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 20th May 2023 Shift1 SET1
Subject Name :	Civil Engineering
Creation Date :	2023-05-20 13:03:30
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

Civil Engineering

Group Number :	1
Group Id :	15920725
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 :	15920794
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 : 159207115

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 1592074816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 x 2 identity matrix, then (α, β) =

Options :

1. ✖ $(5, 7)$

2. ✖ $(-5, -7)$

3. ✖ $(-5, 7)$

4. ✔ $(5, -7)$

Question Number : 2 Question Id : 1592074817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\begin{bmatrix} 4 & 3 \\ 9 & 7 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 18 \\ 41 \end{bmatrix}$, then $12x + 10y =$

Options :

1. ✖ 58

2. ✔ 56

3. ✖ 54

4. ✖ 52

Question Number : 4 Question Id : 1592074819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074820 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\sin^2 45^o + \sin^2 135^o + \sin^2 225^o + \sin^2 315^o$ is

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 0

4. ✖ 4

Question Number : 8 Question Id : 1592074823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 ΔABC, if a = 3, b = 4 and $\sin A = \frac{3}{4}$, then the angle B =

Options :

1. ✖ 45^o

2. ✖ 60^o

3. ✔ 90^o

4. ✖ 70^o

Question Number : 9 Question Id : 1592074824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\frac{1}{2}$

2. ✔ $\frac{1}{4}$

3. ✖ $\frac{1}{8}$

4. ✖ 1

Question Number : 10 Question Id : 1592074825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ e

2. ✔ e^2

3. ✖ e^3

4. ✖ e^4

Question Number : 19 Question Id : 1592074834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 20 Question Id : 1592074835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. ✖ $\left(\frac{1}{e}\right)^{1/e}$

4. ✖ e^e

Question Number : 24 Question Id : 1592074839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\left(x^3+y^3+z^3-3xyz\right)$, 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 : 1592074840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $u(x, y) = \log\left(\frac{x^4+y^4}{x+y}\right)$, 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 : 1592074841 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

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 : 1592074842 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074843 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 : 1592074844 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074845 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :

1. ✖ 0.69450

2. ✔ 0.70834

3. ✖ 0.67435

4. ✖ 0.68500

Question Number : 32 Question Id : 1592074847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :

1. ✔ $-10e^{-10}$

2. ✖ $-20e^{-10}$

3. ✖ $-30e^{-10}$

4. ✖ $-40e^{-10}$

Question Number : 33 Question Id : 1592074848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

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

Options :

1. ✖ 3 and 3

2. ✖ 2 and 2

3. ✖ 2 and 3

4. ✔ 2 and 1

Question Number : 34 Question Id : 1592074849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $sinx\ \frac{dy}{dx} + y\ cosx = x\ sinx$, then $(y-1)sinx =$

Options :

1. ✖ $c - x\ sinx$

2. ✖ $c + x\ sinx$

3. ✔ $c - x\,cosx$

4. ✖ $c + x\,cosx$

Question Number : 36 Question Id : 1592074851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

$(e^y + 1)cosx\,dx + e^y sinx\,dy = 0$ is

Options :

1. ✔ $(e^y + 1)sinx = c$

2. ✖ $e^x sinx = c$

3. ✖ $(e^x + 1)cosx = c$

4. ✖ $(e^y - 1)sinx = c$

Question Number : 37 Question Id : 1592074852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. ✖ $x^2y_1 = y$

2. ✖ $xy_1 + 2y_2 = 0$

3. ✔ $xy_2 + 2y_1 = 0$

4. ✖ $x^2y_1 - 2y = 0$

Question Number : 38 Question Id : 1592074853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\log(\frac{dy}{dx}) = 3x + 3y$ 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 : 1592074854 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $y\,dx+y^2dy=x\,dy, x\in\mathbb{R}, y>0$ *and* $y(1)=1$, then $y(-3)=$

Options :

1. ✔ 3

2. ✖ 2

3. ✖ 1

4. ✖ 5

Question Number : 40 Question Id : 1592074855 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074856 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

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 : 1592074857 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

4.

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

Question Number : 43 Question Id : 1592074858 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. $\frac{s}{\left(1+s^2\right)^2}$

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

3. $\frac{2s}{1+s^2}$

4. $\frac{s}{1+s^2}$

Question Number : 44 Question Id : 1592074859 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 1

2. ✔ −1

3. ✖ 2

4. ✖ −2

Question Number : 45 Question Id : 1592074860 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074861 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

$y'' - 2y' + 2y = 0$ satisfying $y(0) = y'(0) = 1$ 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 : 1592074862 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074863 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074864 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $f(x) = \begin{cases} \pi + x & \text{if } -\pi < x < 0 \\ 0 & \text{if } 0 \le x < \pi \end{cases}$ converges to

Options :

1. ✖ π

2. ✖ 0

3. ✖ $-\pi$

4. ✔ $\frac{\pi}{2}$

Question Number : 50 Question Id : 1592074865 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $x = \frac{\pi}{2} + \sum_{n=1}^{\infty} a_n \cos nx, \quad 0 < x < \pi,$ then the value of a_n is

Options :

1. $\frac{2}{\pi n^2}\left[(-1)^n - 1\right]$ ✔

2. $\frac{2}{\pi n^2}$ ✖

3. 0 ✖

4. $\frac{4}{\pi n^2}$ ✖

Physics

Section Id :	15920795
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 :	159207116
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 51 Question Id : 1592074866 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 x A is

Options :

1. ✖ Along west

2. ✔ Along east

3. ✖ Vertically downward

4. ✖ No direction

Question Number : 54 Question Id : 1592074869 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074870 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074871 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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/s^2

2. ✖ 20 m/s^2

3. ✔ 0 m/s^2

4. ✖ $40\ m/s^2$

Question Number : 57 Question Id : 1592074872 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074873 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :

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

2. ✖ The velocity of a fluid particle remains constant.

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

4. ✖ The speed of a fluid particle remains constant.

Question Number : 59 Question Id : 1592074874 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. ✖ $Cp = Cv$

3. ✖ $Cp - Cv > R$

4. ✖ $Cp / Cv = R$

Question Number : 60 Question Id : 1592074875 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074876 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 0^0C and $R = 8.31 \times 10^7$ erg- mol^{-1} . 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 : 1592074877 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074878 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074879 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074881 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074882 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074883 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074884 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074885 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074886 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 resisters are possible.

Options :

1. ✔ Four

2. ✖ Two

3. ✖ Three

4. ✖ Five

Question Number : 72 Question Id : 1592074887 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074889 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074890 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :	15920796
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 :	159207117
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 1592074891 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074892 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074893 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074894 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 mass180)

in 500 g of water is

Options :

1. ✖ 0.5

2. ✔ 0.1

3. ✖ 0.2

4. ✖ 1.0

Question Number : 80 Question Id : 1592074895 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. ✖ $Fe(OH)_3$

3. ✔ $KFe[Fe(CN)_6]$

4. ✖ $FeCl_3$

Question Number : 81 Question Id : 1592074896 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 : 1592074897 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

2. ✖ -9

3. ✖ Between 7 & 8

4. ✔ Between 6 & 7

Question Number : 83 Question Id : 1592074898 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074899 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074900 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074901 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074902 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074903 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074904 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074905 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074906 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074907 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074908 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074909 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074910 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074911 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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. ✖ $CO_2 + H_2$

2. ✔ $CO + N_2$

3. ✖ $CO + CH_4$

4. ✖ $CH_4 + H_2$

Question Number : 97 Question Id : 1592074912 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

$$Fe + \underset{(a=1)}{Ni}^{2+} \longrightarrow \underset{(a=1)}{Fe}^{2+} + Ni$$

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

Options :

1. ✖ – 0.190 V

2. ✔ + 0.190 V

3. ✖ + 0.690 V

4. ✖ – 0.690 V

Question Number : 98 Question Id : 1592074913 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :

1. ✔ $O_2(g) + 4H^+ + 4e^- \rightarrow 2H_2O$

2. ✖ $4H^+ + 4e^- \rightarrow 2H_2(g)$

3. ✖ $2H_2O \rightarrow O_2(g) + 4H^+ + 4e^-$

4. ✖ $2H_2(g) + 4OH^- \rightarrow 4H_2O(\ell) + 4e^-$

Question Number : 99 Question Id : 1592074914 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 : 1592074915 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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

Civil Engineering

Section Id :	15920797
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 :	159207118
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 1592074916 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 forces, which do not meet at one point, but their lines of action also lie on the same plane, are known as

Options :

1.

Coplanar concurrent forces

Coplanar non-concurrent forces

2.

Non-coplanar concurrent forces

3.

Non-coplanar non concurrent forces

4.

Question Number : 102 Question Id : 1592074917 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 several forces acting at a point, their resultant is given by

Options :

1. $(\sum V)^2 + (\sum H)^2$

2. $\sqrt{(\sum V)^2 + (\sum H)^2}$

3. $(\sum V)^2 - (\sum H)^2$

4. ✖ $\sqrt{(\Sigma V)^2 - (\Sigma H)^2}$

Question Number : 103 Question Id : 1592074918 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 center of gravity of an equilateral triangle from any of the three sides with each side 'a', is

Options :

1. ✖ $\frac{3a}{2}$

2. ✖ $2\sqrt{3}\ a$

3. ✔ $\frac{a}{2\sqrt{3}}$

4. ✖ $3\sqrt{2}\ a$

Question Number : 104 Question Id : 1592074919 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 moment of inertia of a rectangular section 40 mm wide and 60 mm deep about Y-Y axis (i.e., vertical axis) is

Options :

1. ✖ $72 \times 10^4\ mm^4$

2. ✖ $27 \times 10^4\ mm^4$

3. ✖ $56 \times 10^4\ mm^4$

4. ✔ $32 \times 10^4\ mm^4$

Question Number : 105 Question Id : 1592074920 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 center of gravity of hemisphere lies at a distance of _____from its base measured along the vertical radius

Options :

1. ✖ $\frac{r}{8}$

2. ✖ $\frac{5r}{8}$

3. ✔ $\frac{3r}{8}$

4. ✖ $\frac{3}{8r}$

Question Number : 106 Question Id : 1592074921 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 moment of inertia of a plane is 6×10^6 mm^4. If its area is 60000 mm^2 then its radius of gyration will be

Options :

1. ✖ 100

2. ✖ 60

3. ✖ 600

4. ✔ 10

Question Number : 107 Question Id : 1592074922 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How can be the Poisson's ratio be expressed in terms of bulk modulus(K) and modulus of rigidity(G)?

Options :

1. ✔ $\frac{(3K-2G)}{(6K+2G)}$

2. ✖ $\frac{9KG}{(3K+G)}$

3. ✖ $\frac{(3K+2G)}{(6K-2G)}$

4. ✖ $\frac{3KG}{(9K+G)}$

Question Number : 108 Question Id : 1592074923 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 material has a Poisson's ratio of 0.5. If uniform pressure of 300GPa is applied to that material, what will be the volumetric strain of it ?

Options :

1. ✖ 1

2. ✔ 0

3. ✖ 1.5

4. ✖ 2

Question Number : 109 Question Id : 1592074924 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Modulus of rigidity may be defined as the ratio of

Options :

1. ✖ $\frac{\text{Shear Strain}}{\text{Shear Stress}}$

2. ✖ $\frac{\text{Shear Stress}}{\text{Volumetric Strain}}$

3. ✖ $\frac{\text{Linear Stress}}{\text{Linear Strain}}$

4. ✔ $\frac{\text{Shear Stress}}{\text{Shear Strain}}$

Question Number : 110 Question Id : 1592074925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 material has identical properties in all directions, it is known as

Options :

1. ✖ Homogeneous

2. ✖ Plastic

3. ✔ Isotropic

4. ✖ Ductile

Question Number : 111 Question Id : 1592074926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 strain of a brass rod of length 300 mm which is subjected to a tensile load of 50 kN when the extension of rod is equal to 0.3 mm?

Options :

1. ✔ 0.001

2. ✖ 1.0

3. ✖ 0.01

4. ✖ 0.1

Question Number : 112 Question Id : 1592074927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the loading on a beam passes through the bending axis, the beam does not have

Options :

1. ✖ Shear

2. ✖ Bending

3. ✔ Twisting

4. ✖ Deflection

Question Number : 113 Question Id : 1592074928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a simply supported beam with a central load, then the bending moment is

Options :

1. ✖ Least at the centre

2. ✖ Least at the supports

3. ✖ Maximum at the supports

4. ✔ Maximum at the centre

Question Number : 114 Question Id : 1592074929 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Euler's formula states that buckling load 'P' for a column of length, 'l' both ends hinged and whose least moment of inertia and modulus of elasticity of the material of thecolumn are I & E respectively is given by the relation

Options :

1. $P = \frac{\pi^2 EI}{l^2}$ ✔

2. $P = \frac{\pi l^2}{EI}$ ✖

3. $P = \frac{\pi EI}{l^2}$ ✖

4. $P = \frac{\pi^2 EI}{l^3}$ ✖

Question Number : 115 Question Id : 1592074930 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 long vertical member subjected to an axial compressive load is called

Options :

1. ✖ A Column

2. ✔ A Strut

3. ✖ A Tie

4. ✖ A Stanchion

Question Number : 116 Question Id : 1592074931 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 twisting moment a shaft can resist is the product of permissible shear stress and

Options :

1. ✖ Moment of Inertia

2. ✖ Polar moment of inertia

3. ✔ Polar Modulus

4. ✖ Modulus of Rigidity

Question Number : 117 Question Id : 1592074932 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Poisson's ratio always remains

Options :

1. ✖ Greater than one

2. ✔ Less than one

3. ✖ Equal to one

4. ✖ Zero

Question Number : 118 Question Id : 1592074933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 shear stress at a given point A in a cross section of a rectangular beam is 50N/mm^2. If the width of the beam is reduced to half, the previous stress at the same level A will be

Options :

1. ✖ 25 N/mm^2

2. ✖ 50 N/mm^2

3. ✔ 100 N/mm^2

4. ✖ 200 N/mm^2

Question Number : 119 Question Id : 1592074934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ratio of the moment of inertia of a circular plate and that of square plate for equal depth is

Options :

1. ✖ 6π

2. ✖ Equal to one

3. ✖

$\frac{\pi}{64}$

Equal to $\frac{3\pi}{16}$

4. ✔

Question Number : 120 Question Id : 1592074935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 column is said to be a medium size if its slenderness ratio is between

Options :

1. 20 and 31 ✖

2. 32 and 120 ✔

3. 121 and 160 ✖

4. 161 and 180 ✖

Question Number : 121 Question Id : 1592074936 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Value of maximum deflection of a simply supported beam with Uniformly distributed load over entire span is

Options :

1. ✖ $Wl^3/24EI$

2. ✖ $Wl^3/48EI$

3. ✖ $5wl^3/384EI$

4. ✔ $5wl^4/384EI$

Question Number : 122 Question Id : 1592074937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Macaulay's method is very useful for cases when

Options :

1. ✖ Span is fully loaded

2. ✔ Span is partially loaded

3. ✖ Span is non uniformly loaded

4. ✖ Span is having fixed supports

Question Number : 123 Question Id : 1592074938 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If L_a= Actual length of column. L_e = effective length. r_{max} is maximum radius of gyration of the cross section. r_{min} is minimum radius of gyration of the cross section.
slenderness ratio used in Euler's or Rankine Formula is equal to

Options :

1. ✖ L_a / r_{max}

2. ✖ L_e / r_{max}

3. ✖ L_a / r_{min}

4. ✔ L_e / r_{min}

Question Number : 124 Question Id : 1592074939 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 column has least effective length

Options :

1. ✔ Both ends fixed

2. ✖ Both ends hinged

3. ✖ One end fixed and the other one free

4. ✖ One end fixed and the other one hinged

Question Number : 125 Question Id : 1592074940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Rankine constant in the formula for axial loads on column made of material of crushing strength f_c and modulus of elasticity E is given by

Options :

1. ✖ $\frac{2f_c}{\pi^2 E}$

2. ✔ $\frac{f_c}{\pi^2 E}$

3. ✖ $\frac{f_c}{8\pi^2 E}$

4. ✖ $\frac{\pi^2 E}{f_c}$

Question Number : 126 Question Id : 1592074941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 will be the coefficient of thermal expansion of concrete as per IS 456:2000 if granite aggregates are used for making concrete

Options :

1. ✔ 0.7 to 0.95 $\times 10^{-5}$ /°C

2. ✖ 1.2 to 1.3 $\times 10^{-5}$ /°C

3. ✖ 0.8 to 0.95 $\times 10^{-5}$ /°C

4.

✖ 0.6 to 0.9 $\times 10^{-5}$ /°C

Question Number : 127 Question Id : 1592074942 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Area of tensile reinforcement in isolated footing is calculated as in

Options :

1. ✖ Short column

2. ✖ Long column

3. ✖ Stirrups

4. ✔ Slabs

Question Number : 128 Question Id : 1592074943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to IS 456:2000, what could be the minimum horizontal distance required between two individual parallel main reinforcing bars

Options :

1. ✖ 16 times diameter of the main bar

2. ✖ 0.75 times the diameter of stirrup

3. ✔ 5 mm more than the nominal maximum size of coarse aggregate

4. ✖ 300 mm

Question Number : 129 Question Id : 1592074944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 limit state of design, the limiting depth of neutral axis for F_e 500 grade steel is

Options :

1. ✖ 0.48 d

2. ✔ 0.46 d

3. ✖ 0.53 d

4. ✖ 0.40 d

Question Number : 130 Question Id : 1592074945 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

As per IS 456:2000 the organic matter of water used for making concrete should not be more than

Options :

1. ✖ 1000 mg/l

2. ✔ 200 mg/l

3. ✖ 400 mg/l

4. ✖ 3000 mg/l

Question Number : 131 Question Id : 1592074946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 HYSD bars are used in place of mild steel bars, the bond strength in RCC will

Options :

1. ✔ Increase

2. ✖ Decrease

3. ✖ Remain constant

4. ✖ Become zero

Question Number : 132 Question Id : 1592074947 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 number of longitudinal bars required for the circular column as per codal provisions

Options :

1. ✖ 2

2. ✖ 4

3. ✖ 8

4. ✔ 6

Question Number : 133 Question Id : 1592074948 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 effective length of column held in position at both ends but not restrained against rotation is given by

Options :

1. ✖ 1.5L

2. ✖ 0.5L

3. ✔ 1L

4. ✖ 0.8L

Question Number : 134 Question Id : 1592074949 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The length of the staircase situated between two landings is known as

Options :

1. ✔ Flight

2. ✖ Rise

3. ✖ Tread

4. ✖ Strut

Question Number : 135 Question Id : 1592074950 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 oneway slab, the ratio of longer span to shorter span is

Options :

1. ✖ 0. 25

2. ✖ 0.5

3. ✖ 1

4. ✔ Greater than or equal to 2

Question Number : 136 Question Id : 1592074951 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 area of tension reinforcement in beams should not be more than_____ (where b = Breadth, D = Depth)

Options :

1. ✔ 0.04bD

2. ✖ 0.06bD

3. ✖ 0.09bD

4. ✖ 0.08bD

Question Number : 137 Question Id : 1592074952 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a quantity of 25 m^3 of concrete work, as per codal provisions mention the minimum number of samples required for testing the quality of concrete.

Options :

1. ✖ 9

2. ✖ 6

3. ✔ 3

4. ✖ 12

Question Number : 138 Question Id : 1592074953 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Permissible error in chaining on hilly ground is

Options :

1. ✖ 1 in 15

2. ✔ 1 in 250

3. ✖ 1 in 500

4. ✖ 1 in 750

Question Number : 139 Question Id : 1592074954 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 whole circle bearing system $N25^{0}15'W$ correspond to

Options :

1. ✖ $115^{0}15'$

2. ✖ $154^{0}45'$

3. ✖ $205^{0}15'$

4. ✔ $334^{0}45'$

Question Number : 140 Question Id : 1592074955 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 horizontal angle between the true meridian and magnetic meridian is known as

Options :

1. ✖ True bearing

2. ✔ Magnetic declination

3. ✖ Local attraction

4. ✖ Dip

Question Number : 141 Question Id : 1592074956 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 contour lines can cross one another on map only in case of

Options :

1. ✖ A vertical cliff

2. ✔ An overhanging cliff

3. ✖ A valley

4. ✖ A ridge

Question Number : 142 Question Id : 1592074957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 leveling, height of instrument is

Options :

1. ✖ The height of the leveling staff

2. ✖ The sum of the reduced level of B.M. and foresight

3. ✔ The elevation of plane of collimation

4. ✖ The height of telescope above the ground at the time of observation

Question Number : 143 Question Id : 1592074958 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 establishing intermediate points between two end points which are not inter visible, with help of a Theodolite is known as

Options :

1. ✖ Ranging

2. ✖ Lining - in

3. ✖ Interpolation

4. ✔ Balancing-in

Question Number : 144 Question Id : 1592074959 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Geodetic surveying is different from plane surveying because

Options :

1.

The curvature of the earth

The large difference of elevation between various points

2.

Coverage of very large area

3.

Undulations of the topography

4.

Question Number : 145 Question Id : 1592074960 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 collimation method for obtaining the reduced levels does not provide a check on

Options :

Fore sights

1.

Back sights

2.

3.

Change points

4. ✔ Intermediate sights

Question Number : 146 Question Id : 1592074961 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 branch of surveying in which the horizontal and vertical distances of points are obtained by instrumental observations are known as

Options :

1. ✖ Chain Surveying

2. ✔ Tachometric surveying

3. ✖ Plan table surveying

4. ✖ Hydrographic surveying

Question Number : 147 Question Id : 1592074962 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

Methods used for collection of digital field data is

Options :

1. ✔ Radiation

2. ✖ Intersection

3. ✖ Traversing

4. ✖ Resection

Question Number : 148 Question Id : 1592074963 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

GIS deals with which kind of data

Options :

1. ✖ Numerical data

2. ✖ Binary data

Spatial data

3. ✔

Complex data

4. ✖

Question Number : 149 Question Id : 1592074964 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Units of viscosity in CGS system is given as

Options :

Stoke

1. ✖

Poise

2. ✔

Centi-stoke

3. ✖

Watts

4. ✖

Question Number : 150 Question Id : 1592074965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 reciprocal of bulk modulus of elasticity known as

Options :

1. ✖ Surface tension

2. ✖ Capillary

3. ✔ Compressibility

4. ✖ Viscosity

Question Number : 151 Question Id : 1592074966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 characteristics of flow in a pipe does not change with time at any point the flow is said to be

Options :

1. ✖ Uniform flow

2. ✖ Non uniform flow

3. ✔ Steady flow

4. ✖ Unsteady flow

Question Number : 152 Question Id : 1592074967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 atmospheric pressure head is

Options :

1. ✖ 123 kN/m^2

2. ✖ 101.33 m of water

3. ✔ 760 mm of mercury

4. ✖ 1000 m of water

Question Number : 153 Question Id : 1592074968 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pitot tube is used to measure

Options :

1. ✖ Depth at a point

2. ✔ Velocity at a point

3. ✖ Pressure at a point

4. ✖ Flow at a point

Question Number : 154 Question Id : 1592074969 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Reciprocating pump is suitable for

Options :

1. ✖ High discharge and high head

2. ✖ High discharge and low head

3. ✖ Low discharge and low head

4. ✔ Low discharge and high head

Question Number : 155 Question Id : 1592074970 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hydraulic gradient line represents the sum of

Options :

1. ✖ Pressure head and kinetic head

2. ✖ Kinetic head and datum head

3. ✔ Pressure head and datum head

4. ✖ Kinetic head, pressure, and datum head

Question Number : 156 Question Id : 1592074971 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to equation of continuity

Options :

1. ✖ $w_1 a_1 = w_2 a_2$

2. ✖ $w_1 v_1 = w_2 v_2$

3. ✔ $v_1 a_1 = v_2 a_2$

4. ✖ $\frac{a_1}{v_1} = \frac{a_2}{v_2}$

Question Number : 157 Question Id : 1592074972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Coefficient of discharge C_d is equal to

Options :

1. ✔ $C_c \times C_v$

2. ✖ $C_c \times C_r$

3. ✖ $C_r \times C_v$

4. ✖

C_c / C_v

Question Number : 158 Question Id : 1592074973 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 discharge over a rectangular notch is

Options :

1. ✖ $\frac{2}{3} \times C_d \times b(\sqrt{2gH})$

2. ✖ $\frac{2}{3} \times C_d \times b(\sqrt{2g})H$

3. ✖ $\frac{2}{3} \times C_d \times b(\sqrt{2g}\ H^2)$

4. ✔ $\frac{2}{3} \times C_d \times b\sqrt{2g}\ H^{\frac{3}{2}}$

Question Number : 159 Question Id : 1592074974 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Kaplan turbine is an

Options :

1. ✖ Radial flow turbine

2. ✔ Axial flow reaction turbine

3. ✖ Impulse turbine

4. ✖ Mixed flow turbine

Question Number : 160 Question Id : 1592074975 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 phenomena in a pipe flow is termed as water hammer?

Options :

1. ✔ The sudden rise of pressure in a long pipe due to sudden closure of valve.

2. ✖

The rise of pressure in a pipe flow due to gradual closure of valve.

3. ✖ The rise of negative pressure.

4. ✖ The zero pressure in a pipe flow.

Question Number : 161 Question Id : 1592074976 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 depth is 8.64 cm on a field over a base period of 10 days, then duty is

Options :

1. ✖ 10 hectares per cum/sec

2. ✖ 100 hectares per cum/sec

3. ✖ 864 hectares per cum/sec

4. ✔

1000 hectares per cum/sec

Question Number : 162 Question Id : 1592074977 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Effective precipitation for a crop is defined as

Options :

1. ✖ The total precipitation minus infiltration losses

2. ✖ The depth of water transpired from the crop

3. ✖ The total precipitation minus evaporation and transpiration

4. ✔ The available water in the soil within the root zone of the crop

Question Number : 163 Question Id : 1592074978 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ratio between the area of a crop irrigated and the quantity of water required during the entire period of growth is known as

Options :

1. ✖ Delta

2. ✔ Duty

3. ✖ Base period

4. ✖ Crop period

Question Number : 164 Question Id : 1592074979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 runoff of a drainage basin is

Options :

1. ✖

Initial recharge + Ground water accretion + precipitation

2. ✖ Initial recharge + Ground water accretion - precipitation

3. ✖ Initial recharge - Ground water accretion + precipitation

4. ✔ Initial recharge - Ground water accretion – precipitation

Question Number : 165 Question Id : 1592074980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 growing irrigated paddy, the ideal water applications method is

Options :

1. ✖ Furrow Irrigation

Check basin Irrigation

2. ✔

Border method of Irrigation

3. ✖

Sprinkler Irrigation

4. ✖

Question Number : 166 Question Id : 1592074981 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The most suitable method of irrigation for areas having low rainfall and strong winds is

Options :

Furrow Irrigation

1. ✖

Sprinkler Irrigation

2. ✖

Drip Irrigation

3. ✔

Contour Farming

4. ✖

Question Number : 167 Question Id : 1592074982 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

Phreatic line in an earth dam is

a) Elliptical in shape

b) An equipotential line

c) The topmost flow line with zero water pressure

d) Approximately a parabola

Options :

1. ✖ a only

2. ✖ a and b

3. ✔ c and d

b, c and d

4. ✖

Question Number : 168 Question Id : 1592074983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 a function of a cross regulator

Options :

To enable effective regulation of the canal system as a whole

1. ✖

To raise the water level in case the water level in main canal falls low

2. ✖

To control silt entry into the off taking channel

3. ✔

To prevent possibilities of breaches in the tail trenches

4. ✖

Question Number : 169 Question Id : 1592074984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Seepage through embankments in an earthen dam is controlled by

Options :

1. ✖ Drainage filters

2. ✖ Relief wells

3. ✖ Provision of downstream berms

4. ✔ Drain trenches

Question Number : 170 Question Id : 1592074985 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Rigid Dam

Options :

1. ✖ Rock fill dam

2. ✖ Earth dam

3. ✖ Rock and Earth fill dam

4. ✔ Solid gravity dam

Question Number : 171 Question Id : 1592074986 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to IRC recommendations, the maximum spacing of the transverse expansion joints in unreinforced concrete pavements for a slab thickness of 20cm should be

Options :

1. ✖ 65 m

2. ✔ 37 m

3. ✖ 15 m

4. ✖

27 m

Question Number : 172 Question Id : 1592074987 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 super elevation (e) for 75 percent design speed (v m/sec or V kmph) is calculated neglecting friction

Options :

1. ✔ $e = \frac{V^2}{225R}$

2. ✖ $e = \frac{V^2}{325R}$

3. ✖ $e = \frac{V^2}{425R}$

4. ✖ $e = \frac{V^2}{525R}$

Question Number : 173 Question Id : 1592074988 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 California bearing ratio (CBR) method of flexible pavement design gives an idea about the

Options :

1. ✔ Stability of soil subgrade

2. ✖ Shear strength of soil

3. ✖ Characteristics of soil

4. ✖ Classification of soil

Question Number : 174 Question Id : 1592074989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

As per IRC the width of carriageway for a two-lane road, with raised kerbs to be considered as

Options :

1. ✖ 5.5 m

2. ✔ 7. 5 m

3. ✖ 8.0 m

4. ✖ 3.5 m

Question Number : 175 Question Id : 1592074990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Stopping Sight Distance (SSD) is 150m then what will be the Intermediate Sight Distance (ISD)?

Options :

1. ✖ 400 m

2. ✖ 150 m

3. ✖ 600 m

4. ✔ 300 m

Question Number : 176 Question Id : 1592074991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

According to the IRC, super elevation balances the centrifugal force corresponding to

Options :

1. ✖ Full design speed

2. ✖ Half of the design speed

3. ✔ Three-fourth of the design speed

4. ✖ One-fourth of the design speed

Question Number : 177 Question Id : 1592074992 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 broad gauge track, in Indian railways the standard length of rail is

Options :

1. ✔ 12.8 m

2. ✖ 11.8 m

3. ✖ 10.8 m

4. ✖ 13.8 m

Question Number : 178 Question Id : 1592074993 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

To reduce the wearing of rails, the rails are placed at a slope of

Options :

1. ✖ Outward 1 in 20

2. ✔ Inward 1 in 20

3. ✖ Inward 1 in 30

4. ✖ Outward 1 in 30

Question Number : 179 Question Id : 1592074994 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of sleepers used per rail length on the track is known as

Options :

1. ✖ Sleeper strength

2. ✖ Sleeper ratio

3. ✖ Sleeper coefficient

4. ✔ Sleeper density

Question Number : 180 Question Id : 1592074995 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The average number of vehicles per day passing on a section of the road when opened to traffic, is known as

Options :

peak hour traffic

1. ✖

design hourly volume

2. ✖

average daily traffic

3. ✔

traffic volume per hour

4. ✖

Question Number : 181 Question Id : 1592074996 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 sewer is commonly designed to attain self-cleansing velocity at

Options :

Peak hourly rate of flow

1. ✖

Average hourly rate of flow

2. ✖

Minimum hourly rate of flow

3. ✔

4. ✖ Sewer running full

Question Number : 182 Question Id : 1592074997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 2% solution of sewage sample is kept at an incubation temperature of 20°C. If initial DO (dissolved Oxygen) and final DO values after 5 days' incubation period are 8.5 mg/L and 5.5 mg/L respectively, then the BOD will be

Options :

1. ✖ 50 mg/L

2. ✔ 150 mg/L

3. ✖ 250 mg/L

4. ✖ 350 mg/L

Question Number : 183 Question Id : 1592074998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 alkalinity test amount of titrant required with phenolphthalein indicator is zero. It indicates

Options :

1. ✔ pH is below 8.3

2. ✖ pH is more than 8.3

3. ✖ Neutral water

4. ✖ Acidic water

Question Number : 184 Question Id : 1592074999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 forms of chlorine has no disinfectant property?

Options :

1. ✖ Monochloramine

2. ✖ Hypochlorite ion

3. ✔ Hypochlrous acid

4. ✖ Trichloramine

Question Number : 185 Question Id : 1592075000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cholera disease is due to

Options :

1. ✖ Lapto Spirae

2. ✖ Salmonella Typhosa

3. ✔ Vibrio Comma

4. ✖ Giardia Lambia

Question Number : 186 Question Id : 1592075001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 sets of processes is a part of self-purification of streams?

Options :

1. ✖ Settling, bio-degradation and desalination

2. ✔ Settling, bio-degradation and aeration

3. ✖ Floatation, ion-exchange and desalination

4. ✖ Desalination, ion exchange and reverse osmosis

Question Number : 187 Question Id : 1592075002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Corrosion of concrete sewers occurs due to

Options :

1. ✖ High velocity of flow in sewers

2. ✔

Anaerobic decompositions of sewage solids

Aerobic decompositions of sewage solids

3. ✖

High pH value of the sewage

4. ✖

Question Number : 188 Question Id : 1592075003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match List- I (Valves) with List- II (Uses) and select the correct answer using the codes given below the lists

	List- I		List- II
A.	Sluice valve	1.	Used where gravity flow is required through pipe line
B.	Check valve	2.	Used to maintain constant level of water
C.	Air inlet valve	3.	Used for reversal of flow
D.	Ball valve	4.	Used for isolating

Options :

1. ✖

1-A	2-B	3-C	4-D

2. ✖

3-A	4-B	1-C	2-D

3. ✖

1-A	3-B	2-C	4-D

4. ✔

4-A	3-B	1-C	2-D

Question Number : 189 Question Id : 1592075004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 population figure in a growing town are as follows:

Year	Population
1970	40,000
1980	46,000
1990	53,000
2000	58,000

The predicted population in 2010 by Arithmetic Regression method is

Options :

1. ✖ 62,000

2. ✖ 63,000

3. ✔ 64,000

4. ✖ 65,000

Question Number : 190 Question Id : 1592075005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 pH value of potable water, as specified by IS 456:2000?

Options :

1. ✖ Equal to 7

2. ✖ Between 8 and 10

3. ✖ Between 3 and 5

4. ✔ Not less than 6

Question Number : 191 Question Id : 1592075006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 type of bond in a brick masonry in which each course consists of alternate headers and stretches, is called

Options :

1. ✖ English bond

2. ✖ stretching bond

3. ✔ Flemish bond

4. ✖ heading bond

Question Number : 192 Question Id : 1592075007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 filling in cavities with cement slurry is known as

Options :

1. ✖ Coping

2. ✖ Beam filing

3.

✖ Gunniting

4. ✔ Grouting

Question Number : 193 Question Id : 1592075008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 silicious sandstone which has been subjected to metamorphic action

Options :

1. ✔ Quartzite

2. ✖ Dolomite

3. ✖ Laterite

4. ✖ Kankar

Question Number : 194 Question Id : 1592075009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Gneiss is chemically classified as

Options :

1. ✖ Calcareous rock

2. ✖ Argillaceous rock

3. ✔ Silicious rock

4. ✖ Metamorphic rock

Question Number : 195 Question Id : 1592075010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 compressive strength of second-class bricks should not be less than

Options :

1. ✖ 9.5 MN/m^2

2. ✖ 6.5 MN/m^2

3. ✖ $8.5\ MN/m^2$

4. ✔ $7.5\ MN/m^2$

Question Number : 196 Question Id : 1592075011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Le-chatelier method is used to determine

Options :

1. ✖ Fineness of cement

2. ✔ Soundness of cement

3. ✖ Strength of cement

4. ✖ Consistency of cement

Question Number : 197 Question Id : 1592075012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 defect caused by imperfect seasoning is called

Options :

1. ✖ Wet rot

2. ✖ Dry rot

3. ✔ Honey combing

4. ✖ Rind gall

Question Number : 198 Question Id : 1592075013 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 wood generally used for railway sleepers is

Options :

1. ✖ Neem

2. ✔ Kail

3. ✖ Deodar

4. ✖ Babul

Question Number : 199 Question Id : 1592075014 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which type of cement is recommended in large mass concrete works such as dam?

Options :

1. ✔ Low heat cement

2. ✖ High alumina cement

3. ✖ Ordinary portland cement

4. ✖ Rapid hardening cement

Question Number : 200 Question Id : 1592075015 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 shows correct decreasing order of rate of hydration of portland cement compounds

Options :

1. ✖ $C_2S > C_3A > C_3S > C_4AF$

2. ✖ $C_3A > C_4AF > C_3S > C_2S$

3. ✖ $C_4AF > C_3A > C_2S > C_3S$

4. ✔ $C_4AF > C_3A > C_3S > C_2S$