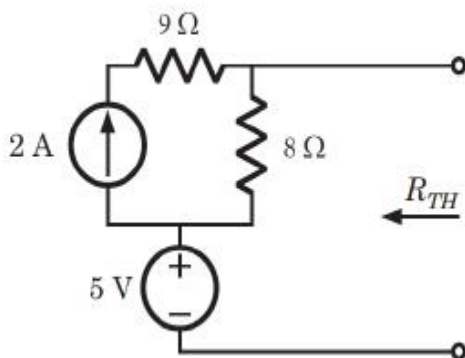
3. ✘ b-n+1

4. ✔ n-1

Question Number : 123 Question Id : 1592075538 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 value of R_{TH} for the circuit shown in the below figure



Options :

1. ✘ 3 Ω

2. ✘ 12 Ω

3. ✔ 8 Ω

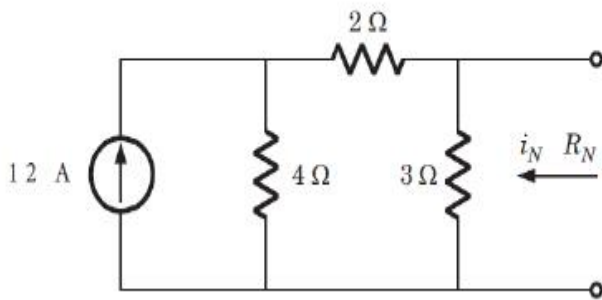
4.

✘ 6Ω

Question Number : 124 Question Id : 1592075539 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate the Norton's current and resistance for the given below figure



Options :

1. ✘ 4 A, 2 Ω

2. ✘ 2 A, 2 Ω

3. ✘ 2 A, 9 Ω

4. ✔ 8 A, 2 Ω

Question Number : 125 Question Id : 1592075540 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Q - factor for the parallel RLC resonance circuit is

Options :

1. ✘ $\frac{1}{R} \sqrt{\frac{C}{L}}$

2. ✘ $R \sqrt{\frac{L}{C}}$

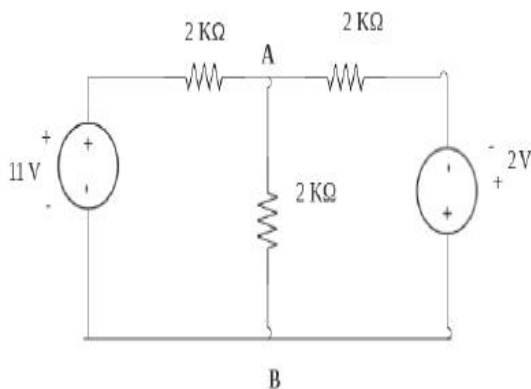
3. ✔ $R \sqrt{\frac{C}{L}}$

4. ✘ $\frac{1}{R} \sqrt{\frac{L}{C}}$

Question Number : 126 Question Id : 1592075541 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Voltage across $2\text{K}\Omega$ resistor which is in the nodes A and B of the network shown in the given figure is



Options :

1. ✘ 2V

2. ✔ 3V

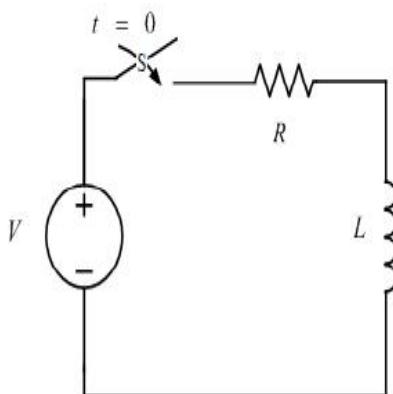
3. ✘ 4V

4. ✘ 8V

Question Number : 127 Question Id : 1592075542 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 given circuit, S was initially open. Voltage Source $V = 18V$, resistor R is of 1Ω . At time $t = 0$, S is closed. When current through the inductor is $6A$, then rate of change of current through the resistor is $6A/S$. The value of inductor (L) would be _____



Options :

1. ✘ 1 H

2. ✓ 2 H

3. ✗ 3 H

4. ✗ 4 H

Question Number : 128 Question Id : 1592075543 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 lossless line will be distortion less if the phase shift

Options :

1. ✗ Is constant with frequency

2. ✓ Varies directly with frequency

3. ✗ Has nothing to do with distortion on a lossless line

4. ✗ Varies inversely with frequency

Question Number : 129 Question Id : 1592075544 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Characteristic impedance Z_0 for a lossless line operating at 300 MHz with distributed capacitance and inductance of $0.9\mu F$ and $9mH$ respectively is

Options :

1. ✘ 11.1 k Ω

2. ✘ 0.3 k Ω

3. ✘ 1 k Ω

4. ✔ 0.1 k Ω

Question Number : 130 Question Id : 1592075545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 transmission line has a VSWR of 2 then the reflection coefficient is

Options :

1. ✘ $\frac{1}{2}$

2. ✘ 0

3. ✘ $\frac{1}{4}$

4. ✓

$\frac{1}{3}$

Question Number : 131 Question Id : 1592075546 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 thyristor, holding current is

Options :

1. ✗ More than latching current I_L

2. ✓ Less than latching current I_L

3. ✗ Equal to latching current I_L

4. ✗ Very small

Question Number : 132 Question Id : 1592075547 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 normal SCRs, turn-on time is

Options :

1. ✓ Less than turn-off time, t_q

2. ✗ More than t_q

3. ✗ Equal to t_q

4. ✗ Half of t_q

Question Number : 133 Question Id : 1592075548 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 dielectric strength of air gap is

Options :

1. ✗ 10.05 kV/cm

2. ✗ 15.22 kV/m

3. ✓ 21.1 kV/cm

4. ✗ 42.67 kV/m

Question Number : 134 Question Id : 1592075549 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 produced in indirect arc furnace is

Options :

Double the direct arc furnace

1. ✘

Less than direct arc furnace

2. ✔

Equal to direct arc furnace

3. ✘

Three times the direct arc furnace

4. ✘

Question Number : 135 Question Id : 1592075550 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 rate of heat produced by dielectric heating is increased by

Options :

1. ✔ Increasing frequency and voltage supply

2. ✘ Increasing frequency and decreasing voltage supply

3. ✘ Decreasing frequency and voltage supply

4. ✘ Decreasing frequency and increasing voltage supply

Question Number : 136 Question Id : 1592075551 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 improving the power factor of coreless type induction furnace, _____ is used

Options :

1. ✘ Transistor

2. ✘ Inductor

3. ✘ Resistor

4. ✔ Capacitor

Question Number : 137 Question Id : 1592075552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Constantan is used for measurement of dynamic strains. It is an alloy of

Options :

1. ✘ Copper and Aluminium
2. ✘ Nickel and Molybdenum
3. ✘ Nickel and Chromium
4. ✔ Copper and Nickel

Question Number : 138 Question Id : 1592075553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 linear variable differential transformer transducer is

Options :

1. ✘ Capacitive transducer
2. ✘ Non-inductive transducer
3. ✔ Inductive transducer

4. ✘ Resistive transducer

Question Number : 139 Question Id : 1592075554 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 two wires made of different metals are joined together then a voltage will produce between the two wires due to difference of temperature. This effect is observed in

Options :

1. ✘ Thermistors

2. ✔ Thermocouples

3. ✘ RTD

4. ✘ Ultrasonic

Question Number : 140 Question Id : 1592075555 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which is the first PLC model?

Options :

1. ✔ PLC 084

2. ✘ PLC 085

3. ✘ PLC 086

4. ✘ PLC 070

Question Number : 141 Question Id : 1592075556 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 scheme uses one-bit quantizer in transmitter

Options :

1. ✘ Pulse Code modulation

2. ✘ Pulse Amplitude Modulation

3. ✔ Delta Modulation

4. ✘ Differential Pulse Code Modulation

Question Number : 142 Question Id : 1592075557 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 which of the modulation technique, a message signal is represented by a sequence of coded pulses, which is accomplished by representing the signal in discrete form in both time and amplitude.

Options :

1. ✘ PPM

2. ✘ PAM

3. ✘ PDM

4. ✔ PCM

Question Number : 143 Question Id : 1592075558 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 major advantage of a TWT over a Klystron lies in its

Options :

1. ✔ Higher bandwidth

2. ✘ Narrow bandwidth

3. ✘ Short life

4. ✘ Handling power of 1 mw

Question Number : 144 Question Id : 1592075559 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 broadcast radio transmitter radiates 75 kW when the modulation percentage is 50. The carrier power will be

Options :

1. ✘ 33.3 kW

2. ✔ 66.6 kW

3. ✘ 35 kW

4. ✘ 50 kW

Question Number : 145 Question Id : 1592075560 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 FM wave is given by

$s(t) = 10 \cos (8\pi \times 10^6 t + 8 \sin (2\pi \times 10^3 t))$. Calculate its frequency deviation.

Options :

1. ✘ 20 KHz

2. ✘ 16 KHz

3. ✔ 8 KHz

4. ✘ 6 KHz

Question Number : 146 Question Id : 1592075561 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

De-emphasis circuit is used to

Options :

1. ✔ Attenuate higher frequencies at receiver

2. ✘ Attenuate lower frequencies at receiver

3. ✘ Attenuate lower frequencies at transmitter

4. ✘ Amplify higher frequencies at receiver

Question Number : 147 Question Id : 1592075562 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 a superheterodyne receiver is tuned to 1300 kHz, the IF is 455 kHz. What is the image frequency?

Options :

1. ✘ 1755 kHz

2. ✔ 2210 kHz

3. ✘ 2110 kHz

4. ✘ 1855 kHz

Question Number : 148 Question Id : 1592075563 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 effective aperture of an isotropic radiator is

Options :

1. ✘ 1.0

2. ✘ 0

3. ✘ $0.13 \lambda^2$

4. ✔ $0.08 \lambda^2$

Question Number : 149 Question Id : 1592075564 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

TDM generally uses

Options :

Phase Modulation

1. ✘

Amplitude Modulation

2. ✘

Pulse Modulation

3. ✔

Analog Modulation

4. ✘

Question Number : 150 Question Id : 1592075565 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 channel capacity C of a band limited Gaussian channel equals

Options :

$$B \log_2 \left(1 + \frac{S}{N} \right)$$

1. ✓

$$B \log \left(\frac{S}{N} \right)$$

2. ✘

$$\frac{1}{B} \log \left(\frac{S}{N} \right)$$

3. ✘

$$\frac{1}{B} \log_2 \left(1 + \frac{S}{N} \right)$$

4. ✘

Question Number : 151 Question Id : 1592075566 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 frequency of the carrier is varied based on the information in a digital
signal

Options :

1. ✘ ASK

2. ✘ PSK

3. ✔ FSK

4. ✘ QAM

Question Number : 152 Question Id : 1592075567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 waveguide V_p , V_c and V_g are phase velocity, velocity of light, group velocity respectively. Which of the following relationship is correct?

Options :

1. ✔ $V_p > V_c > V_g$

2. ✘ $V_p < V_c < V_g$

3. ✘ $V_g > V_p > V_c$

4. ✘ $V_p < V_c > V_g$

Question Number : 153 Question Id : 1592075568 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Reflex Klystron Oscillator uses

Options :

1. ✓ One cavity resonator
2. ✗ Two cavity resonator
3. ✗ Three cavity resonator
4. ✗ Four cavity resonator

Question Number : 154 Question Id : 1592075569 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 geostationary communication satellite is located at a height of

Options :

1. ✓ 36000 km

2. ✘ 56000 km

3. ✘ 18000 km

4. ✘ 54000 km

Question Number : 155 Question Id : 1592075570 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 List I with List II

List-I

- a. C-band
- b. Ku-band
- c. Ka-band

List-II

- 1. 12 GHz to 18 GHz
- 2. 24GHz to 26 GHz
- 3. 26 GHz to 40 GHz
- 4. 4 GHz to 8 GHz

Options :

1. ✘ 4-a 2-b 1-c

2. ✘ 2-a 1-b 3-c

3. ✔ 4-a 1-b 3-c

4. ✘ 3-a 4-b 2-c

Question Number : 156 Question Id : 1592075571 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 end fire array the principal direction of the radiation

Options :

1. ✘ Is perpendicular to the array axis
2. ✘ Is perpendicular to the array axis and also the plane containing the array elements
3. ✔ Coincides with the direction of the array axis
4. ✘ Is 45° to the direction of the array axis

Question Number : 157 Question Id : 1592075572 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 which of the following modes of propagation the ionosphere acts as the reflecting surface for the waves?

Options :

1. ✘ Ground wave

2. ✓ Sky wave

3. ✗ LOS

4. ✗ Space wave

Question Number : 158 Question Id : 1592075573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum usable frequency of an ionospheric layer at 60° incidence with 8 MHz critical frequency is

Options :

1. ✓ 16 MHz

2. ✗ $16/\sqrt{3}$ MHz

3. ✗ 8 MHz

4. ✗ 6.93 MHz

Question Number : 159 Question Id : 1592075574 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 very useful as a multiband high frequency receiving antenna

Options :

1. ✘ Square loop

2. ✘ Folded dipole

3. ✘ Conical hole

4. ✔ Log periodic

Question Number : 160 Question Id : 1592075575 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 grounded vertical antenna has a length l which is 0.05λ at a frequency f . If its radiation resistance at f is $R \Omega$, then its radiation resistance at $2f$ will be

Options :

1. ✘ $R/2 \Omega$

2. ✘

$R \Omega$

3. ✘ $2R \Omega$

4. ✔ $4R \Omega$

Question Number : 161 Question Id : 1592075576 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 dominant mode in rectangular waveguide is

Options :

1. ✘ TE_{11}

2. ✔ TE_{10}

3. ✘ TEM

4. ✘ TE_{01}

Question Number : 162 Question Id : 1592075577 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 type of radar that is used to eliminate clutter in navigational application is

Options :

1. ✘ Pulse radar
2. ✘ Tracking radar
3. ✔ MTI radar
4. ✘ Mono-pulse radar

Question Number : 163 Question Id : 1592075578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 blind speed of an MTI radar can be avoided by changing the

Options :

1. ✘ Transmitted power
2. ✘ Carrier frequency
3. ✔ Pulse repetition frequency

Antenna rotation rate

4. ✘

Question Number : 164 Question Id : 1592075579 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 in the Repeller space of reflex klystron must be $\left(n + \frac{3}{4}\right)$ cycles to ensure that

Options :

1. ✘ Electrons are accelerated by the gap voltage on their return.
2. ✘ It is equal to the period of cavity oscillations.
3. ✘ The Repeller is not damaged by striking electrons.
4. ✔ Returning electrons give energy to the gap oscillations

Question Number : 165 Question Id : 1592075580 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Coupling factor of a directional coupler is

Options :

1. ✘ Ratio of Incident power to backward power
2. ✘ Ratio of Forward power to backward power
3. ✘ Ratio of Backward power to forward power
4. ✔ Ratio of Incident power to forward power

Question Number : 166 Question Id : 1592075581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 octal equivalent of the HEX number AB.CD

Options :

1. ✘ 253.314
2. ✔ 253.632
3. ✘ 526.623
4. ✘ 526.632

Question Number : 167 Question Id : 1592075582 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$[(X+X'Y)(X+X'Y')][(ZW+Z'W') + (Z'W+ ZW')]$ can be minimized

Options :

1. ✘ 1

2. ✔ X

3. ✘ 0

4. ✘ Y

Question Number : 168 Question Id : 1592075583 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 simultaneous equations of Boolean variables x, y, z and w are : $a + b + c = 1$, $ab = 0$, $ac + d = 1$ and $ab + (cd)' = 0$ having the following solutions for a, b, c and d respectively

Options :

1. ✘ 0100

2. ✘ 1101

3. ✓ 1011

4. ✗ 1000

Question Number : 169 Question Id : 1592075584 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 master-slave flip-flop is a _____ device

Options :

1. ✗ Positive Edge Triggering only

2. ✗ No Triggering

3. ✗ Negative Edge Triggering only

4. ✓ Both Positive and Negative Triggering

Question Number : 170 Question Id : 1592075585 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 decoder with enable input can function as

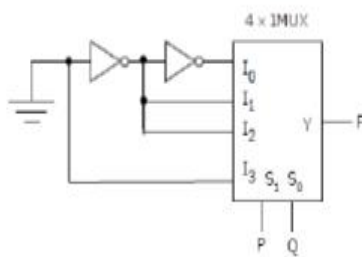
Options :

1. ✘ XOR
2. ✘ Multiplexer
3. ✔ De-multiplexer
4. ✘ Encoder

Question Number : 171 Question Id : 1592075586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The logic function implemented by the circuit below is (ground implies logic 0)



Options :

1. ✘ $F = \text{AND}(P, Q)$
2. ✘ $F = \text{OR}(P, Q)$
3. ✘ $F = \text{XNOR}(P, Q)$

$$F = \text{XOR}(P, Q)$$

4. ✓

Question Number : 172 Question Id : 1592075587 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum number of prime implicants in a n -variable Boolean function, is

Options :

1. ✗ $2(n-1)$

2. ✗ $n/2$

3. ✗ 2^n

4. ✓ $2^{(n-1)}$

Question Number : 173 Question Id : 1592075588 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 JK flip-flop in the toggle mode has _____.

Options :

1. ✓ K = 1 and J = 1

2. ✘ $K = 1$ and $J = 0$

3. ✘ $K = 0$ and $J = 1$

4. ✘ $K = 0$ and $J = 0$

Question Number : 174 Question Id : 1592075589 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The output of a JK flip-flop when two asynchronous active low inputs, PRESET and Clear, are applied is

Options :

1. ✘ 0

2. ✘ 1

3. ✔ Undefined

4. ✘ Previous state

Question Number : 175 Question Id : 1592075590 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 resistor required for an N bit DAC in R-2R ladder circuit is

Options :

1. ✘ N

2. ✔ 2N

3. ✘ N + 2

4. ✘ 4N

Question Number : 176 Question Id : 1592075591 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

SAR type analog to digital converter has a resolution of 10 mV. What will be the digital output for an analog input of 2.16 V?

Options :

1. ✔ 01101100

2. ✘ 01101011

3. ✘ 01101101

4. ✘ 010110101

Question Number : 177 Question Id : 1592075592 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which type of following memory has a limitation on the operating clock frequency

Options :

1. ✘ EEPROM

2. ✘ Static RAM

3. ✔ DRAM

4. ✘ Magneto resistive RAM

Question Number : 178 Question Id : 1592075593 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 program status word register in 8051

Options :

1. ✓ 8 bit word

2. ✗ 16 bit word

3. ✗ 4 bit word

4. ✗ 20 bit word

Question Number : 179 Question Id : 1592075594 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 size of internal RAM of 8051 is

Options :

1. ✓ 128 bytes

2. ✗ 256 bytes

3. ✗ 512 bytes

4. ✗ 1024 bytes

Question Number : 180 Question Id : 1592075595 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 instruction used to set the carry flag in a computer can be classified as

Options :

1. ✘ Data transfer
2. ✘ Arithmetic
3. ✘ Program control
4. ✔ Logical Instruction

Question Number : 181 Question Id : 1592075596 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

```
MOV A,R0
CPL A
ADD A,#01
the result of above program is
```

Options :

1. ✘ 1's complement
2. ✔ 2's complement

Addition of A and B

3. ✘

Subtraction of A and B

4. ✘

Question Number : 182 Question Id : 1592075597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Subroutines are used in large programs not:

Options :

1. ✘ To increase programming use

2. ✘ To reduce storage equipment

3. ✔ To reduce program extension time

4. ✘ For ease of program testing at the program development time

Question Number : 183 Question Id : 1592075598 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 delay that can be generated with the crystal frequency of 20MHz?

Options :

1. ✘ 3276.8 sec
2. ✘ 0.011 msec
3. ✘ 11.63 sec
4. ✔ 3.27 msec

Question Number : 184 Question Id : 1592075599 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 external interrupt?

Options :

1. ✔ INT0(active low)
2. ✘ INT2(active low)
3. ✘ Timer0 interrupt
4. ✘ Timer1 interrupt

Question Number : 185 Question Id : 1592075600 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 data lines are there in 16*2 alphanumeric LCD display

Options :

1. ✘ 16

2. ✔ 8

3. ✘ 1

4. ✘ 4

Question Number : 186 Question Id : 1592075601 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which is the programmable communication interface?

Options :

1. ✘ 8255

2. ✔ 8251

3. ✘ 8254

4. ✘ 8259

Question Number : 187 Question Id : 1592075602 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 purpose of Interlacing in television is

Options :

1. ✔ To avoid flicker

2. ✘ To produce the horizontal sync pulse

3. ✘ To produce the vertical sync pulse

4. ✘ To increase the bandwidth

Question Number : 188 Question Id : 1592075603 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 primary colors used in color TV

Options :

1. ✘ Blue, Brown, Black
2. ✘ Black, Green, Yellow
3. ✔ Red, Green, Blue
4. ✘ Red, Yellow, Black

Question Number : 189 Question Id : 1592075604 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 purpose of Equalizing pulses in TV are to ensure the

Options :

1. ✘ Serrations
2. ✘ Horizontal blanking
3. ✘ Horizontal retrace
4. ✔ Vertical blanking

Question Number : 190 Question Id : 1592075605 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 composite video waveform contains serrations for the purpose of

Options :

1. ✘ Equalization
2. ✔ Horizontal synchronization
3. ✘ Good clarity of picture
4. ✘ Vertical synchronization

Question Number : 191 Question Id : 1592075606 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 picture tube of TV the video signal is applied

Options :

1. ✘ To the anode
2. ✘ Between grid and ground

3. ✓ Between grid and cathode

4. ✘ To the yoke

Question Number : 192 Question Id : 1592075607 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 circuit is required to separate sync pulses from the composite video waveform?

Options :

1. ✓ Clipper

2. ✘ Differentiator

3. ✘ Integrator

4. ✘ AGC amplifier

Question Number : 193 Question Id : 1592075608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 layer hides the complexities of data communications from the higher layers which are mainly concerned with supporting applications.

Options :

1. ✘ Session Layer

2. ✔ Transport Layer

3. ✘ Presentation Layer

4. ✘ Application Layer

Question Number : 194 Question Id : 1592075609 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Firewall is _____

Options :

1. ✔ A system that prevents unauthorized access to a private network

2. ✘ A system that allows users to improve the speed of computer.

A system in which multiple computers are connected to one another.

3. ✘

A system that scans and removes viruses from a computer.

4. ✘

Question Number : 195 Question Id : 1592075610 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 cable is typically used in the vicinity of high voltage equipment

Options :

1. ✘ UTP

2. ✔ STP

3. ✘ Coaxial

4. ✘ Optical Fibre

Question Number : 196 Question Id : 1592075611 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 protocol is used for web browsing

Options :

1. ✘ FTP

2. ✔ HTTP

3. ✘ SNMP

4. ✘ RTP

Question Number : 197 Question Id : 1592075612 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 link layer of TCP/IP is known as

Options :

1. ✘ Internet Layer

2. ✔ Host to Network Layer

3. ✘ Application Layer

4. ✘ Transport Layer

Question Number : 198 Question Id : 1592075613 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 option provides hosts with a way to use security.

Options :

1. ✘ Loose source routing

2. ✘ Record route

3. ✔ Security

4. ✘ TimeStamp

Question Number : 199 Question Id : 1592075614 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Minimal Connectivity is

Options :

1. ✔ Star Topology

2. ✖ Bus Topology

3. ✖ Ring Topology

4. ✖ Mesh Topology

Question Number : 200 Question Id : 1592075615 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which type of computer network is designed for a single building or campus

Options :

1. ✖ MAN

2. ✔ LAN

3. ✖ WAN

4. ✖ PAN