

Telangana State Council Higher Education

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✘ icon are incorrect.

Question Paper Name :	Electronics and Instrumentation Engineering 20th May 2023 Shift1 SET1
Subject Name :	Electronics and Instrumentation Engineering
Creation Date :	2023-05-20 13:03:34
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 Instrumentation Engineering

Group Number :	1
Group Id :	15920729
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 :	159207110
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 : 159207131
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 1 Question Id : 1592075616 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075617 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075618 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075620 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075621 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075622 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075623 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075624 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075625 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075626 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075627 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075628 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075629 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075630 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075631 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075632 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075633 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075634 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075635 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075636 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075637 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075638 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075639 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075640 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075641 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075642 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075643 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 : 1592075644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075645 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075646 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075647 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 : 1592075648 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075649 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075650 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075651 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075652 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075653 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075654 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075655 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075656 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075657 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

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 : 1592075658 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075659 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075660 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075661 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075662 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075663 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075664 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075665 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :	159207111
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 : 159207132
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 51 Question Id : 1592075666 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075667 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075668 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075669 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075670 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075672 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075673 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075675 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075676 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075678 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075679 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075683 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075684 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075685 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075686 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075687 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075688 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075689 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075690 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :	159207112
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 :	159207133
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 1592075691 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075692 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075693 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075694 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075695 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075696 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 : 1592075697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075698 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075699 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075702 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075703 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075704 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075705 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075706 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075707 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075708 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075709 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592075711 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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. ✔ $\text{CO} + \text{N}_2$

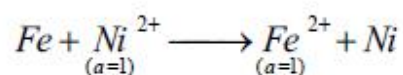
3. ✘ $\text{CO} + \text{CH}_4$

4. ✘ $\text{CH}_4 + \text{H}_2$

Question Number : 97 Question Id : 1592075712 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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

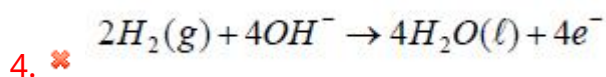
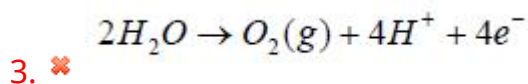
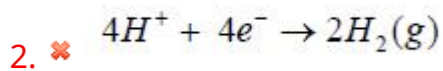
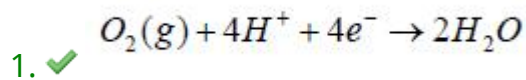
4. ✗ - 0.690 V

Question Number : 98 Question Id : 1592075713 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075714 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 : 1592075715 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Instrumentation Engineering

Section Id :	159207113
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 :	159207134
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 1592075716 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Program Counter in 8051

Options :

1. ✖ 12 bit

2. ✘ 8 bit

3. ✔ 16 bit

4. ✘ 32 bit

Question Number : 102 Question Id : 1592075717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the addressing mode of the instruction MOV R0,@31h

Options :

1. ✘ Immediate addressing mode

2. ✘ Indirect addressing mode

3. ✔ Register indirect addressing mode

4. ✘ Direct addressing mode

Question Number : 103 Question Id : 1592075718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 wrong according to RET and RETI

Options :

1. ✘ Both are return statements
2. ✔ RET returns from a CALL and RETI returns from a JMP
3. ✘ RET returns from a CALL and RETI returns from an ISR
4. ✘ This means end of the task or a function

Question Number : 104 Question Id : 1592075719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 control word of 8255 would be _____ if Port A acts as output and Port B acts as input in

Mode 0.

Options :

1. ✘ 90h
2. ✔ 82h
3. ✘ 12h

4. ✘ 02h

Question Number : 105 Question Id : 1592075720 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Relays in PLC can be used as _____

Options :

1. ✘ Input element
2. ✘ Sensing element
3. ✘ Feedback element
4. ✔ Control element

Question Number : 106 Question Id : 1592075721 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

8051 is _____ microcontroller

Options :

1. ✘ 16 bit CISC

2. ✘ 16 bit RISC

3. ✔ 8 bit CISC

4. ✘ 8 bit RISC

Question Number : 107 Question Id : 1592075722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the “Not Equal to instruction” in PLC programming.

Options :

1. ✘ EQU

2. ✔ NEQ

3. ✘ GEQ

4. ✘ LEQ

Question Number : 108 Question Id : 1592075723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

8251 interfacing device is _____

Options :

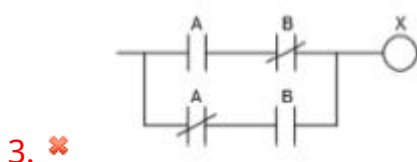
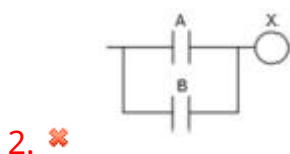
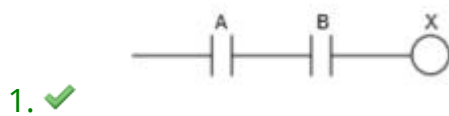
1. ✓ Used for serial communication
2. ✗ Used for parallel communication
3. ✗ Used for both serial and parallel communication
4. ✗ Not used for communication

Question Number : 109 Question Id : 1592075724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the AND gate from the following.

Options :





4. ✘

Question Number : 110 Question Id : 1592075725 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 vertical lines in a ladder diagram indicate _____

Options :

1. ✘ Rungs

2. ✔ Power rails

3. ✘ Neutral

4. ✘ Ground

Question Number : 111 Question Id : 1592075726 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 interrupts handled by 8051 are _____

Options :

1. ✘ 4

2. ✓ 5

3. ✗ 6

4. ✗ 8

Question Number : 112 Question Id : 1592075727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 not an 8 bit register

Options :

1. ✗ SBUF

2. ✗ PCON

3. ✓ DPTR

4. ✗ Accumulator

Question Number : 113 Question Id : 1592075728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 about ALE in 8051

Options :

1. ✘ There are two ALEs
2. ✘ It is Accumulator Latch Enable
3. ✔ It is used for multiplexing address and data bus
4. ✘ It is an active low signal

Question Number : 114 Question Id : 1592075729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

PLC stands for

Options :

1. ✔ Programmable Logic Controller
2. ✘ Peripheral Logic Controller
3. ✘ Programmable Ladder Controller
4. ✘ Programmable Loop Controller

Question Number : 115 Question Id : 1592075730 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 not a part of SCADA

Options :

1. ✓ Manipulator
2. ✗ Remote Terminal Unit
3. ✗ Sensors and actuators
4. ✗ Repeaters

Question Number : 116 Question Id : 1592075731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 thermal runaway will not occur in FET because

Options :

1. ✓ Current flow is due to majority charge carriers
2. ✗ Current flow is due to minority charge carriers
3. ✗ Current flow is due to both majority and minority charge carriers

High input impedance

4. ✘

Question Number : 117 Question Id : 1592075732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 transistor has a current gain of 0.99 in the CB mode. Its current gain in the CC mode is

Options :

1. ✘ 99

2. ✔ 100

3. ✘ 1.01

4. ✘ 0.99

Question Number : 118 Question Id : 1592075733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 an RC coupled amplifier the gain will be reduced at high and low frequencies respectively because of

Options :

1. ✘

External capacitors and internal capacitors

2. ✓ Internal capacitors and external capacitors
3. ✘ Emitter resistor and external capacitor
4. ✘ Internal capacitor and emitter resistor

Question Number : 119 Question Id : 1592075734 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Cascade amplifier pair consists of

Options :

1. ✘ Cascade of CB amplifier and CE amplifier
2. ✘ Cascade of 2 CE amplifiers
3. ✘ Cascade of 2 CC amplifiers
4. ✓ Cascade of CE amplifier and CB amplifier

Question Number : 120 Question Id : 1592075735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 presence of harmonic distortion in power amplifiers is because of

Options :

1. ✘ Linear characteristics of active device
2. ✔ Non Linear characteristics of active device
3. ✘ Ideal characteristics of active device
4. ✘ Time varying characteristics of active device

Question Number : 121 Question Id : 1592075736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 an amplifier, if the output current flows for greater than 180° and less than 360° of the input cycle, then the class of amplifier will be

Options :

1. ✘ Class A
2. ✘ Class B

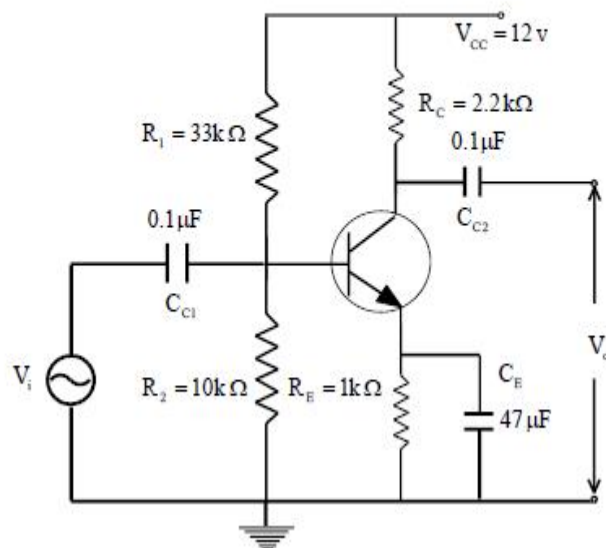
3. ✘ Class C

4. ✔ Class AB

Question Number : 122 Question Id : 1592075737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 (S) of the following self-bias circuit is (Assume $\beta=99$)



Options :

1. ✘ 100

2. ✔ 7.2

3. ✘ 99

4. ✘ 4.8

Question Number : 123 Question Id : 1592075738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 voltage gains of an amplifier without feedback and with negative feedback respectively are

100 and 20. The percentage of negative feedback (β) would be

Options :

1. ✘ 80 %

2. ✘ 50 %

3. ✔ 40 %

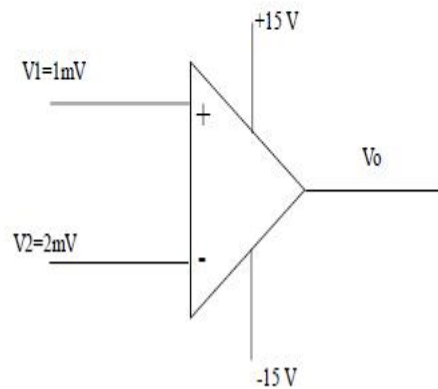
4. ✘ 20 %

Question Number : 124 Question Id : 1592075739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 following op-amp configuration, open loop voltage gain is 1,00,000; then the output

voltage is



Options :

1. ✘ -100 V
2. ✘ 100 V
3. ✘ 15 V
4. ✔ -15 V

Question Number : 125 Question Id : 1592075740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 gain and common mode gain of a differential amplifier are 100 dB and 9 dB

respectively, then its CMRR is

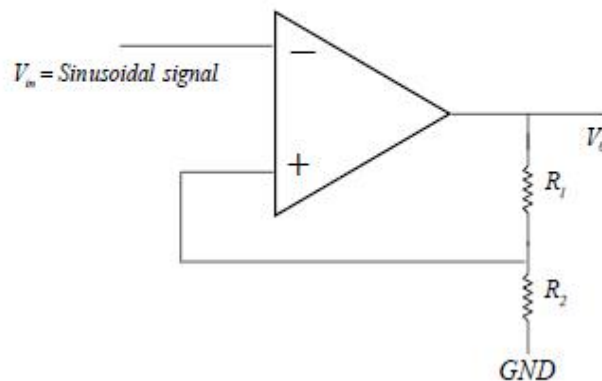
Options :

1. ✘ 100 dB
2. ✘ 9 dB
3. ✘ 109 dB
4. ✔ 91 dB

Question Number : 126 Question Id : 1592075741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the following circuit diagram



Options :

1. ✘ Non-inverting amplifier

2. ✘ Inverting amplifier
3. ✔ Schmitt Trigger
4. ✘ Astable multi-vibrator

Question Number : 127 Question Id : 1592075742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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-channel FETs are superior to p-channel FETs, because

Options :

1. ✘ Mobility of electrons is smaller than that of holes
2. ✔ Mobility of electrons is greater than that of holes
3. ✘ They consume less power
4. ✘ They have high switching time

Question Number : 128 Question Id : 1592075743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Gauge factor is defined as

Options :

1. ✘ $\frac{\Delta R/R}{L/\Delta L}$

2. ✔ $\frac{\Delta R/R}{\Delta L/L}$

3. ✘ $\frac{R/\Delta R}{\Delta L/L}$

4. ✘ $\frac{R/\Delta R}{L/\Delta L}$

Question Number : 129 Question Id : 1592075744 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 does a gauge pressure transducer measure?

Options :

1. ✘ Pressure relative to 0Pa

2. ✘ Difference between the pressure at two different points

3. ✓ Pressure with respect to atmospheric pressure

4. ✘ Pressure in all directions

Question Number : 130 Question Id : 1592075745 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 values of Reynolds number > 4000 , then the type of flow is _____

Options :

1. ✘ Laminar

2. ✓ Turbulent

3. ✘ Pulsatory

4. ✘ Helical

Question Number : 131 Question Id : 1592075746 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 dead weight tester is used to calibrate _____ instruments.

Options :

1. ✘ Force
2. ✔ Pressure
3. ✘ Flow
4. ✘ Strain

Question Number : 132 Question Id : 1592075747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not used to measure angular velocity?

Options :

1. ✘ Seismic type velocity transducer
2. ✘ Tachometer
3. ✘ Gyroscopes
4. ✔ RVDT

Question Number : 133 Question Id : 1592075748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Gauge factor of a piezo resistive element is _____

Options :

1. ✓ The ratio of relative change in electrical resistance, to the mechanical strain
2. ✗ The ratio of relative change in mechanical strain, to the electrical resistance
3. ✗ The ratio of relative change in electrical resistance, to the mechanical stress
4. ✗ The ratio of relative change in mechanical stress, to the electrical resistance

Question Number : 134 Question Id : 1592075749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Thermocouple and RTD are _____ transducers

Options :

1. ✗ Both active
2. ✗ Both passive
3. ✓ Active and passive
- 4.

✘ Passive and active

Question Number : 135 Question Id : 1592075750 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the quantity from the following that LVDT cannot measure.

Options :

1. ✘ Displacement

2. ✘ Pressure

3. ✔ Temperature

4. ✘ Acceleration

Question Number : 136 Question Id : 1592075751 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 overall transfer function of two systems connected in series is

Options :

1. ✘ Sum of two transfer functions

2. ✘ Difference of two transfer functions
3. ✔ Multiplication of two transfer functions
4. ✘ They can't be united

Question Number : 137 Question Id : 1592075752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 incorrect?

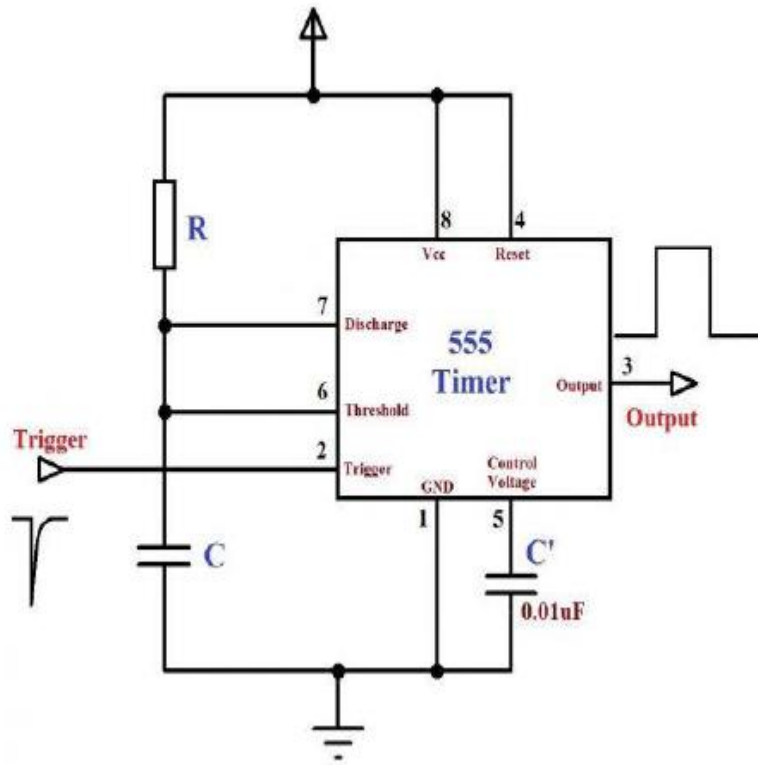
Options :

1. ✘ Feedback provides stability
2. ✔ Feedback reduces stability
3. ✘ Feedback reduces noise
4. ✘ Feedback increases complexity

Question Number : 138 Question Id : 1592075753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 application best describes this 555 timer circuit?



Options :

1. ✘ Mono stable multi vibrator
2. ✔ Bi-stable multi vibrator
3. ✘ Astable multi vibrator
4. ✘ Free running multi vibrator

Question Number : 139 Question Id : 1592075754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 h -parameters of typical npn transistor are

$h_{ie} = 1.1k\ \Omega$, $h_{fe} = 50$, $h_{re} = 2.5 \times 10^{-5}$, $h_{oe} = 24\ \mu A/V$, $R_L = 10k\ \Omega$, for common emitter configuration.

The current gain (A_I), input impedance (Z_{in}) and voltage gain (A_V) are

Options :

1. ✓ $A_I = -40.32$, $Z_{in} = 1k\ \Omega$, $A_V = -403.2$

2. ✗ $A_I = -50$, $Z_{in} = 10k\ \Omega$, $A_V = -500$

3. ✗ $A_I = -400.2$, $Z_{in} = 10k\ \Omega$, $A_V = -40.32$

4. ✗ $A_I = -100$, $Z_{in} = 1k\ \Omega$, $A_V = -1000$

Question Number : 140 Question Id : 1592075755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 operational amplifier uses a differential input stage with a constant current source to obtain

Options :

1. ✗ Very low common mode gain

2. ✓ Very high differential gain

3. ✘ Very low input noise

4. ✘ Very high input resistance

Question Number : 141 Question Id : 1592075756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

After execution of the following 8051 microcontroller program what will be the status of *carry (CY)* and *auxiliary carry (AC)*

```
MOV A, #9CH
```

```
ADD A, #64H
```

Options :

1. ✘ $CY=0; AC=0$

2. ✔ $CY=1; AC=1$

3. ✘ $CY=0; AC=1$

4. ✘ $CY=1; AC=0$

Question Number : 142 Question Id : 1592075757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The internal memory capacity of 8051 microcontroller is

Options :

1. ✓ RAM: 128 Bytes; ROM: 4k Bytes
2. ✗ RAM: 256 Bytes; ROM: 2k Bytes
3. ✗ RAM: 128 Bytes; ROM: 2k Bytes
4. ✗ RAM: 256 Bytes; ROM: 4k Bytes

Question Number : 143 Question Id : 1592075758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Find the period of machine cycle in 8051 microcontroller for a crystal frequency of *16 MHz*

Options :

1. ✗ 0.0625 μ s
2. ✓ 0.75 μ s
3. ✗ 0.125 μ s
4. ✗

1μs

Question Number : 144 Question Id : 1592075759 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Find how many times the following 8051 microcontroller delay program will be executed.

```
Here :MOV R3, #250
```

```
    NOP
```

```
    NOP
```

```
    DJNZ R3, Here
```

```
    RET
```

Options :

1. ✘ 250

2. ✘ 500

3. ✘ 125

4. ✔ Infinity

Question Number : 145 Question Id : 1592075760 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 operational amplifier is a

Options :

1. ✓ Voltage controlled voltage source
2. ✗ Current controlled voltage source
3. ✗ Voltage controlled current source
4. ✗ Current controlled current source

Question Number : 146 Question Id : 1592075761 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 IC represent the programmable peripheral interface

Options :

1. ✗ 8257
2. ✗ 8251

3. ✓ 8255

4. ✘ 8051

Question Number : 147 Question Id : 1592075762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Ladder logic programming consists primarily of

Options :

1. ✓ Virtual relay contacts and coils

2. ✘ Logic gate symbols with connecting lines

3. ✘ Function blocks with connecting lines

4. ✘ Text-based code

Question Number : 148 Question Id : 1592075763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 OR function implemented in ladder logic uses

Options :

1. ✘ Normally-closed contacts in series
2. ✘ Normally-open contacts in series
3. ✘ A single normally-closed contact
4. ✔ Normally-open contacts in parallel

Question Number : 149 Question Id : 1592075764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

SETB PSW.3 results in selecting:

Options :

1. ✘ Register bank 0
2. ✘ Register bank 1
3. ✔ Register bank 2
4. ✘ Register bank 3

Question Number : 150 Question Id : 1592075765 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 standard form of DCS used in SCADA system

Options :

1. ✓ Distributed control system
2. ✗ Digital control system
3. ✗ Distributed code system
4. ✗ Distributed communication system

Question Number : 151 Question Id : 1592075766 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 not a component of ROBOT?

Options :

1. ✓ Remote Telemetry Unit
2. ✗ Sensors

3. ✘ Controller

4. ✘ Manipulator

Question Number : 152 Question Id : 1592075767 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

CNC stands for?

Options :

1. ✘ Centralized Numerical Control

2. ✘ Computer Neuro Control

3. ✔ Computer Numerical Control

4. ✘ Component Numerical Control

Question Number : 153 Question Id : 1592075768 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What are the communication protocols used for the interfacing between human machine interface and programmable logic controller?

Options :

1. ✘ RFID
2. ✘ I²C
3. ✘ 4 – 20 mA current loop
4. ✔ RS 232, modbus

Question Number : 154 Question Id : 1592075769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 impedances $10 - j10$ and $10 + j10$ are connected in parallel. Their combined impedance is

Options :

1. ✘ $10 - j10$
2. ✘ $10 + j10$
3. ✔ $10 + j0$

4. ✘ $5 + j0$

Question Number : 155 Question Id : 1592075770 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 maximum power transfer what should be the value of load impedance if the internal

impedance is $20 + j10$

Options :

1. ✘ 20

2. ✘ $20 + j10$

3. ✔ $20 - j10$

4. ✘ $j10$

Question Number : 156 Question Id : 1592075771 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 series RLC circuit is at resonance at 500Hz . If capacitance is increased to four times, the circuit will be in resonance at

Options :

1. ✘ 500 Hz
2. ✘ 1000 Hz
3. ✔ 250 Hz
4. ✘ 750 Hz

Question Number : 157 Question Id : 1592075772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 certain loaded transformer, the secondary voltage is one-fourth the primary voltage. The secondary current is

Options :

1. ✘ One-fourth the primary current
2. ✔ Four times the primary current

3. ✘ Equal to the primary current

4. ✘ One-eighth the primary current

Question Number : 158 Question Id : 1592075773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 oscillator types provides extremely stable output frequency:

Options :

1. ✘ Colpitt's oscillator

2. ✘ Wein bridge oscillator

3. ✔ Crystal oscillator

4. ✘ Hartley oscillator

Question Number : 159 Question Id : 1592075774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 oscillator that is mostly used for generating audio frequency signals is

Options :

1. ✓ Wein bridge
2. ✗ Tuned base
3. ✗ Tuned collector
4. ✗ Colpitt's oscillator

Question Number : 160 Question Id : 1592075775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 4-bit R/2R digital-to-analog (DAC) converter has a reference of 5 volts. What is the analog output for the input code 0101.

Options :

1. ✗ 6.25
2. ✗ 0.625
3. ✗ 0.3125

4. ✓ 1.66

Question Number : 161 Question Id : 1592075776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 fastest Analog-to-Digital Converter (ADC)?

Options :

1. ✗ Counter type

2. ✗ Integrator type

3. ✓ Flash type

4. ✗ SAR type

Question Number : 162 Question Id : 1592075777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 series RLC circuit is at resonance at 1 KHz. If capacitance is decreased by four times the

circuit will be in resonance at

Options :

1. ✓ 2 KHz

2. ✗ 1 KHz

3. ✗ 500 Hz

4. ✗ 4 KHz

Question Number : 163 Question Id : 1592075778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pin 8 of 555 timer IC is to be connected to

Options :

1. ✓ Voltage supply

2. ✗ Output

3. ✗ Ground

4. ✗ Discharge

Question Number : 164 Question Id : 1592075779 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 law is used for analyzing a circuit?

Options :

1. ✓ Kirchhoff's law

2. ✗ Newtons law

3. ✗ Faradays law

4. ✗ Ohms law

Question Number : 165 Question Id : 1592075780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 strength of the magnetic field at a point r near a long straight current-carrying wire is B .

The value of the field at a distance $r/2$ will be _____..

Options :

1. ✗ $B/2$

2. ✗ $B/4$

3. ✓ 2B

4. ✘ 4B

Question Number : 166 Question Id : 1592075781 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Energy stored in a capacitor _____.

Options :

1. ✘ Decreases with applied voltages

2. ✓ Square times the applied voltage

3. ✘ Square root times the applied voltage

4. ✘ Proportional to applied voltage

Question Number : 167 Question Id : 1592075782 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 direction of induced emf during electromagnetic induction is given by:

Options :

1. ✘ Faraday's Law
2. ✔ Lenz's Law
3. ✘ Maxwell's Law
4. ✘ Ampere's Law

Question Number : 168 Question Id : 1592075783 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 maximum power transfer, internal resistance of the source should be _____.

Options :

1. ✘ Equal to load resistance
2. ✘ More than that of load
3. ✔ Zero
4. ✘ Less than that of load

Question Number : 169 Question Id : 1592075784 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 synchronous motor draws minimum current when the pf of the load is

Options :

1. ✘ Zero
2. ✔ Unity
3. ✘ 0.6 leading
4. ✘ 0.6 lagging

Question Number : 170 Question Id : 1592075785 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

DC motors are preferred for

Options :

1. ✔ Speed control
2. ✘ AC to DC conversion
- 3.

✘ DC to AC conversion

4. ✘ Commutator Arc

Question Number : 171 Question Id : 1592075786 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 synchronous speed of a 12-pole, 3-phase induction motor will be _____

Options :

1. ✔ 500 rpm

2. ✘ 600 rpm

3. ✘ 700 rpm

4. ✘ 400 rpm

Question Number : 172 Question Id : 1592075787 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 induced emf in an induction motor rotor is at _____

Options :

1. ✘ Running
2. ✘ Maximum torque
3. ✔ Standstill
4. ✘ Maximum efficiency

Question Number : 173 Question Id : 1592075788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 being sensed by a negative temperature coefficient type thermistor is linearly increasing. Its resistance will

Options :

1. ✘ Linearly increase with temperature
2. ✘ Exponentially increase with temperature
3. ✘ Linearly decrease with temperature
4. ✔ Exponentially decrease with temperature

Question Number : 174 Question Id : 1592075789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Despite the presence of negative feedback, control systems still have problems of instability

because the

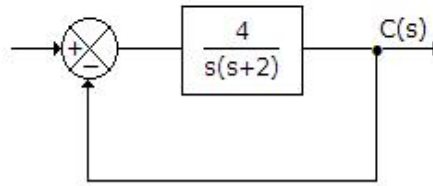
Options :

1. ✓ Components used have non-linearity.
2. ✘ Dynamic equations of the subsystems are not known exactly
3. ✘ Mathematical analysis involves approximations.
4. ✘ System has large negative phase angle at high frequencies.

Question Number : 175 Question Id : 1592075790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 closed loop transfer function of the following system is



Options :

1. ✘
$$H(s) = \frac{3}{s^2 + 2s + 3}$$

2. ✔
$$H(s) = \frac{4}{s^2 + 2s + 4}$$

3. ✘
$$H(s) = \frac{4}{s(s+2)}$$

4. ✘
$$H(s) = \frac{4}{s(s+2)} + 1$$

Question Number : 176 Question Id : 1592075791 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 gain margin for a stable system is

Options :

1.

✓ 2 - 2.5

2. ✗ -5

3. ✗ -100

4. ✗ 100

Question Number : 177 Question Id : 1592075792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 0-200V voltmeter has an accuracy of 0.75% of full scale reading. If voltage measured is 100

V, the error is

Options :

1. ✗ 3%

2. ✗ 2%

3. ✓ 1.5%

4. ✗ 0.75%

Question Number : 178 Question Id : 1592075793 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

All metal resistive strain gauges has *gauge factor (GF)* nearly 2.5 because

Options :

1. ✘ Young's modulus is same for all metals and alloys
2. ✘ Poisson's ratio is the same for all metals and alloys
3. ✘ The conductivity of the material changes with applied strain in the elastic region
4. ✔ The conductivity of the material is independent of applied strain

Question Number : 179 Question Id : 1592075794 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 example of a positive displacement flow meter is

Options :

1. ✘ Orifice meter

2. ✓ Rotary vane type meter

3. ✘ Turbine type meter

4. ✘ Ultrasonic flow meters

Question Number : 180 Question Id : 1592075795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 following represents an active transducer?

Options :

1. ✘ Strain gauge

2. ✘ Thermistor

3. ✘ LVDT

4. ✓ Thermocouple

Question Number : 181 Question Id : 1592075796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 can't be used for static loads?

Options :

1. ✘ Load cell
2. ✔ Piezo electric sensor
3. ✘ Strain Gauge
4. ✘ Resistive load cell

Question Number : 182 Question Id : 1592075797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Stabilized controlled output performance is possible with the following controller

Options :

1. ✘ Proportional
2. ✘ PI
3. ✔ PID
4. ✘ ON-OFF

Question Number : 183 Question Id : 1592075798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 seismic type of transducer has a damping constant of 10. The transducer is designed to measure

Options :

1. ✓ Acceleration

2. ✗ Velocity

3. ✗ Displacement

4. ✗ Force

Question Number : 184 Question Id : 1592075799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 electromechanical device which actuates a train of step angular movements in response to a train of input pulses on one to one basis is

Options :

1. ✘ Synchro control transformer
2. ✘ LVDT
3. ✔ Stepper motor
4. ✘ Tacho generator

Question Number : 185 Question Id : 1592075800 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 process is a fast reacting process?

Options :

1. ✔ Pressure process
2. ✘ Level process
3. ✘ Temperature process
4. ✘ Interacting process

Question Number : 186 Question Id : 1592075801 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 RC phase shift oscillator will not produce any oscillation until the voltage gain of its internal amplifier is _____

Options :

1. ✘ Unity
2. ✘ Less than unity
3. ✘ 3
4. ✔ More than 29

Question Number : 187 Question Id : 1592075802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

CE configuration is the most preferred transistor configuration when used as a switch, because _____

Options :

1. ✘ It requires only one power supply
2. ✔ It requires low voltage or current for operating the switch

3. ✘ It is easily understood by everyone

4. ✘ It has small I_{CEO}

**Question Number : 188 Question Id : 1592075803 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 LDR works on the principle of

Options :

1. ✘ Photovoltaic effect

2. ✘ Photoelectric effect

3. ✘ Piezoelectric effect

4. ✔ Photoconductive effect

**Question Number : 189 Question Id : 1592075804 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 LED's require voltage of and current offor their display.

Options :

1. ✘ 1.2 V and 100 mA
2. ✘ 12 V and 100 mA
3. ✔ 1.2 V and 20 mA
4. ✘ 12 V and 20 mA

Question Number : 190 Question Id : 1592075805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

LCD displays are preferred over LED displays because they_____

Options :

1. ✘ Are More reliable
2. ✘ Are Cheaper
3. ✘ Respond quickly
4. ✔

Consume less power

Question Number : 191 Question Id : 1592075806 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 anemometers can measure.

Options :

1. ✘ Temperature
2. ✘ Sound
3. ✔ Flow
4. ✘ Level

Question Number : 192 Question Id : 1592075807 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 ultrasonic flow measurement is based on

Options :

1. ✘ Heat flow
- 2.

✘ Magnetic flux

3. ✘ Level

4. ✔ Transit time measurement

Question Number : 193 Question Id : 1592075808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 happens to the viscosity of liquid and gases when the temperature is increased?

Options :

1. ✘ Both decreases

2. ✘ Both increases

3. ✔ Decreases for liquid and increases for gases

4. ✘ Increases for liquid and decreases for gases

Question Number : 194 Question Id : 1592075809 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

The force developed in hydraulic systems is due to _____..

Options :

1. ✓ High pressure
2. ✗ Low pressure
3. ✗ More oil
4. ✗ Less oil.

Question Number : 195 Question Id : 1592075810 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

Continuous measurement of moisture in paper is done by

_____.

Options :

1. ✗ Weighing
2. ✓ High resistance Wheatstone bridge circuit
3. ✗ Hair hygrometer

4. ✘ Sling psychrometer

Question Number : 196 Question Id : 1592075811 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 reversible transducer?

Options :

1. ✘ LVDT

2. ✘ RTD

3. ✘ Capacitive

4. ✔ Piezo electric

Question Number : 197 Question Id : 1592075812 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 infrared communication has _____ data transmission rate, in
comparison RF

Options :

1. ✓ Less
2. ✗ Medium
3. ✗ High
4. ✗ Very high

Question Number : 198 Question Id : 1592075813 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 types of proximity sensors are preferred for liquid level detection?

Options :

1. ✗ Photoelectric
2. ✗ Inductive
3. ✓ Capacitive
4. ✗ Magnetic

Question Number : 199 Question Id : 1592075814 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 acts as quenching as in Geiger Muller counter

Options :

1. ✘ Argon gas

2. ✔ Alcohol

3. ✘ Krypton

4. ✘ Hydrogen

Question Number : 200 Question Id : 1592075815 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 not a type of radiation detectors?

Options :

1. ✘ Semiconductor detector

2. ✘ Geiger Muller counter

3. ✔ Flame emission detector

4. ✖ Proportional counter