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 :	Civil Engineering 3rd Aug 2021 Shift2
Subject Name :	Civil Engineering
Creation Date :	2021-08-03 18:35:31
Duration :	180
Total Marks :	200
Display Marks:	No
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Civil Engineering

Group Number :	1
Group Id :	800894114
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

Mathematics

Section Id :	800894442
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	800894508
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 80089422656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$\text{If } \begin{pmatrix} x+y & z+y \\ z-y & x-2y \end{pmatrix} = \begin{pmatrix} 12 & 9 \\ -1 & -3 \end{pmatrix} \text{ then } \begin{pmatrix} x & y \\ z & 2z \end{pmatrix} =$$

Options :

1. ✖ $\begin{pmatrix} 5 & 7 \\ 4 & 8 \end{pmatrix}$

2. ✔ $\begin{pmatrix} 7 & 5 \\ 4 & 8 \end{pmatrix}$

3. ✖ $\begin{pmatrix} 6 & 7 \\ 3 & 6 \end{pmatrix}$

4. ✖ $\begin{pmatrix} 3 & 6 \\ 6 & 7 \end{pmatrix}$

Question Number : 2 Question Id : 80089422657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $A = \begin{pmatrix} x & y & z \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$ and $B = \begin{pmatrix} x & 2 & 3 \\ y & 5 & 6 \\ z & 8 & 9 \end{pmatrix}$ then

Options :

1. ✔ $\det(A - B) = \det A - \det B$

2. ✖ $\det A - \det B = 1$

3. ✖ $\det A + \det B = x + y + z$

4. ✖ $\det A = -\det B$

Question Number : 3 Question Id : 80089422658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\begin{pmatrix} -a^2 & ab & ac \\ ab & -b^2 & bc \\ ac & bc & -c^2 \end{pmatrix} = Ka^2b^2c^2$ then $K =$

Options :

1. ✔ 4

2. ✖ 6

3. ✖ 8

4. ✖ 2

Question Number : 4 Question Id : 80089422659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the system of equations $x + 2y - 3z = 0, 3x - 2y + z = 0, kx - 14y + 15z = 0$ has nonzero solutions, then $k^2 - 2k - 3 =$

Options :

1. ✔ 12

2. ✖ 18

3. ✖ 5

4. ✖ 0

Question Number : 5 Question Id : 80089422660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The partial fractions of $\frac{x^2+5x+10}{x+2} - \frac{2+6x+x^2}{x+3} =$

Options :

1. ✔ $\frac{4}{x+2} + \frac{7}{x+3}$

2. ✖ $\frac{4}{x+2} - \frac{7}{x+3}$

3. ✖ $\frac{7}{x+2} - \frac{4}{x+3}$

4. ✖ $\frac{4}{x+3} + \frac{7}{x+2}$

Question Number : 6 Question Id : 80089422661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $4^{\log_9 3} + 9^{\log_2 4} = 5^{\log_x 83}$, then

Options :

1. ✖ $x^3 + 4x^2 - 4x - 5 = 0$

2. ✖ $x^3 - 4x^2 - 4x + 5 = 0$

3. ✖ $x^3 - 4x^2 + 4x - 5 = 0$

4. ✔ $x^3 - 4x^2 - 4x - 5 = 0$

Question Number : 7 Question Id : 80089422662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$\log_e x + \log_e(1+x) = 0 \Rightarrow x =$

Options :

1. ✖ $\frac{-1-\sqrt{5}}{2}$

2. ✖ 1

3. ✔ $\frac{-1+\sqrt{5}}{2}$

4. ✖ -2

Question Number : 8 Question Id : 80089422663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\alpha + \beta = \frac{\pi}{2}$ and $\beta + \gamma = \alpha$, then $tan\,\alpha =$

Options :

1. ✖ $2(tan\,\beta + tan\,\gamma)$

2. ✖ $tan\,\beta + tan\,\gamma$

3. ✖ $2\tan\beta+\tan\gamma$

4. ✔ $\tan\beta+2\tan\gamma$

Question Number : 9 Question Id : 80089422664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a triangle ABC , $a^2\cos 2B+b^2\cos 2A+2ab\cos(A-B)=$

Options :

1. ✖ a^2

2. ✖ b^2

3. ✔ c^2

4. ✖ $(a+b+c)^2$

Question Number : 10 Question Id : 80089422665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$f(x)=Sin^{-1}x+\cos^{-1}x+Tan^{-1}\frac{1}{x}+Tan^{-1}x$ then the area (in square units) bounded by y = f(x), y-axis and the line $2y=\pi(x+1)$ is

Options :

1. ✔ $\frac{\pi}{4}$

2. ✖ $\frac{\pi}{2}$

3. ✖ $\frac{\pi}{3}$

4. ✖ π

Question Number : 11 Question Id : 80089422666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$\left(\frac{1+i}{\sqrt{2}}\right)^8+\left(\frac{1-i}{\sqrt{2}}\right)^8=$

Options :

1. ✖ 16

2. ✖ 8

3. ✖ 4

4. ✔ 2

Question Number : 12 Question Id : 80089422667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The maximum value of $|z|$ satisfying the equation $\frac{1}{12}(z+\bar{z})^2=1-\frac{1}{3}|z|^2$ is

Options :

1. ✖ $\sqrt{2}$

2. ✔ $\sqrt{3}$

3. ✖ 4

4. ✖ 6

Question Number : 13 Question Id : 80089422668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If n is a positive integer, then $(-i)^{4n+3} =$

Options :

1. ✖ $2i$

2. ✖ $-i$

3. ✔ i

4. ✖ $4i$

Question Number : 14 Question Id : 80089422669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of the line passing through the point $(4, 0)$ and having intercepts in the ratio is $a: b$ is

Options :

1. ✖ $bx + ay = a$

2. ✔ $bx + ay = 4b$

3. ✖ $bx + ay = b$

4. ✖ $bx + ay = 4a$

Question Number : 15 Question Id : 80089422670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If L_1, L_2 are the angular bisectors of the acute and obtuse angles between the lines $x-y+2=0$ and $7x+y+1=0$ then angle between L_1 and L_2 is

Options :

1. ✖ π

2. ✖ $\frac{\pi}{3}$

3. ✖ $\frac{\pi}{6}$

4. ✔ $\frac{\pi}{2}$

Question Number : 16 Question Id : 80089422671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of the line parallel to the line $x-2y+5=0$ and passing through the point P(3,5) is

Options :

1. ✖ $x-2y+15=0$

2. ✖ $x-2y+6=0$

3. ✖ $x-2y+8=0$

4. ✔ $x-2y+7=0$

Question Number : 17 Question Id : 80089422672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of the circle which touches the coordinate axes is

Options :

1. ✖ $x^2+y^2+2gx+2fy+c=0$

2. ✖ $x^2+y^2+2ax+2ay+a^2=0$

3. ✖ $x^2+y^2\pm 2gx\pm 2fy+c=0$

4. ✔ $x^2+y^2\pm 2ax\pm 2ay+a^2=0$

Question Number : 18 Question Id : 80089422673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\alpha,\beta(\alpha>\beta)$ are roots of the quadratic equation $4x^2-4x-3=0$, then the equation of the circle with center $\left(\frac{\alpha}{\beta}+\frac{\beta}{\alpha},\frac{\alpha}{\beta}-\frac{\beta}{\alpha}\right)$ and radius $\alpha^2-\beta^2$ is

Options :

1. ✔ $9x^2 + 9y^2 + 60x + 48y + 128 = 0$

2. ✖ $9x^2 + 9y^2 + 60x - 48y - 128 = 0$

3. ✖ $9x^2 + 9y^2 - 60x - 48y + 128 = 0$

4. ✖ $9x^2 + 9y^2 - 60x + 48y - 128 = 0$

Question Number : 19 Question Id : 80089422674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of the tangent to the circle $x^2 + y^2 = 25$ at the point $P(3,4)$ is

Options :

1. ✖ $4x+3y-25=0$

2. ✖ $4x+3y+25=0$

3. ✔ $3x+4y-25=0$

4. ✖ $3x+4y-5=0$

Question Number : 20 Question Id : 80089422675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For $x^2 - 9 \neq 0$, if $y = \log\left(e^{x/2}\left(\frac{x-3}{x+3}\right)^{4/5}\right)$, then $\frac{dy}{dx}$ at $x = 1$ is equal to

Options :

1. ✖ $\frac{7}{10}$

2. ✖ $\frac{2}{5}$

3. ✔ $\frac{-1}{10}$

4. ✖ $\frac{-1}{5}$

Question Number : 21 Question Id : 80089422676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For $f(x) = |x^2 - 3x + 2|$, then sum of the values of $\frac{df}{dx}$ at x= 1.5 and at x = 2.5 is

Options :

1. ✔ 2

2. ✖ 6

3. ✖ 4

4. ✖ 8

Question Number : 22 Question Id : 80089422677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$$\frac{d^2}{dx^2}\left(\frac{1}{5x+3}\right)=$$

Options :

1. ✖ $\frac{25}{(5x+3)^3}$

2. ✔ $\frac{50}{(5x+3)^3}$

3. ✖ $\frac{125}{(5x+3)^3}$

4. ✖ $\frac{100}{(5x+3)^3}$

Question Number : 23 Question Id : 80089422678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The curve represented by $x = t^5 - 5t^3 - 20t + 7, y = 4t^3 - 3t^2 - 18t + 3$ is increasing for all t in the interval

Options :

1. ✖ $(-2,2)$

2. ✔ $\left(-1,\frac{3}{2}\right)$

3. ✖ $\left(\frac{3}{2},2\right)$

4. ✖ (-1,2)

Question Number : 24 Question Id : 80089422679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The equation of tangent to the curve $y^2 = 4x + 5$ at P(-1,1) is

Options :

1. ✖ $2x - y + 9 = 0$

2. ✖ $2x + y - 7 = 0$

3. ✔ $2x - y + 3 = 0$

4. ✖ $x + 2y + 9 = 0$

Question Number : 25 Question Id : 80089422680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If at X = a, the maximum value of $(X^5)(16 - X)^{11}$ is K. Then $\frac{K}{a} =$

Options :

1. ✔ $11^{11}5^4$

2. ✖ $6^4 10^{11}$

3. ✖ $11^4 5^{11}$

4. ✖ $10^4 6^{11}$

Question Number : 26 Question Id : 80089422681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $u(x,y)=\text{Sin}^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$ then $x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}=$

Options :

1. ✖ $\frac{1}{8}\tan u$

2. ✔ $\frac{1}{2}\tan u$

3. ✖ $\frac{1}{4}\tan u$

4. ✖ $\frac{1}{3}\tan u$

Question Number : 27 Question Id : 80089422682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\int \frac{2x^{18}+7x^{13}}{(x^7+x^5+1)^3}dx=\frac{x^p}{m(x^7+x^5+1)^n}+c$, then $2p-(m+n)^2=$

Options :

1. ✖ 0

2. ✖ 3

3. ✔ 12

4. ✖ 20

Question Number : 28 Question Id : 80089422683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $\int \frac{Sin\,2x}{Sin\,5x\,Sin\,3x}dx = A\,log\,Sin\,3\,x + Blog\,Sin\,5\,x + C$, then A + B=

Options :

1. ✖ 2/7

2. ✖ 1/3

3. ✖ -2/5

4. ✔ 2/15

Question Number : 29 Question Id : 80089422684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$$\int \frac{1}{9x^2-4}dx =$$

Options :

1. ✖

$\frac{1}{3}\log\left|\frac{3x-2}{3x+2}\right|$

2. ✖ $\frac{1}{12}\log\left|\frac{x-2}{x+2}\right|$

3. ✔ $\frac{1}{12}\log\left|\frac{3x-2}{3x+2}\right|$

4. ✖ $\frac{1}{2}\log\left|\frac{3x-2}{3x+2}\right|$

Question Number : 30 Question Id : 80089422685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $I_1 = \int_0^1 a^x dx$, $I_2 = \int_0^1 a^{x^2} dx$ and $I_3 = \int_0^1 a^{x^3} dx$ then

Options :

1. ✔ $I_1 > I_2 > I_3$ when a > 1

2. ✖ $I_1 < I_2 < I_3$, when a > 1

3. ✖ $I_1 > I_2 > I_3$, when 0 < a < 1

4. ✖ $I_1 < I_2 < I_3$ for any a > 0

Question Number : 31 Question Id : 80089422686 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

The area (in square units) bounded by the curve $x^2 = 4y$, the x-axis and the line $x = 2$ is

Options :

1. ✖ $\frac{1}{3}$

2. ✔ $\frac{2}{3}$

3. ✖ $\frac{5}{3}$

4. ✖ $\frac{7}{3}$

Question Number : 32 Question Id : 80089422687 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✖ $\frac{1}{2}$

3. ✖ e^2

4. ✔ $log2$

Question Number : 33 Question Id : 80089422688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Using Trapezoidal rule with $h=\frac{1}{2}$, the value of the integral $\int_0^1 \frac{1}{3+2x}dx=$

Options :

1. ✖ $\frac{11}{120}$

2. ✖ $\frac{21}{120}$

3. ✔ $\frac{31}{120}$

4. ✖ $\frac{41}{120}$

Question Number : 34 Question Id : 80089422689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The differential equation representing the family of curves $y^2 = 2c(x+\sqrt{c})$ (c is a positive arbitrary Constant) is of

Options :

1. ✖ degree 1

2. ✖ order 2

3. ✔ degree 3

4. ✖ degree 2

Question Number : 35 Question Id : 80089422690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The general solution of $\frac{dy}{dx} = \frac{x^2+4x-9}{x+2}$ is

Options :

1. ✔ $y = \frac{(x+2)^2}{2} - 13\,log|x+2| + c$

2. ✖ $y = (x+2)^2 - 5\,log|x+2| + c$

3. ✖ $y = \frac{x^2}{2} + 2x + 13\,log|x+2| + c$

4. ✖ $y = \frac{x^2}{2} + 2x - 5\,log|x+2| + c$

Question Number : 36 Question Id : 80089422691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖

$e^{\frac{x}{y}} = \log|cx|$

2. ✔ $e^{\frac{y}{x}} = \log|cx|$

3. ✖ $e^{\frac{x^2}{y}} = \log|cx|$

4. ✖ $e^{\frac{x}{y^2}} = \log|cx|$

Question Number : 37 Question Id : 80089422692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$\frac{dy}{dx} = \frac{f(x,y)}{g(x,y)}$ is a homogeneous differential equation. The substitution y = Vx (V is a function of x) reduces the given differential equation to $\frac{dV}{dx} = \frac{1}{x}G(V)$. Then G(V)=

Options :

1. ✔ $\frac{f(1,V)}{g(1,V)} - V$

2. ✖ $\frac{f(V)}{g(V)} - V$

3. ✖ $\frac{f(1,V)}{g(1,V)} + V$

4. ✖ $\frac{f(V)}{g(V)} + V$

Question Number : 38 Question Id : 80089422693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The general solution of the differential equation $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + y = e^{-x}Sin\ x$ is

Options :

1. ✖ $y = e^{-x}(A + Bx) + \frac{e^{-x}Sin\ x}{5}$

2. ✔ $y = e^{-x}(A + Bx - sinx)$

3. ✖ $y = e^{-x}(A + Bx) + \frac{e^{-x}cos\ x}{5}$

4. ✖ $y = e^{-x}(A + Blogx) + \frac{e^{-x}Sin\ x}{5}$

Question Number : 39 Question Id : 80089422694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The particular integral of the differential equation $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + y = xe^x \sin x$ is

Options :

1. ✔ $-e^x(x\sin x + 2\cos x)$

2. ✖ $-e^x(x\cos x + 2\sin x)$

3. ✖ $e^x(x\sin x - 2\cos x)$

4. ✖ $e^x(x\cos x - 2\sin x)$

Question Number : 40 Question Id : 80089422695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $L\{t^2e^{-2t}\} = f(s)$, then $f(4) =$

Options :

1. ✖ $\frac{1}{54}$

2. ✖ $\frac{1}{27}$

3. ✔ $\frac{1}{108}$

4. ✖ $\frac{1}{216}$

Question Number : 41 Question Id : 80089422696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $L[f(t)] = \frac{9s^2-12s+15}{(s-1)^3}$, then $L\left[f\left(\frac{t}{3}\right)\right] =$

Options :

1. ✔ $9\left[\frac{27s^2-36s+5}{(3s-1)^3}\right]$

2. ✖ $9\left[\frac{s^2-4s+15}{(s-3)^3}\right]$

3. ✖ $3\left[\frac{27s^2-12s+5}{(3s-1)^3}\right]$

4. ✖ $27\left[\frac{s^2-4s+15}{(s-3)^3}\right]$

Question Number : 42 Question Id : 80089422697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$$\int_0^{\infty} \frac{e^{-5t}-e^{-8t}}{t} dt =$$

Options :

1. ✖ $\log\left(\frac{4}{5}\right)$

2. ✖ $\log\left(\frac{2}{5}\right)$

3. ✔ $\log\left(\frac{8}{5}\right)$

4. ✖ $\log\left(\frac{7}{5}\right)$

Question Number : 43 Question Id : 80089422698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $F_a(s) = \mathrm{L}(\sin at)$ then, $\mathrm{L}\left(\frac{e^{-3t}\sin 2t}{t}\right) =$

Options :

1. ✖ $\int_s^\infty F_2(s)ds$

2. ✔ $\int_s^\infty F_2(s+3)ds$

3. ✖ $\int_s^\infty \frac{d}{ds}(F_2(s))ds$

4. ✖ $-\int_s^\infty \frac{d}{ds}(F_2(s-3))ds$

Question Number : 44 Question Id : 80089422699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$$L^{-1}\left\{\frac{6s}{s^2+2s-8}\right\}$$

Options :

1. ✖ $4e^{-4t}+2e^{-2t}$

2. ✖ $4e^{4t}+2e^{-2t}$

3. ✖ $4e^{4t}+2e^{2t}$

4. ✔ $4e^{-4t}+2e^{2t}$

Question Number : 45 Question Id : 80089422700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If L(f(t)) =F(S), L(g(t)) = G(s), then $L^{-1}(F(s)\,G(s))$=

Options :

1. ✔ $\int_0^t f(p)g(t-p)\,dp$

2. ✖ $\int_0^t f(t)g(t)\,dt$

3. ✖ $\int_0^t f(t)g(t-p)\,dp$

4. ✖ $\int_0^t f(tp)g(t/p)\,dt$

Question Number : 46 Question Id : 80089422701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $y = y(t)$ satisfies the differential equation $\frac{d^2y}{dt^2} - 2\frac{dy}{dt} + y = e^t$ together with the conditions $y(0) = 2, \frac{dy}{dt} = -1$ at $t = 0$, then $y(t) =$

Options :

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

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

3. ✖ $e^t\left(2 - 3t - \frac{1}{2}t^2\right)$

4. ✖ $e^t\left(2 + 3t - \frac{1}{2}t^2\right)$

Question Number : 47 Question Id : 80089422702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

$$\int_0^{2\pi} \cos^2(5x)dx =$$

Options :

1. ✔ π

2. ✖ 2π

3. ✖ 4π

4. ✖ 5π

Question Number : 48 Question Id : 80089422703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Fourier series of $x-x^2$ in the interval $(-\pi, \pi)$ contains

Options :

1. ✖ only sine terms

2. ✖ onlycosine terms

3. ✔ both sine and cosine terms

4. ✖ negative integral powers of x, but not trigonometric functions

Question Number : 49 Question Id : 80089422704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(x) = x^3$ when $0 \le x \le 4, f(x+4) = f(x), \forall x$ and its Fourier series is $f(x) = \sum_{n=0}^{\infty}(a_n \cos\frac{n\pi x}{2} + b_n \sin\frac{n\pi x}{2})$, then $b_1 =$

Options :

1. ✖ $\frac{128}{\pi^2} + \frac{192}{\pi^4}$

2. ✖ $\frac{128}{\pi^2}$

3. ✖ $\frac{192}{\pi^2} + \frac{192}{\pi^4}$

4. ✔ $\frac{96}{\pi^3} - \frac{128}{\pi}$

Question Number : 50 Question Id : 80089422705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If $f(x) = \begin{cases} 0, & -2 \le x < 0 \\ 1, & 0 \le x < 2 \end{cases}$, $f(x+4) = f(x)\ \forall x$ and $f(x) = \sum_{n=0}^{\infty}(a_n \cos\frac{n\pi x}{2} + b_n \sin\frac{n\pi x}{2})$, then $b_2 =$

Options :

1. ✖ $\frac{2}{\pi}$

2. ✖ $\frac{4}{\pi}$

3. ✖ $\frac{3}{\pi}$

4. ✔ 0

Physics

Section Id :	800894443
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
Sub-Section Number :	1
Sub-Section Id :	800894509
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 80089422706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Dimensional formula of potential energy is

Options :

1. ✖ MLT^{-2}

2. ✔ ML^2T^{-2}

3. ✖ ML^2T^{-1}

4. ✖ MLT^{-1}

Question Number : 52 Question Id : 80089422707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In case of a superconductor one among the following statement is incorrect

Options :

1. ✖ The resistivity drops suddenly at transition temperature

2. ✔ It is paramagnetic below it's transition temperature

3. ✖ Specific heat discontinuity occurs at transition temperature

4. ✖ It will become diamagnetic below it's transition temperature

Question Number : 53 Question Id : 80089422708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following statements is true regarding super conductors?

Options :

1. ✖ super conductors have high resistance at very low temperatures, and they are perfectly diamagnetic

2. ✖ super conductors have high resistance at very low temperatures, and they are perfectly ferro magnetic

3. ✖ super conductors have zero resistance at very low temperatures, and they are perfectly para magnetic

4. ✔ super conductors have zero resistance at very low temperatures, and they are perfectly dia magnetic

Question Number : 54 Question Id : 80089422709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the temperature remains constant the volume of the gas will

Options :

1. ✔ Increase with decrease in pressure

2. ✖ Decrease with decrease in pressure

3. ✖ Not change with change in pressure

4. ✖ Increase with increase in pressure

Question Number : 55 Question Id : 80089422710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A gas at a pressure of 150 Nm^{-2} is compressed to half its original volume. If the expansion is isothermal, the final pressure will be

Options :

1. ✖

100 Nm^{-2}

2. ✖ 150 Nm^{-2}

3. ✖ 200 Nm^{-2}

4. ✔ 300 Nm^{-2}

Question Number : 56 Question Id : 80089422711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The first law of thermodynamics is the law of

Options :

1. ✖ Conservation of mass

2. ✖ Conservation of momentum

3. ✔ Conservation of energy

4. ✖ Conservation of temperature

Question Number : 57 Question Id : 80089422712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two equal vectors have a resultant equal to either. The angle between them will be

Options :

1. ✖ 30°

2. ✖ 90°

3. ✔ 120°

4. ✖ 180°

Question Number : 58 Question Id : 80089422713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The vectors $\vec{A}$ *and* $\vec{B}$ are such that if $|\vec{A}+\vec{B}|=|\vec{A}-\vec{B}|$ then the angle between $\vec{A}$ *and* $\vec{B}$ will be

Options :

1. ✔ 90°

2. ✖ 0°

3. ✖ 180°

4. ✖ $\text{Cos}\theta$

Question Number : 59 Question Id : 80089422714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The value of λ for which the two vectors:

$3\hat{\imath}-\hat{\jmath}+\hat{k}$ and $2\hat{\imath}+\lambda\hat{\jmath}+2\hat{k}$ are perpendicular is

Options :

1. ✖ -8

2. ✔ 8

3. ✖ 4

4. ✖ 2

Question Number : 60 Question Id : 80089422715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In case of an oblique projection, which statement is true with regard to its velocity components?

Options :

1. ✖ Vertical and horizontal components change

2. ✖ Vertical and horizontal components do not change

3. ✔ Vertical component changes but horizontal component remains constant

4. ✖ Vertical component remains constant but horizontal component changes

Question Number : 61 Question Id : 80089422716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

An insect can jump a maximum horizontal distance of 20 cm. If it spends negligible time on the ground, with what speed can it travel along the road.

Options :

1. ✖ 0.1 m/s

2. ✔ 1.0 m/s

3. ✖ 0.14 m/s

4. ✖ 1.4 m/s

Question Number : 62 Question Id : 80089422717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A person holds a book weighing 1 kg between his hands and keeps it from falling by pressing his hands together. If the minimum force exerted by each hand horizontally is 49 N, what will be the coefficient of friction between the book and his hands

Options :

1. ✖ 1

2. ✖ 10

3. ✔ 0.1

4. ✖ 0.01

Question Number : 63 Question Id : 80089422718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A ball rolled on ice with a velocity of 8 ms^{-1} comes to rest after travelling 40 m. If the value of g = 9.8 ms^{-2}, the coefficient of friction is

Options :

1. ✖ 0.328

2. ✔ 0.0816

3. ✖ 0.0416

4. ✖ 0.258

Question Number : 64 Question Id : 80089422719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which one of the following is not the unit of energy?

Options :

1. ✔ Kilowatt

2. ✖ Kilowatt hour

3. ✖ Joule

4. ✖ Newton meter

Question Number : 65 Question Id : 80089422720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The principle of conservation of energy states that

Options :

1. ✔ Sum of all types of energies is conserved

2. ✖ Total mechanical energy is conserved

3. ✖ Total kinetic energy is conserved

4. ✖ Total potential energy is conserved

Question Number : 66 Question Id : 80089422721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For a body moving with simple harmonic motion, the number of cycles per second, is known as its

Options :

1. ✖ Oscillation

2. ✖ Amplitude

3. ✖ Periodic time

4. ✔ Frequency

Question Number : 67 Question Id : 80089422722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The acceleration of particle executing S.H.M. when it is at mean position is

Options :

1. ✖ Infinite

2. ✔ Zero

3. ✖ Maximum

4. ✖ Unity

Question Number : 68 Question Id : 80089422723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the length of a simple pendulum executing simple harmonic motion is increased by 69% then the percentage increases in the time period of the simple pendulum of increased length will be

Options :

1. ✔ 30 %

2. ✖ 330 %

3. ✖ 3.0 %

4. ✖ 33 %

Question Number : 69 Question Id : 80089422724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The longitudinal waves can not

Options :

1. ✖ Have a unique wave velocity

2. ✔ Be polarized

3. ✖ Have a unique wavelength

4. ✖ Transmit energy

Question Number : 70 Question Id : 80089422725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A cinema hall has a volume of 2800 m^3 and total surface absorption is 225 O.W.U. The reverberation time will be

Options :

1. ✖ 1.90 s

2. ✔ 1.99 s

3. ✖ 2.25 s

4. ✖ 2.40 s

Question Number : 71 Question Id : 80089422726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Stress is

Options :

1. ✖ External force

2. ✔ Internal resistive force

3. ✖ Axial force

4. ✖ Radial force

Question Number : 72 Question Id : 80089422727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following statements is false?

Options :

1. ✔ Viscosity is independent of the surface area of liquid layers in contact

2. ✖ Viscosity of a fluid changes with temperature

3. ✖ The dimensions of viscosity is same as that of the product of pressure and time

4. ✖ The viscous force is directed opposite to the direction of motion of liquid

Question Number : 73 Question Id : 80089422728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A wire having uniform diameter (d) and length (l) has a resistance R. Another wire having same material but having diameter 2d and length 4l, then it's resistance will be

Options :

1. ✔ R

2. ✖ R/2

3. ✖ R/4

4. ✖ 2R

Question Number : 74 Question Id : 80089422729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a meter bridge experiment, the ratio of the left gap resistance to right gap resistance is 2:3. The balance point from left is

Options :

1. ✔ 40 cm

2. ✖ 45 cm

3. ✖ 60 cm

4. ✖ 65 cm

Question Number : 75 Question Id : 80089422730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A magnet when placed at right angles to the earth's horizontal magnetic induction 2×10^{-5} Wb/m^2 experiences a couple of 2×10^{-5} Nm. Then, the magnetic moment of magnet is

Options :

1. ✔ $1\ Am^2$

2. ✖ $1.5\ Am^2$

3. ✖ $5\ Am^2$

4. ✖ $7.5\ Am^2$

Chemistry

Section Id :	800894444
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	800894510
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 80089422731 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

When an electron drops from 4s orbital to 2s orbital in an hydrogen atom, the frequency of radiation emitted belong to which region (Rydberg constant = 1.097 x10^{7} m^{-1})

Options :

1. ✖ Ultraviolet region

2. ✔ Visible region

3. ✖ Infrared region

4. ✖ Microwave region

Question Number : 77 Question Id : 80089422732 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

Which of the following is true about ionic compounds?

Options :

1. ✖ Ionic compounds conduct electricity when dissolved in water

2. ✖ Ionic compounds are not soluble in water.

3. ✖ Ionic compounds are crystalline solids.

4. ✔ Ionic compounds conduct electricity when dissolved in water & Ionic compounds are crystalline solids.

Question Number : 78 Question Id : 80089422733 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

Oxidation state of Fe in Fe_3O_4 is

Options :

1. ✔ 8/3

2. ✖ 3/8

3. ✖ 3/2

4. ✖ – 3/8

Question Number : 79 Question Id : 80089422734 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

In a sample of salt water, NaCl would be considered as?

Options :

1. ✖ Solution

2. ✔ Solute

3. ✖ Solvent

4. ✖ Solvation

Question Number : 80 Question Id : 80089422735 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

30 mL of 0.1 m Mohr's salt solution is titrated in acid medium against 0.1M $K_2Cr_2O_7$ solution taken in the burette. The volume of $K_2Cr_2O_7$ solution required at the end point after the addition of suitable indicator is

Options :

1. ✖ 30 mL

2. ✔ 5 mL

3. ✖ 10 mL

4. ✖ 15 mL

Question Number : 81 Question Id : 80089422736 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

What volume of 12.6 M HCl must be added to enough water to prepare 5.00 liters of 3.00M HCl?

Options :

1. ✖ 21.0 L

2. ✖ 0.840 L

3. ✔ 1.19 L

4. ✖ 7.56 L

Question Number : 82 Question Id : 80089422737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Choose the correct statement from given options below for the equilibrium reaction

$HClO_4 + H_2O \leftrightarrow H_3O^+ + ClO_4^-$

Options :

1. ✖ $HClO_4$ is the conjugate acid of H_2O

2. ✖ H_3O^+ is the conjugate base of H_2O

3. ✖ H_2O is the conjugate acid of H_3O^+

4. ✔ ClO_4^- is the conjugate base of $HClO_4$

Question Number : 83 Question Id : 80089422738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Three unknown solutions are given with pH value of 6, 8 & 9.5 respectively. Which solution will contain the maximum OH^- ion?

Options :

1. ✖ Solution sample-1

2. ✖ Solution sample-2

3. ✔ Solution sample-3

4. ✖ Data are insufficient

Question Number : 84 Question Id : 80089422739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An example of acidic buffer solution is a mixture of

Options :

1. ✖ NH_4OH, NH_4Cl

2. ✖ HCl, NaCl

3. ✖ CH_3COOH, NH_4OH

4. ✔ CH_3COOH, CH_3COONa

Question Number : 85 Question Id : 80089422740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A mineral is called an ore if?

Options :

1. ✖ Metal present in mineral is precious

2. ✔ Metal can be extracted profitably from mineral

3. ✖ Metal cannot be extracted

4. ✖ metal has good malleability

Question Number : 86 Question Id : 80089422741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Concentration of sulphide ore will be done by

Options :

1. ✔ Froath floatation

2. ✖ Roasting

3. ✖ Sedimentation

4. ✖ Smelting

Question Number : 87 Question Id : 80089422742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

One of the following will be occurred at the anode, during the electrolysis of fused NaCl.

Options :

1. ✖ Na^- gets reduced

2. ✔ Cl^- gets oxidized

3. ✖ Na^- gets oxidized

4. ✖ Na^+ gets oxidized

Question Number : 88 Question Id : 80089422743 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

Electrolysis of dilute aqueous NaCl solution was carried out by passing 10 milliampere current. The time required to liberate 0.01 mol of H_2 gas at the cathode is?

Options :

1. ✖ 9.65×10^4 s

2. ✖ 28.95×10^4 s

3. ✔ 19.3×10^4 s

4. ✖ 38.6×10^4 s

Question Number : 89 Question Id : 80089422744 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

Standard reduction potential value of saturated calomel electrode is

Options :

1. ✖ + 0.268

2. ✖ + 0.6994

3. ✖ + 0.0242

4. ✔ + 0.2415

Question Number : 90 Question Id : 80089422745 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

In the protection of Iron structure by sacrificial anode method , the metal used as anode

Options :

1. ✖ Silver

2. ✖ Zinc

3. ✔ Magnesium

4. ✖ Lead

Question Number : 91 Question Id : 80089422746 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

In electrolytic conductors, the conductance is due to

Options :

1. ✖ Free movement of electrons

2. ✖ Restricted movement of electrons

3. ✖ Restricted movement of ions

4. ✔ Free movement of ions

Question Number : 92 Question Id : 80089422747 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

Choose the incorrect statement from the following options.

Options :

1. ✖ In hard water, the detergent values of soap are decreased

2. ✔ In the presence of dissolved hardness producing salts, the boiling point of water is decreased

3. ✖ The water which does not form lather with soap is called hard water

4. ✖ The hard water consists of calcium and magnesium salts in dissolved state

Question Number : 93 Question Id : 80089422748 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

In high pressure boilers, scale formation can be avoided by adding

Options :

1. ✖ Na_2CO_3

2. ✔ Sodium phosphate

3. ✖ NaOH

4. ✖ Sodium meta Aluminate

Question Number : 94 Question Id : 80089422749 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

The basis of reverse osmosis is

Options :

1. ✖ Osmotic pressure is greater than the hydrostatic pressure

2. ✖ Osmotic pressure is equal to the hydrostatic pressure

3. ✔ Hydrostatic pressure is greater than the osmotic pressure

4. ✖ Osmotic pressure does not exist

Question Number : 95 Question Id : 80089422750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A thermoplastic is formed by the phenomenon of

Options :

1. ✔ Chain polymerization

2. ✖ Condensation polymerization

3. ✖ Chlorination

4. ✖ Nitration

Question Number : 96 Question Id : 80089422751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Natural rubber is a polymer of?

Options :

1. ✖ 1, 1-Dimethylbutadiene

2. ✔ 2-Methyl-1, 3-butadiene

3. ✖ 2-Chlorobuta-1,3-diene

4. ✖ 2-Chlorobut-2-ene

Question Number : 97 Question Id : 80089422752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Identify the correct statement from the following

Options :

1. ✖ A good fuel should undergo spontaneous combustion

2. ✖ A good fuel should have high moisture content

3. ✔ A good fuel should have high calorific value

4. ✖ A good fuel should have high content of non-combustible matter

Question Number : 98 Question Id : 80089422753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Laboratory gas is obtained by cracking

Options :

1. ✖ Coal

2. ✖ Diesel oil

3. ✖ Petrol

4. ✔ Kerosene oil

Question Number : 99 Question Id : 80089422754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In sewage when the concentration of decomposable organic matter is large, then

Options :

1. ✔ BOD value is high

2. ✔ COD value is high

3. ✖ BOD value is low

4. ✖ COD value is low

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

Question Number : 100 Question Id : 80089422755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

From the following options given below, what is the major non-renewable energy usage in India ?

Options :

1. ✔ Coal

2. ✖ Petroleum and other liquids

3. ✖ Natural gas

4. ✖ Nuclear

Civil Engineering

Section Id :	800894445
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	800894511
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 80089422756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two forces of magnitude equal to 2P and P respectively act on a particle. If the first force is to be doubled and the second increased by 12N, if the direction of resultant is unaltered then value of P is

Options :

1. ✖ 15N

2. ✔ 12N

3. ✖ 10N

4. ✖ 8N

Question Number : 102 Question Id : 80089422757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Dividing the X-axis component and the Y-axis component of the of the vector making an angle α with Y-axis will give us.

Options :

1. ✖ Cot α

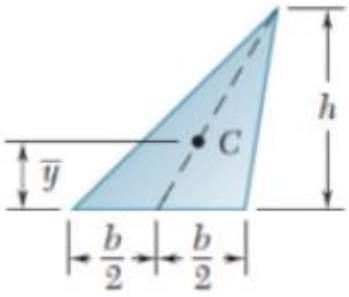
2. ✔ Tan α

3. ✖ Sec α

4. ✖ 1

Question Number : 103 Question Id : 80089422758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The '$\bar{y}$' distance from the following figure



Options :

1. ✖ h/2

2. ✖ 2h/3

3. ✔ h/3

4. ✖ h/4

Question Number : 104 Question Id : 80089422759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The centroid of a trapezium with bottom width 9m and top width 6m and height 5m is

Options :

1. ✔ 2.33m

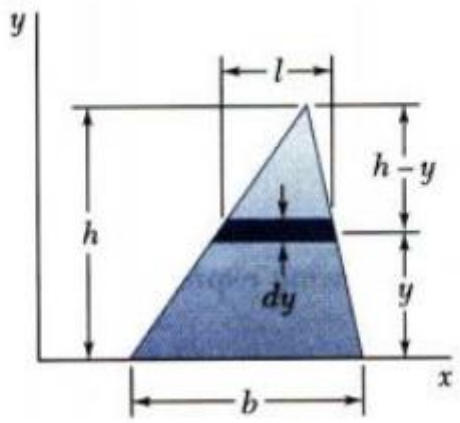
2. ✖ 2.53m

3. ✖ 2.43m

4. ✖ 2.23m

Question Number : 105 Question Id : 80089422760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The moment of inertia of the following section



Options :

1. ✖ $I_x = Bh^3/6$

2. ✖ $I_x = Bh^3/8$

3. ✖ $I_x = Bh^3/2$

4. ✔ $I_x = Bh^3/12$

Question Number : 106 Question Id : 80089422761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Moment of inertia of a circular area about an axis perpendicular to the area passing through its center is given as

Options :

1. ✖ $\pi d^4/8$

2. ✖ $\pi d^4/16$

3. ✔ $\pi d^4/32$

4. ✖ $\pi d^4/64$

Question Number : 107 Question Id : 80089422762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The stress at which a material fractures under large number of reversal of stress is called

Options :

1. ✖ Elastic limit

2. ✖ Proportionality limit

3. ✖ Tolerance limit

4. ✔ Endurance limit

Question Number : 108 Question Id : 80089422763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Creep is a gradual increase of

Options :

1. ✔ Plastic strain with time at constant load

2. ✖ Elastic strain with time at constant load

3. ✖ Plastic strain with time at varying load

4. ✖ Elastic strain with time at varying load

Question Number : 109 Question Id : 80089422764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If a material has identical elastic properties in all directions is said to be

Options :

1. ✖ Elastic

2. ✖ Orthotropic

3. ✔ Isotropic

4. ✖ Homogeneous

Question Number : 110 Question Id : 80089422765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Proof Resilience is the maximum strain energy stored in a body at

Options :

1. ✖ Elastic Limit

2. ✖ Plastic Limit

3. ✔ Limit of Proportionality

4. ✖ Rupture point

Question Number : 111 Question Id : 80089422766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What will be the effective length of a column when both ends fixed?

Options :

1. ✖ L

2. ✖ 2L

3. ✔ 0.5L

4. ✖ 0.707L

Question Number : 112 Question Id : 80089422767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Two people weighing 'W', each are sitting on either side of a simply supported plank of length 'L' at a distance of L/4 from either end. Neglecting weight of the plank, the bending moment at center of plank is

Options :

1. ✖ WL/8

2. ✖ WL/16

3. ✖ WL/32

4. ✔ WL/4

Question Number : 113 Question Id : 80089422768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The point where Bending Moment changes its sign is known as

Options :

1. ✔ Point of Contraflexure

2. ✖ Point of Inflexion

3. ✖ Point of Curvature

4. ✖ Point of Tangency

Question Number : 114 Question Id : 80089422769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A homogeneous simply supported prismatic beam of width B , depth D and span L is subjected to a centrally placed concentrated load of magnitude P. The maximum flexural stress developed in beam is

Options :

1. ✖ $\frac{2}{3}\frac{PL}{BD^2}$

2. ✖ $\frac{3}{4}\frac{PL}{BD^2}$

3. ✖ $\frac{4}{3}\frac{PL}{BD^2}$

4. ✔ $\frac{3}{2}\frac{PL}{BD^2}$

Question Number : 115 Question Id : 80089422770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Variation of shear stress distribution for a rectangular section

Options :

1. ✖ Linear

2. ✖ Constant

3. ✔ Square parabola

4. ✖ Cubic parabola

Question Number : 116 Question Id : 80089422771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

what is the slope at the fixed end when moment M is applied at free end?

(L= length of beam EI= flexural rigidity)

Options :

1. ✖ ML/EI

2. ✔

0

3. ✖ ML/2EI

4. ✖ ML/4EI

Question Number : 117 Question Id : 80089422772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The variation of torsional shear stress is

Options :

1. ✖ Square Parabola

2. ✔ Linear

3. ✖ Constant

4. ✖ Cubic Parabola

Question Number : 118 Question Id : 80089422773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Maximum shear stress in a hollow shaft subjected to torsional moment is at

Options :

1. ✖ Middle thickness

2. ✖ At Inner surface of the shaft

3. ✔ At outer surface of the shaft

4. ✖ At center of the shaft

Question Number : 119 Question Id : 80089422774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the pure bending condition of a beam?

Options :

1. ✔ shear force =0, bending moment=constant

2. ✖ shear force =non zero constant, bending moment=constant

3. ✖ shear force =non zero constant, bending moment=0

4. ✖ shear force =constant, bending moment=constant

Question Number : 120 Question Id : 80089422775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What will be the effective length of a column of length L with one end is fixed and other end is free?

Options :

1. ✖ L

2. ✔ 2L

3. ✖ 0.5L

4. ✖ 0.707L

Question Number : 121 Question Id : 80089422776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A shaft subjected to a torsion of 200πNm which has a diameter of 100mm, then what will be the torsional shear stress?

Options :

1. ✖ $2.6\ N/mm^2$

2. ✖ $2.1N/mm^2$

3. ✖ $2.2N/mm^2$

4. ✔ $3.2N/mm^2$

Question Number : 122 Question Id : 80089422777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A uniform circular bar of length L, diameter d is extended by an amount δ under a tensile load of F, if the bar is used as beam, simply supported at ends and carries a central point load W, then the deflection is given by

Options :

1. ✔ $\frac{W\delta L^2}{3Fd^2}$

2. ✖ $\frac{W\delta L^2}{Fd^2}$

3. ✖ $\frac{W\delta L^2}{2Fd^2}$

4. ✖ $\frac{W\delta L^2}{4Fd^2}$

Question Number : 123 Question Id : 80089422778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

.The variation of bending stress across the cross section at any point on the length of the beam is

Options :

1. ✖ square parabola

2. ✔ linear

3. ✖ constant

4. ✖ cubic parabola

Question Number : 124 Question Id : 80089422779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The buckling load of a column depends upon

Options :

1. ✖ Poisson's ratio, Slenderness ratio

2. ✖ Poisson's ratio, Modulus of elasticity

3. ✖ Slenderness ratio , Load on a column

4. ✔ Slenderness ratio, Modulus of elasticity

Question Number : 125 Question Id : 80089422780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

What is the maximum deflection of a simply supported beam when subjected to udl (w) over entire length ?

(L= length of beam EI= flexural rigidity)

Options :

1. ✖ $3wL^4/384EI$

2. ✔ $5wL^4/384EI$

3. ✖ $3wL^4/576EI$

4. ✖ $5wL^4/576EI$

Question Number : 126 Question Id : 80089422781 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The maximum compressive stress in concrete in limit state design is taken as

Options :

1. ✔ $0.446f_{ck}$

2. ✖ $0.36f_{ck}$

3. ✖ $0.54f_{ck}$

4. ✖ f_{ck}

Question Number : 127 Question Id : 80089422782 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Shear span is defined as the zone where

Options :

1. ✖ Bending moment is zero

2. ✖ Shear force is zero

3. ✔ Shear force is constant

4. ✖ Bending moment is constant

Question Number : 128 Question Id : 80089422783 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A doubly reinforced beam is recommended when

Options :

1. ✔ The depth of beam is restricted

2. ✖ The breadth of beam is restricted

3. ✖ Both the depth and breadth of beam is restricted

4. ✖ Shear is very high

Question Number : 129 Question Id : 80089422784 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the design of two way slab restrained at all edges, torsion reinforcement required is

Options :

1. ✖ 0.75 times the area of steel provided at mid-span in same direction

2. ✖ 0.375 times the area of steel provided at mid-span in same direction

3. ✔ 0.75 times the area of steel provided at shorter span

4. ✖ 0.375 times the area of steel provided at shorter span

Question Number : 130 Question Id : 80089422785 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum spacing of shear reinforcement measured along the axis of the member shall not exceed

_____ for vertical stirrups

Options :

1. ✔ 0.75d

2. ✖ d

3. ✖ 450mm

4. ✖ 250mm

Question Number : 131 Question Id : 80089422786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a two way slab lifting of corners occurs due to

Options :

1. ✖ Resultant shear force at the ends

2. ✔ Torsional moment on the slab

3. ✖ Resultant stress at the ends

4. ✖ Unbalanced moment on the slab

Question Number : 132 Question Id : 80089422787 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The limiting moment of resistance of a singly reinforced concrete beam of width 200mm and effective depth of 400 mm for M20 grade concrete and Fe 415 steel is given by

Options :

1. ✖ 85 kN-m

2. ✔ 88.37kN-m

3. ✖ 82.37kN-m

4. ✖ 73.48kN-m

Question Number : 133 Question Id : 80089422788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Deflections of doubly reinforced beams are _____ compared to singly reinforced beams of same depth

Options :

1. ✖ More

2. ✔ Less

3. ✖ Equal

4. ✖ No change

Question Number : 134 Question Id : 80089422789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Why is the design of Reinforced concrete section as over reinforced section is undesirable ?

Options :

1. ✖ It consumes more concrete

2. ✖ It undergoes high strains

3. ✔ It fails suddenly

4. ✖ Its appearance is not good

Question Number : 135 Question Id : 80089422790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The effective length of a column in building frames given in IS:456-2000 are based on

Options :

1. ✔ Woods tables

2. ✖ Wreslers tables

3. ✖ Mohrs tables

4. ✖ Breslers tables

Question Number : 136 Question Id : 80089422791 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The minimum number of bars in circular R.C.C column is

Options :

1. ✖ 4

2. ✔ 6

3. ✖ 8

4. ✖ 5

Question Number : 137 Question Id : 80089422792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The section at which greatest bending moment occurs for footing under masonry wall is

Options :

1. ✖ at Face of pedestal

2. ✖ at edge of wall

3. ✔ Half way between the center line of pedestal and edge of the wall

4. ✖ Quarter way between the center line of pedestal and wall

Question Number : 138 Question Id : 80089422793 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Working stress method is based on

Options :

1. ✖ Plastic theory

2. ✔ Elastic theory

3. ✖ Elasto-plastic theory

4. ✖ Yield-line theory

Question Number : 139 Question Id : 80089422794 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Modular ratio depends upon

Options :

1. ✖ Modulus of elasticity of concrete

2. ✖ Compressive stress in concrete in bending

3. ✔ Grade of concrete

4. ✔ Grade of steel

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

Question Number : 140 Question Id : 80089422795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

As per working stress method the development length of bars in compression is given by φ = nominal diameter of

the bar σ_{sc} = stress in bar at the section. τ_{bd} = design bond stress

Options :

1. ✔

$\frac{\sigma_{sc}\emptyset}{5\tau_{bd}}$

2. ✖ $\frac{\sigma_{sc}\emptyset}{4\tau_{bd}}$

3. ✖ $\frac{\sigma_{sc}\emptyset}{3\tau_{bd}}$

4. ✖ $\frac{\sigma_{sc}\emptyset}{\tau_{bd}}$

Question Number : 141 Question Id : 80089422796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is largest scale?

Options :

1. ✔ 1cm=50m

2. ✖ 1:42000

3. ✖ 1cm=5000m

4. ✖ 1cm=5km

Question Number : 142 Question Id : 80089422797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The sum of the interior angles of a closed traverse having 'n' number of sides is equal to …….

Options :

1. ✔ $(2n-4) \times 90°$

2. ✖ $(2n+4) \times 90°$

3. ✖ $(n-4) \times 90°$

4. ✖ $(n+4) \times 45°$

Question Number : 143 Question Id : 80089422798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Fore Bearing of line was measured as 165°, what is the Back Bearing of that line in quadrant system (Reduced Bearing)

Options :

1. ✖ 345°

2. ✖ N15°E

3. ✔ N15°W

4. ✖ S15°W

Question Number : 144 Question Id : 80089422799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A line PQ was drawn to have a magnetic bearing of $10^0\ 30'$ in an old map when the declination was $2^0\ 30'$ E.

The magnetic bearing of the line if the present declination is $5^0\ 30'$ W

Options :

1. ✖ $13^0\ 30'$

2. ✔ $18^0\ 30'$

3. ✖ $3^0\ 30'$

4. ✖ $8^0\ 30'$

Question Number : 145 Question Id : 80089422800 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The sensitiveness of a level tube decreases if

Options :

1. ✖ length of the vapour bubble is increased

2. ✔ Both viscosity and surface tension are increased

3. ✖ radius of curvature of its inner surface is increased

4. ✖ diameter of the tube is increased

Question Number : 146 Question Id : 80089422801 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following arithmetic checks can be applied in rise and fall method?

Options :

1. ✖ ΣB.S.-ΣF.S.=ΣRise –ΣFall only

2. ✖ ΣB.S.-ΣF.S.=Last RL-First RL only

3. ✔ ΣB.S.-ΣF.S.=Last RL-First RL=ΣRise-ΣFall

4. ✖ ΣRise –ΣFall= Last RL-First RL only

Question Number : 147 Question Id : 80089422802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Turning the telescope through 180° about trunnion axis in vertical plane is called?

Options :

1. ✖ Swinging

2. ✔ Transiting

3. ✖ Rotating

4. ✖ Changing face

Question Number : 148 Question Id : 80089422803 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

To change the reading on the horizontal circle while measuring an angle

Options :

1. ✖ Upper clamp is tightened and lower clamp is loosed

2. ✔ Upper clamp is loosened and lower clamp is tightened

3. ✖ Both upper and lower clamps are loosened

4. ✖ Both upper and lower clamps are tightened

Question Number : 149 Question Id : 80089422804 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The Tellurometer which is used for EDM uses

Options :

1. ✖ Modulated light waves

2. ✔ Micro waves

3. ✖ Modulated infra-red waves

4. ✖ Light waves

Question Number : 150 Question Id : 80089422805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The chord length of long chord for a curve, if its radius is 100m and a deflection angle of 180° is

Options :

1. ✔ 200

2. ✖ 100

3. ✖ 0

4. ✖ 300

Question Number : 151 Question Id : 80089422806 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For a chord of 60m, the mid-ordinate for a circular curve of 50 radius will be _____

Options :

1. ✖ 5m

2. ✔ 10m

3. ✖ 15m

4. ✖ 18.75m

Question Number : 152 Question Id : 80089422807 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Control panel of total station will be consisting of?

Options :

1. ✖ EDM

2. ✖ LCD

3. ✖ Keyboard

4. ✔ Keyboard and LCD

Question Number : 153 Question Id : 80089422808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The SI unit of dynamic viscosity is _____

Options :

1. ✖ $Pa\text{-}sec^2$

2. ✔ Pa-sec

3. ✖ N-sec/m

4. ✖ m^2/s

Question Number : 154 Question Id : 80089422809 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If barometric reading is 740 mm of Hg , then atmospheric pressure will be (take $g = 9.81\ m/s^2$ and density of $Hg = 13600\ kg/m^3$)

Options :

1. ✔ 98.73 kPa

2. ✖ 95.4 kPa

3. ✖ 98.9 kPa

4. ✖ 99.2 kPa

Question Number : 155 Question Id : 80089422810 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If flow and fluid properties at any given location does not change with time, flow is called

Options :

1. ✖ Uniform

2. ✖ Non-uniform

3. ✔ Steady

4. ✖ Unsteady

Question Number : 156 Question Id : 80089422811 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The coefficient of discharge for Venturimeter lies in the range of_____

Options :

1. ✖ 0.65 - 0.7

2. ✖ 0.74 - 0.78

3. ✖ $0.80 - 0.85$

4. ✔ $0.94 - 0.98$

Question Number : 157 Question Id : 80089422812 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The expression to estimate head loss between Inlet and Throat in a Venturimeter is given by

Options :

1. ✔ $(1- C_d^2)$ x differential head between Inlet and Throat

2. ✖ $(1- C_v^2)$ x head on the Venturimeter

3. ✖ $\sqrt{2gh}$, where h is head

4. ✖ $\sqrt{1-(C_d)^2}$

Question Number : 158 Question Id : 80089422813 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The result of triangular notch is more accurate than rectangular notch for

Options :

1. ✖ Low to high discharge

2. ✖ High discharge

3. ✖ Medium discharge

4. ✔ Low discharge

Question Number : 159 Question Id : 80089422814 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The coefficient of discharge formula by Rehbock formula of Sharp crested suppressed rectangular weir of crest height S and passing a free flow with a head M_1 is given by

Options :

1. ✖ $0.611+ 0.8\ M_1/S$

2. ✖ $0.602+ 0.075\ S/ M_1$

3. ✔ $0.611+ 0.075\ M_1/S$

4. ✖ $0.675+ 0.0075\ S/ M_1$

Question Number : 160 Question Id : 80089422815 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

In a laminar flow through a circular pipe, value of coefficient of friction is
(where R_e is Reynold's number)

Options :

1. ✔ $64/R_e$

2. ✖ $32/R_e$

3. ✖ $24/R_e$

4. ✖ $16/R_e$

Question Number : 161 Question Id : 80089422816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For a laminar flow the relation between f (Friction Factor) & Re (Reynolds Number)

Options :

1. ✖ $f=0.316 /Re^{¼}$

2. ✔ $f=64/Re$

3. ✖ $f=10/\sqrt{Re}$

4. ✖ $f=15/\sqrt{Re}$

Question Number : 162 Question Id : 80089422817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

If the width of rectangular open channel flow is 'B' and the depth of flow is 'd', then the hydraulic radius 'R' is given by the expression-

Options :

1. ✖ $(2Bd)/(B + 2d)$

2. ✔ $(Bd)/(B + 2d)$

3. ✖ $(Bd)/(2B + d)$

4. ✖ $(2Bd)/(B + d)$

Question Number : 163 Question Id : 80089422818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

. A rectangular channel of 1 m width conveys water at 8.94 m^3/s under critical condition. Specific energy for this flow is (take g=10 m/s^2)

Options :

1. ✖ 7.5 m

2. ✔ 3 m

3. ✖ 5.5 m

4. ✖ 8 m

Question Number : 164 Question Id : 80089422819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Hydraulic energy is converted into another form of energy by hydraulic machines. What form of energy is that?

Options :

1. ✔ Mechanical Energy

2. ✖ Electrical Energy

3. ✖ Nuclear Energy

4. ✖ Elastic Energy

Question Number : 165 Question Id : 80089422820 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A Cotton crop is irrigated by row crop in an agricultural land. The type of irrigation method preferred is _____

Options :

1. ✖ Basin Method

2. ✔ Furrow Method

3. ✖ Boarder Strip Method

4. ✖ Controlled Flooding Method

Question Number : 166 Question Id : 80089422821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a syphon aqueduct

Options :

1. ✖ Drainage passes over the canal and F.S.L. of the canal is above the bottom of the drainage trough

2. ✖ Drainage passes over the canal and F.S.L. of the canal is below the bottom of the drainage trough

3. ✔ Canal passes over the drainage and H.F.L. of the drainage is above the bottom of the canal trough

4. ✖ Canal passes over the drainage and H.F.L. of the drainage is below the bottom of the canal trough

Question Number : 167 Question Id : 80089422822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The duty is largest _____

Options :

1. ✖ and same at all places

2. ✔ on the field

3. ✖ at the head of water- course

4. ✖ at the head of main canal

Question Number : 168 Question Id : 80089422823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Sprinkler irrigation is used for which type of soil?

Options :

1. ✖ Clay soil

2. ✔ Sandy soil

3. ✖ Silt soil

4. ✖ Morum soil

Question Number : 169 Question Id : 80089422824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The maximum flood discharge by empirical formulae is given by the equation $Q = CA^n$. The value of 'n' index as per Ryve's formula and Dicken's formula is_____

(Where 'Q' is flood discharge 'C' is coefficient and 'n' is index)

Options :

1. ✖ 3/4 and 2/3 respectively

2. ✖ 2/3 and 4/3 respectively

3. ✖ 3/4 and 3/2 respectively

4. ✔ 2/3 and 3/4 respectively

Question Number : 170 Question Id : 80089422825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The suitable topographic feature to locate a barrage is _____

Options :

1. ✖ Wide and shallow valley

2. ✖ Rocky Terrain

3. ✔ Permeable soil

4. ✖ Deep and narrow valley

Question Number : 171 Question Id : 80089422826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

For a flood control reservoir, the effective storage is equal to

Options :

1. ✖ Useful storage+ surcharge storage

2. ✖ Useful storage-valley storage

3. ✖ Useful storage+ surcharge storage+ valley storage

4. ✔ Useful storage +surcharge storage-valley storage

Question Number : 172 Question Id : 80089422827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

. The analysis carried out for an elementary profile of gravity dam of height H, for no tension to develop, under

FRL condition the resultant of all forces should pass through

Options :

1. ✖ Outer middle third of base

2. ✔ Inner Middle third of base

3. ✖ At the Heel

4. ✖ At the Toe

Question Number : 173 Question Id : 80089422828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The uplift pressure on the face of a drainage gallery in a dam is taken as

Options :

1. ✖ Hydrostatic pressure at the toe

2. ✖ Average of hydrostatic pressure at toe and heel

3. ✔ Two-third of hydrostatic pressure at toe plus one-third of hydrostatic pressure at heel

4. ✖ One-third of hydrostatic pressure at toe plus two-third of hydrostatic pressure at heel

Question Number : 174 Question Id : 80089422829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following comes under rigid dam?

Options :

1. ✖ Earthen Dam

2. ✖ Rock Fill Dam

3. ✔ Concrete Dam

4. ✖ Tailings Dam

Question Number : 175 Question Id : 80089422830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The most suitable material for the central impervious core of a zoned embankment type dam is

Options :

1. ✖ High plastic Clay

2. ✖ Sand

3. ✖ Silty Clay with fine sand

4. ✔ Low plastic Clay

Question Number : 176 Question Id : 80089422831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The horizontal distance left at ground level between the toe of the canal bank and the top edge of the cutting

Options :

1. ✔ Berm

2. ✖ Rip-rap

3. ✖ Free Board

4. ✖ Side Slope

Question Number : 177 Question Id : 80089422832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

As per IRC specifications what is the camber range for earth road surface of low rainfall region?

Options :

1. ✖ 1 in 50 or 2%

2. ✖ 1 in 40 or 2.5 %

3. ✔ 1 in 33 or 3.0%

4. ✖ 1 in 60 or 1.7%

Question Number : 178 Question Id : 80089422833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Camber on carriageway is provided to take care of _____

Options :

1. ✖ Centrifugal forces

2. ✖ Lane alignment

3. ✔ Drainage

4. ✖ Segregate the traffic flow by direction wise

Question Number : 179 Question Id : 80089422834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The value of limiting gradient for plain terrain as per IRC is _____?

Options :

1. ✖ 3%

2. ✔ 5%

3. ✖ 7%

4. ✖ 10%

Question Number : 180 Question Id : 80089422835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A foundation is considered as shallow, if its depth is

Options :

1. ✖ Less than 1 meter.

2. ✖ greater than its width

3. ✔ equal to or less than it's width

4. ✖ greater than 1meter.

Question Number : 181 Question Id : 80089422836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The total perception time taken for an average driver in India is _____ seconds.

Options :

1. ✖ 0.5

2. ✖ 1.5

3. ✔ 2.5

4. ✖ 3.5

Question Number : 182 Question Id : 80089422837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What does shrinkage cracks in flexible pavements mean?

Options :

1. ✖ Short and fine cracks at close intervals on the surface

2. ✖ Cracks on a straight line along the road

3. ✔ Cracks in transverse direction or inter-connected cracks forming a series of large blocks.

4. ✖ Cracks near and parallel to pavement edge

Question Number : 183 Question Id : 80089422838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Installation of dowel bars in cement concrete pavement slabs is restricted at places, where the slab thickness is

less than

Options :

1. ✖ 10 cm

2. ✔ 15 cm

3. ✖ 18 cm

4. ✖ 20 cm

Question Number : 184 Question Id : 80089422839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Middle most part of road embankment is called _____

Options :

1. ✖ Crown

2. ✖ Shoulder

3. ✔ Carriage way

4. ✖ Gauge

Question Number : 185 Question Id : 80089422840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the Retarder used in cement concrete mixes

Options :

1. ✔ Sugar

2. ✖ Calcium salt

3. ✖ Soap

4. ✖ Naphthalene formaldehyde sulphonates

Question Number : 186 Question Id : 80089422841 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

On which of the following parameters sleeper density depend?

Options :

1. ✖ Lateral thrust

2. ✔ Subgrade material

3. ✖ Railway gauge

4. ✖ Length of rail in meters

Question Number : 187 Question Id : 80089422842 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following does not come under types of rails?

Options :

1. ✖ Double Headed Rails

2. ✖ Bull Headed Rails

3. ✖ Flat Footed Rails

4. ✔ Flat headed rails

Question Number : 188 Question Id : 80089422843 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For a Broad Gauge track with M+7 sleeper density, number of sleepers per rail length is

Options :

1. ✖ 18

2. ✖ 21

3. ✔ 20

4. ✖ 21

Question Number : 189 Question Id : 80089422844 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

. Estimate the average demand of water with a two lakh population with per capita demand is 150 litres/day from

a river which is 2 km away from the city

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. 2 Million litres per day

2. 2.5 Million litres per day

3. 1.5 Million litres per day

4. 3 Million litres per day

Question Number : 190 Question Id : 80089422845 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Coincident draft is taken as

Options :

1. ✖ Maximum hourly demand +fire demand

2. ✔ Maximum daily demand +fire demand

3. ✖ Average daily demand

4. ✖ Maximum daily demand

Question Number : 191 Question Id : 80089422846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Among the following which does not belong to Intake structure

Options :

1. ✖ Lake Intake

2. ✖ River Intake

3. ✔ Aqueducts Intake

4. ✖ Reservoir Intake

Question Number : 192 Question Id : 80089422847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Ground Water Consists of

Options :

1. ✖ more suspended and more dissolved solids

2. ✔ more dissolved and less suspended solids

3. ✖ less dissolved and less suspended solids

4. ✖ more suspended and less dissolved solids

Question Number : 193 Question Id : 80089422848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The chief disadvantages of dead end system layout of distribution system is

Options :

1. ✔ There is stagnation of water and accumulation of sediment at dead end

2. ✖ The design calculations are simple and easy

3. ✖ The number of cutoff valves employed in the system are more

4. ✖ The amount of water available for firefighting is more

Question Number : 194 Question Id : 80089422849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Intermittent water supply system is most popular in India because

Options :

1. ✔ supply hours can be staggered for different zones of different elevations

2. ✖ less quantity of water shall be sufficient

3. ✖ wastage is quite less

4. ✖ It is highly economical in the long run

Question Number : 195 Question Id : 80089422850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Which of the following is not a distribution reservoir?

Options :

1. ✖ Surface reservoir

2. ✔ Sub surface reservoir

3. ✖ Elevated reservoir

4. ✖ Stand pipe

Question Number : 196 Question Id : 80089422851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Color of fresh sewage is

Options :

1. ✖ Green

2. ✖ Brown

3. ✔ Grey

4. ✖ White

Question Number : 197 Question Id : 80089422852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

The correct relationship between the theoretical oxygen demand (TOD), Biochemical oxygen demand (BOD), Chemical oxygen demand (COD) is given by

Options :

1. ✔ TOD>COD>BOD

2. ✖ TOD>BOD>COD

3. ✖ COD>BOD>TOD

4. ✖ BOD>COD>TOD

Question Number : 198 Question Id : 80089422853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If BOD of a waste water having BOD_5 is 250 mg/L and reaction constant is 0.2/day,

then Ultimate BOD (approx.) (take value of $e^{-1.0}$=0.37)

Options :

1. ✔ 400 mg/L

2. ✖ 425 mg/L

3. ✖ 350 mg/L

4. ✖ 250 mg/L

Question Number : 199 Question Id : 80089422854 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

To remove floating matter like papers, rags etc., the unit used is

Options :

1. ✔ Screens

2. ✖ Grit Chamber

3. ✖ Imhoff Tank

4. ✖ Septic Tank

Question Number : 200 Question Id : 80089422855 Question Type : MCQ Option Shuffling : Yes

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

Correct Marks : 1 Wrong Marks : 0

An egg shaped sewer, when compared to a circular sewer is

Options :

1. ✖ Economical

2. ✖ More stable

3. ✖ Easier to construct

4. ✔ Provides better self-cleansing velocity at low discharge