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 1st Aug 2022 Shift2
Subject Name :	Civil Engineering
Creation Date :	2022-08-01 18:29:52
Duration :	180
Total Marks :	200
Display Marks:	No
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Civil Engineering

Group Number :	1
Group Id :	81959969
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 :	819599266
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 :	819599308
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 81959913636 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $A = \begin{bmatrix} a^2 & ab & ac \\ ab & b^2 & bc \\ ac & bc & c^2 \end{bmatrix}$ and $a^2 + b^2 + c^2 = 1$ then $A^2 =$

Options :

1. ✖ I

2. ✔ A

3. ✖ A^{-1}

4. ✖ A^3

Question Number : 2 Question Id : 81959913637 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $adjA = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 1 \\ 2 & 1 & -1 \end{bmatrix}$ then $adj\ 2A =$

Options :

1. ✖ $\begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 1 \\ 2 & 1 & -1 \end{bmatrix}$

2. ✖ $\begin{bmatrix} 2 & -2 & 0 \\ 4 & 6 & 2 \\ 4 & 2 & -2 \end{bmatrix}$

3. ✔ $\begin{bmatrix} 4 & -4 & 0 \\ 8 & 12 & 4 \\ 8 & 4 & -4 \end{bmatrix}$

4. ✖ $\begin{bmatrix} 8 & -8 & 0 \\ 16 & 24 & 8 \\ 16 & 8 & -8 \end{bmatrix}$

Question Number : 3 Question Id : 81959913638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 and c are distinct and $\begin{vmatrix} a & a^2 & a^3-1 \\ b & b^2 & b^3-1 \\ c & c^2 & c^3-1 \end{vmatrix} = 0$ then

Options :

1. ✖ $a+b+c=1$

2. ✖ $a+b+c=0$

3. ✖ $ab+bc+ca=0$

4. ✔ $abc=1$

Question Number : 4 Question Id : 81959913639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The System of linear equations $x+y+z=2,\ 2x+y-z=3$ and $3x+2y+kz=4$ has a unique solution if

Options :

1. ✔ $k \neq 0$

2. ✖ $-1 < k < 1$

3. ✖ $-2 < k < 2$

4. ✖ $k = 0$

Question Number : 5 Question Id : 81959913640 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\frac{1-x+6x^2}{x-x^3} = \frac{A}{x} + \frac{B}{1-x} + \frac{C}{1+x}$ then $A - B =$

Options :

1. ✖ -1

2. ✖ -4

3. ✖ -3

4. ✔ -2

Question Number : 6 Question Id : 81959913641 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\frac{ax+b}{(3x+4)^2} = \frac{1}{3x+4} - \frac{3}{(3x+4)^2}$ then $a + b =$

Options :

1. ✖ 3

2. ✔ 4

3. ✖ 5

4. ✖ 6

Question Number : 7 Question Id : 81959913642 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 $cos(x + 2x + 3x + \cdots + nx)$

Options :

1. ✖ $2\pi(n+1)$

2. ✔ $\frac{4\pi}{n(n+1)}$

3. ✖ $\frac{2\pi}{n(n+1)}$

4. ✖ 2π

Question Number : 8 Question Id : 81959913643 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $3sin\alpha = 5sin\beta$ then $\frac{tan\left(\frac{\alpha+\beta}{2}\right)}{tan\left(\frac{\alpha-\beta}{2}\right)} =$

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 9 Question Id : 81959913644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $x = sin(2tan^{-1}2)$ and $y = sin\left(\frac{1}{2}tan^{-1}\left(\frac{4}{3}\right)\right)$ then

Options :

1. ✔ $x > y \text{ and } y^2 = 1 - \text{x}$

2. ✖ $x < y$

3. ✖ $x > y \text{ and } y^2 = \text{x}$

4. ✖ $y^2 = 1 + \text{x}$

Question Number : 10 Question Id : 81959913645 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

General solution of $tan5\theta tan2\theta = 1$ *is*

Options :

1. ✔ $\frac{2n\pi}{7} \pm \frac{\pi}{14}, n \in Z$

2. ✖ $\frac{n\pi}{7}, n \in Z$

3. ✖ $n\pi \pm \frac{\pi}{2}, n \in Z$

4. ✖ $\frac{n\pi}{2} \pm \frac{\pi}{14}, n \in Z$

Question Number : 11 Question Id : 81959913646 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $(a + b + c)(b + c - a) = 3bc$ then $\angle A =$

Options :

1. ✖ 30^0

2. ✖ 45^0

3. ✔ 60^0

4. ✖ 135^0

Question Number : 12 Question Id : 81959913647 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $\left(\sqrt{3}+i\right)^{100} = 2^{99}(a+ib)$, then $a^2+b^2 =$

Options :

1. ✔ 4

2. ✖ 1

3. ✖ 3

4. ✖ 2

Question Number : 13 Question Id : 81959913648 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of "x" so that the line through (3,x) and (2,7) is parallel to the line through (-1,4) and (0,6) is

Options :

1. ✖ 3

2. ✖ 6

3. ✔ 9

4. ✖ 8

Question Number : 14 Question Id : 81959913649 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 the circle with centre $\left(\frac{a}{2},\frac{b}{2}\right)$ and radius $\sqrt{\frac{a^2+b^2}{4}}$ is

Options :

1. ✖ $x^2+y^2-ax-by=(a+b)^2$

2. ✔ $x^2+y^2-ax-by=0$

3. ✖ $x^2+y^2-ax-by=(a-b)^2$

4. ✖ $x^2+y^2-ax-by=\frac{a^2+b^2}{4}$

Question Number : 15 Question Id : 81959913650 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 parabola $y^2=4ax$ passes through the point (-3,2), then the length of its latus rectum is _____ units

Options :

1. ✖ $\frac{2}{3}$

2. ✔ $\frac{4}{3}$

3. ✖ $\frac{1}{3}$

4. ✖ 4

Question Number : 16 Question Id : 81959913651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 the ellipse whose latus rectum is 15units and the distance between the foci is 10 units with axes being co ordinate axes is

Options :

1. ✔ $3x^2 + 4y^2 = 300$

2. ✖ $4x^2 + 3y^2 = 300$

3. ✖ $x^2 + 4y^2 = 300$

4. ✖ $3x^2 + y^2 = 300$

Question Number : 17 Question Id : 81959913652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 the Hyperbola $xy = 10$ *is*

Options :

1. ✔ $\sqrt{2}$

2. ✖ 2

3. ✖ $\sqrt{3}$

4. ✖ $\sqrt{\frac{3}{2}}$

Question Number : 18 Question Id : 81959913653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\underset{x \to 1}{\text{Lt}} \frac{1+logx-x}{1-2x+x^2} =$

Options :

1. ✖ 0

2. ✔ $-\frac{1}{2}$

3. ✖ 1

4. ✖ -1

Question Number : 19 Question Id : 81959913654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $2^x + 2^y = 2^{x+y}$ then $\frac{dy}{dx} =$

Options :

1. ✖ 0

2. ✖ 1

3. ✔ -2^{y-x}

4. ✖ 2^{x-y}

Question Number : 20 Question Id : 81959913655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $y = \sqrt{cos2x}$ then $y\frac{d^2y}{dx^2} + 2y^2 =$

Options :

1. ✖ 0

2. ✖ $\left(\frac{dy}{dx}\right)^2$

3. ✔ $-\left(\frac{dy}{dx}\right)^2$

4. ✖ $y\left(\frac{dy}{dx}\right)$

Question Number : 21 Question Id : 81959913656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $u = e^x cosy,$ and $v = e^x siny$ then $\frac{\partial u}{\partial x} =$

Options :

1. ✖ $\frac{\partial u}{\partial y}$

2. ✖ $\frac{-\partial u}{\partial y}$

3. ✖ $\frac{-\partial v}{\partial y}$

4. ✔ $\frac{\partial v}{\partial y}$

Question Number : 22 Question Id : 81959913657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 the triangle formed by a tangent to the curve $2xy = a^2$ and coordinate axes is _____ units

Options :

1. ✔ a^2

2. ✖ $2a^2$

3. ✖ $3a^2$

4. ✖ $4a^2$

Question Number : 23 Question Id : 81959913658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 x^{-x} is

Options :

1. ✖ $\frac{1}{e}$

2. ✔ $e^{1/e}$

3. ✖ $e^{-1/e}$

4. ✖ e

Question Number : 24 Question Id : 81959913659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The rate of change of volume of a sphere is equal to the rate of change of its radius. Then its radius is

Options :

1. ✖ $\frac{1}{2\pi}$

2. ✖ $2\sqrt{\pi}$

3. ✖ $\sqrt{2\pi}$

4. ✔ $\frac{1}{2\sqrt{\pi}}$

Question Number : 25 Question Id : 81959913660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\int cos\sqrt{x}\ dx$

Options :

1. ✔ $2(\sqrt{x}\sin\sqrt{x} + \cos\sqrt{x})$

2. ✖ $\sqrt{x}\sin\sqrt{x} - \cos\sqrt{x}$

3. ✖ $2(\sqrt{x}\sin\sqrt{x} - \cos\sqrt{x})$

4. ✖ $\frac{\cos\sqrt{x}}{2\sqrt{x}}$

Question Number : 26 Question Id : 81959913661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\int_0^{\frac{\pi}{2}} \frac{e^{\cos\theta}}{e^{\cos\theta}+e^{\sin\theta}}\, d\theta$

Options :

1. ✔ $\frac{\pi}{4}$

2. ✖ e^{π}

3. ✖ $\frac{\pi}{2}$

4. ✖ 0

Question Number : 27 Question Id : 81959913662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The area of the region enclosed by the curve $y = e^{x/a} + e^{-x/a}$ the x- axis and the lines $x = \pm a$ is _____ sq. units

Options :

1. ✖ $\left(e - \frac{1}{e}\right)$

2. ✔ $2a\left(e - \frac{1}{e}\right)$

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

4. ✖ $a\left(e-\frac{1}{e}\right)$

Question Number : 28 Question Id : 81959913663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The volume generated by the rotation of the area bounded by the curve $y^2 = x^3$, the y- axis and the lines $y = 0, y = 8$ about y- axis is _____ cu. units

Options :

1. ✖ 192π

2. ✔ $\frac{384\pi}{7}$

3. ✖ $\frac{384\pi^2}{7}$

4. ✖ $\frac{384\pi}{5}$

Question Number : 29 Question Id : 81959913664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Mean Square Value of $f(x) = tanx$ as "x" varies from 0 to $\frac{\pi}{3}$

Options :

1. ✖ $\frac{1}{\pi}\left(\sqrt{3}-\frac{\pi}{3}\right)$

2. ✖ $\frac{1}{\pi}\left(\sqrt{3}+\frac{\pi}{3}\right)$

3. ✔ $\frac{1}{\pi}\left(3\sqrt{3}-\pi\right)$

4. ✖ $\frac{\pi}{3}\left(\sqrt{3}-\frac{\pi}{3}\right)$

Question Number : 30 Question Id : 81959913665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 function $f(x)$at 5 discrete points are given below

x	0	0.1	0.2	0.3	0.4
$f(x)$	0	10	40	90	160

then the value of $\int_0^4 f(x)dx$

Options :

1. ✖ 24

2. ✖ 23

3. ✔ 22

4. ✖ 20

Question Number : 31 Question Id : 81959913666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 $\frac{d^2y}{dx^2}=\left(y+\left(\frac{dy}{dx}\right)^2\right)^{1/4}$ is

Options :

1. ✔ 2, 4

2. ✖ 4, 2

3. ✖ 2, 2

4. ✖ 2, 1

Question Number : 32 Question Id : 81959913667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 associated with the primitive $Ax^2 + By^2 = 1$ is

Options :

1. ✖ $xy\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) = 0$

2. ✖ $y\frac{d^2y}{dx^2} + x\left(\frac{dy}{dx}\right)^2 - y\left(\frac{dy}{dx}\right) = 0$

3. ✔ $xy\frac{d^2y}{dx^2} + x\left(\frac{dy}{dx}\right)^2 - y\left(\frac{dy}{dx}\right) = 0$

4. ✖ $xy\frac{d^2y}{dx^2} - x\left(\frac{dy}{dx}\right)^2 + y\left(\frac{dy}{dx}\right) = 0$

Question Number : 33 Question Id : 81959913668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Solution of the differential equation $(3e^{3x}y - 2x)dx + e^{3x}dy = 0$ is

Options :

1. ✖ $ye^{-3x} = x^2 + C$

2. ✔ $ye^{3x} = x^2 + C$

3. ✖ $ye^{3x} = -x^2 + C$

4. ✖ $ye^{3x} = \frac{1}{2}x^2 + C$

Question Number : 34 Question Id : 81959913669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Integrating Factor for the differential equation $\frac{dp}{dt} + k_2 p = k_1 e^{-k_1 t}$ is

Options :

1. ✖ $e^{-k_1 t}$

2. ✖ $e^{-k_2 t}$

3. ✖ $e^{k_1 t}$

4. ✔ $e^{k_2 t}$

Question Number : 35 Question Id : 81959913670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 $4\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + y = 0$ is

Options :

1. ✖ $y = (A + Bx)e^{-x/2}$

2. ✔ $y = (A + Bx)e^{x/2}$

3. ✖ $y = Ae^{x/2} + Be^{-x/2}$

4. ✖ $y = (A + Bx)e^{x}$

Question Number : 36 Question Id : 81959913671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The particular integral of $2\frac{d^2y}{dx^2} + \frac{dy}{dx} - 6y = e^{-2x}$ is

Options :

1. ✔ $-\frac{x}{7}e^{-2x}$

2. ✖ $\frac{x}{7}e^{-2x}$

3. ✖ $\frac{1}{7}e^{-2x}$

4. ✖ $-\frac{1}{7}e^{-2x}$

Question Number : 37 Question Id : 81959913672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Particular Integral of $\frac{d^3y}{dx^3} - 1 = sin3x$ is

Options :

1. ✖ $\frac{1}{730}(27\cos 3x + \sin 3x)$

2. ✔ $\frac{1}{730}(27\cos 3x - \sin 3x)$

3. ✖ $\frac{-1}{730}(27\cos 3x + \sin 3x)$

4. ✖ $\frac{-1}{730}(27\cos 3x - \sin 3x)$

Question Number : 38 Question Id : 81959913673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Particular Integral of $\frac{d^2y}{dx^2} - 3\frac{dy}{dx} + 2y = x + x^2$ is

Options :

1. ✔ $\frac{1}{2}(x^2 + 4x + 5)$

2. ✖ $\frac{1}{2}(x^2 - 4x - 5)$

3. ✖ $\frac{1}{2}(x^2 - 4x + 5)$

4. ✖ $-\frac{1}{2}(x^2 + 4x + 5)$

Question Number : 39 Question Id : 81959913674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\{cos4tsin2t\} =$

Options :

1. ✖ $\frac{4}{s^2+4} + \frac{s}{s^2+36}$

2. ✔ $\frac{3}{s^2+36} - \frac{1}{s^2+4}$

3. ✖ $\frac{2}{s^2+4} + \frac{3s}{s^2+36}$

4. ✖ $\frac{3}{s^2+36} + \frac{1}{s^2+4}$

Question Number : 40 Question Id : 81959913675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\left\{\frac{sint}{t}\right\} = tan^{-1}\left(\frac{1}{s}\right)$ then $L\left\{\frac{sinat}{t}\right\}$

Options :

1. ✖ $tan^{-1}\left(\frac{s}{a}\right)$

2. ✔ $tan^{-1}\left(\frac{a}{s}\right)$

3. ✖ $\frac{1}{a}tan^{-1}\left(\frac{a}{s}\right)$

4. ✖ $\frac{1}{a}tan^{-1}\left(\frac{s}{a}\right)$

Question Number : 41 Question Id : 81959913676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L\{tcos3t\} =$

Options :

1. ✖ $\frac{9}{(s^2+9)^2}$

2. ✖ $\frac{s^2}{(s^2+9)^2}$

3. ✖ $\frac{s^2+9}{(s^2-9)^2}$

4. ✔ $\frac{s^2-9}{(s^2+9)^2}$

Question Number : 42 Question Id : 81959913677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $log\sqrt{\frac{s^2+1}{s^2}}$

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

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

4. ✔ $log\sqrt{\left(\frac{s^2}{s^2+1}\right)}$

Question Number : 43 Question Id : 81959913678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$L^{-1}\left(\frac{s}{(s+1)^2}\right) =$

Options :

1. ✔ $e^{-t}(1-t)$

2. ✖ $e^{t}(t-1)$

3. ✖ $e^{-t}(t-1)$

4. ✖ $e^{t}(1-t)$

Question Number : 44 Question Id : 81959913679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 $L^{-1}\{F(s)\} = f(t)$ then $L^{-1}\left\{\int_s^{\infty} F(s)ds\right\} =$

Options :

1. ✖ $f'(t)$

2. ✖ $tf'(t)$

3. ✖ $tf(t)$

4. ✔ $\frac{f(t)}{t}$

Question Number : 45 Question Id : 81959913680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 system is described by the differential equation $\frac{d^2y}{dt^2} + 4\frac{dy}{dt} + 5y = 0$

assuming $y(0) = 0, y'(0) = 0$ then $L\{y(t)\}$

Options :

1. ✖ $\frac{1}{s(s^2+4s+5)}$

2. ✖ $\frac{s}{(s^2+4s+5)}$

3. ✖ $\frac{5}{(s^2+4s+5)}$

4. ✔ $\frac{5}{s(s^2+4s+5)}$

Question Number : 46 Question Id : 81959913681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

$L^{-1}\left(\frac{1}{s(s^2+a^2)}\right) =$

Options :

1. ✖ $\frac{1-sinat}{a^2}$

2. ✖ $\frac{1+cosat}{a^2}$

3. ✔ $\frac{1-cosat}{a^2}$

4. ✖ $\frac{1+sinat}{a^2}$

Question Number : 47 Question Id : 81959913682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The Fourier series expansion of $f(x) = |sinx|$ over $(-l, l)$,

the value of $b_n =$

Options :

1. ✔ 0

2. ✖ $\frac{2}{l(n^2-1)}$

3. ✖ $\frac{4}{l(n^2-1)}$

4. ✖ $\frac{4}{l(1-n^2)}$

Question Number : 48 Question Id : 81959913683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

If $f(x) = \begin{cases} 0, -\pi < x < 0 \\ x^2, \ 0 < x < \pi \end{cases}$ and

$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty}(a_n cosnx + b_n sinnx)$ then $a_0 =$

Options :

1. ✖ $\frac{\pi}{3}$

2. ✖ $\frac{3}{\pi}$

3. ✔ $\frac{\pi^2}{3}$

4. ✖ $\frac{\pi^2}{2}$

Question Number : 49 Question Id : 81959913684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Half range cosine series expansion of the function $f(x) = x - x^2,\ 0 < x < 1$ is represented by $a_2 =$

Options :

1. ✔ $-\frac{4}{\pi^2}$

2. ✖ $\frac{4}{\pi^2}$

3. ✖ $\frac{1}{\pi^2}$

4. ✖ $-\frac{1}{\pi^2}$

Question Number : 50 Question Id : 81959913685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 "b_4" in the Fourier series expansion of $f(x) = 3x^2 - 2$ in $(-3,3)$ is_____

Options :

1. ✖ 14

2. ✖ $\frac{-108}{\pi^2}$

3. ✖ $\frac{108}{\pi^2}$

4. ✔ 0

Physics

Section Id :	819599267
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 :	819599309
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 81959913686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dimensional formula for kinetic energy is

Options :

1. ✖ $M^0L^0T^0$

2. ✔ $M^1L^2T^{-2}$

3. ✖ $M^1L^2T^{-1}$

4. ✖ $M^1L^1T^{-2}$

Question Number : 52 Question Id : 81959913687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 photoelectric effect, the photo current

Options :

1. ✖ depends both on intensity and frequency of incident light

2. ✔ does not depends on the frequency of photon but depends only on intensity of incident light

3. ✖ decreases with increase of frequency of incident photon

4. ✖ increases with increase of frequency of incident photon

Question Number : 53 Question Id : 81959913688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Optical fibers uses the phenomenon of

Options :

1. ✔ total internal reflection

2. ✖ refraction

3. ✖ dispersion

4. ✖ scattering

Question Number : 54 Question Id : 81959913689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The volume of 1 mole of an ideal gas at STP

Options :

1. ✔ $2.24 \times 10^{-2} m^3$

2. ✖ $2.24 \times 10^{-3} m^3$

3. ✖ $2.42 \times 10^{-3} m^3$

4. ✖ $24.2 \times 10^{-3} m^3$

Question Number : 55 Question Id : 81959913690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 statement is correct in the case of an isothermal process of a gas

Options :

1. ✖ Temperature changes

2. ✔ Exchange of heat takes place between gas and surroundings

3. ✖ Boyle's law does not valid

4. ✖ It is a quick process

Question Number : 56 Question Id : 81959913691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 angle between $\overrightarrow{P}$ and the resultant of $(\overrightarrow{P}+\vec{Q})$ and $(\vec{P}-\vec{Q})$

Options :

1. ✖ $\tan^{-1}\frac{(P-Q)}{(P+Q)}$

2. ✖ $\tan^{-1}(\frac{P}{Q})$

3. ✖ $\tan^{-1}(\frac{Q}{P})$

4. ✔ Zero

Question Number : 57 Question Id : 81959913692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 magnitudes of scalar and vector products of two vectors are 6 and $6\sqrt{3}$ respectively, then the angle between the vectors

Options :

1. ✖ 15^0

2. ✖ 30^0

3. ✔ 60^0

4. ✖ 75^0

Question Number : 58 Question Id : 81959913693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 equal forces (F each) act at a point inclined to each other at an angle of 120^0.

The magnitude of their resultant is

Options :

1. ✖ F/2

2. ✖ F/4

3. ✔ F

4. ✖ 2F

Question Number : 59 Question Id : 81959913694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The quantity which remains unchanged during the flight of an oblique projectile is

Options :

1. ✖ Horizontal distance

2. ✖ Vertical distance

3. ✖ Vertical component of velocity

4. ✔ Horizontal component of velocity

Question Number : 60 Question Id : 81959913695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An object is thrown along a direction inclined at angle of 45^0 with the horizontal.

If 'R' represents horizontal range and 'H' represents vertical height of object,

which of the following is correct

Options :

1. ✖ R=H

2. ✖ R=2H

3. ✖ R=3H

4. ✔ R=4H

Question Number : 61 Question Id : 81959913696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A bullet is fired with a velocity 10 m/s making an angle of 60^0 with the horizontal plane.

The horizontal component of the velocity of bullet when it reaches maximum height is

Options :

1. ✖ 10 m/s

2. ✖ 0

3. ✖ 8 m/s

4. ✔ 5 m/s

Question Number : 62 Question Id : 81959913697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 μ_s, μ_k, μ_r are coefficients of static friction, sliding friction and rolling friction, then

Options :

1. ✔ $\mu_r < \mu_k < \mu_s$

2. ✖ $\mu_k < \mu_r < \mu_s$

3. ✖ $\mu_k < \mu_s < \mu_r$

4. ✖ $\mu_s = \mu_k = \mu_r$

Question Number : 63 Question Id : 81959913698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body falling from a height of 10 metre rebounds from a hard floor. If it loses 20% of its energy in impact, it will rise

Options :

1. ✖ 10m

2. ✔ 8m

3. ✖ 5m

4. ✖ 12m

Question Number : 64 Question Id : 81959913699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body of mass 10 kg is travelling with uniform speed of 5m/s. Its kinetic energy is

Options :

1. ✖ 25 J

2. ✔ 125 J

3. ✖ 1250 J

4. ✖ 1000 J

Question Number : 65 Question Id : 81959913700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 stone is thrown up vertically and returns to ground, its potential energy is maximum

Options :

1. ✖ During upward journey

2. ✔ At the maximum height

3. ✖ During return journey

4. ✖ On the ground

Question Number : 66 Question Id : 81959913701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 second's pendulum is taken from earth to moon. If it is to act as a second's pendulum there also, the length of the pendulum

Options :

1. ✖ Should be increased

2. ✔ Should be decreased

3. ✖ Need not be changed

4. ✖ Difficult to imagine

Question Number : 67 Question Id : 81959913702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 simple harmonic motion, the maximum acceleration and maximum velocity are $31.4m/s^2$ and 10m/s. The time period is

Options :

1. ✖ 4s

2. ✖ 3s

3. ✔ 2s

4. ✖ 0.5s

Question Number : 68 Question Id : 81959913703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A person standing between two hills fires a gun. He hears first echo after 1 second and second echo after 2 second. If velocity of sound in air is 340m/s, the distance between the hills is

Options :

1. ✖ 170m

2. ✖ 340m

3. ✔ 510m

4. ✖ 1020m

Question Number : 69 Question Id : 81959913704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 tuning forks of frequencies 256 and 258 vibrations /second are sounded together. Then the time interval between two consecutive maxima heard by an observer is

Options :

1. ✖ 2 s

2. ✔ 0.5 s

3. ✖ 250 s

4. ✖ 252 s

Question Number : 70 Question Id : 81959913705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Hooks law, the relation between stress and strain is

Options :

1. ✔ Stress α Strain

2. ✖ Stress $\alpha \frac{1}{Strain}$

3. ✖ Stress α $(Strain)^2$

4. ✖ Stress α $(Strain)^{\frac{1}{2}}$

Question Number : 71 Question Id : 81959913706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

An iron needle slowly placed on surface of water floats on it because

Options :

1. ✖ of elasticity

2. ✖ of viscosity

3. ✔ of surface tension

4. ✖ of its shape

Question Number : 72 Question Id : 81959913707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What happens to the force between magnetic poles when their pole strength and the distance between them are both doubled

Options :

1. ✖ Force increases by two times

2. ✔ Force remains unchanged

3. ✖ Force becomes halved

4. ✖ Force increases by four times

Question Number : 73 Question Id : 81959913708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Substances which when placed in a magnetic field acquire feeble magnetisation in a direction opposite to that of the applied field are called

Options :

1. ✔ Diamagnetic substances

2. ✖ Paramagnetic substances

3. ✖ Ferromagnetic substances

4. ✖ Ferrimagnetic substances

Question Number : 74 Question Id : 81959913709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The resistance of wire of length 'L' and diameter 'D' is R Ω. The resistance of another wire of same material having length 'L' and diameter $\frac{D}{2}$ is _____ Ω.

Options :

1. ✖ $\frac{1}{2}$R

2. ✖ 2R

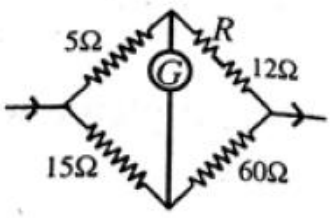
3. ✔ 4R

4. ✖ 16R

Question Number : 75 Question Id : 81959913710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 balance the bridge in the circuit, the value of R is



Options :

1. ✔ 8 Ω

2. ✖ $4\ \Omega$

3. ✖ $20\ \Omega$

4. ✖ $12\ \Omega$

Chemistry

Section Id :	819599268
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 :	819599310
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 81959913711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 electrons present in outermost shell of copper atom is

Options :

1. ✖ 2

2. ✔ 1

3. ✖ 18

4. ✖ 11

Question Number : 77 Question Id : 81959913712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The bond exists between NH_3 and H^+ in NH_4^+ is

Options :

1. ✖ Ionic

2. ✖ Covalent

3. ✔ Coordinate covalent

4. ✖ Metallic

Question Number : 78 Question Id : 81959913713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Possible all oxidation numbers of hydrogen are

Options :

1. ✖ -1 and 0

2. ✖ +1 and 0

3. ✖ +1 and -1

4. ✔ +1, -1 and 0

Question Number : 79 Question Id : 81959913714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Molecular weight of a dibasic acid is M. Its equivalent weight is

Options :

1. ✖ M

2. ✔ $M/2$

3. ✖ 2M

4. ✖ M+2

Question Number : 80 Question Id : 81959913715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Lyophobic colloids are

Options :

1. ✔ required stabilisers

2. ✖ prepared by direct mixing

3. ✖ more stable

4. ✖ solvent attracting colloids

Question Number : 81 Question Id : 81959913716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Lewis acid

Options :

1. ✔ HCl

2. ✖ BF_3

3. ✖ Mg^{2+}

4. ✖ SO_2

Question Number : 82 Question Id : 81959913717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 with more pH value

Options :

1. ✖ 0.1 M HCl

2. ✖ 0.5 M HCl

3. ✖ 0.1 M NaOH

4. ✔ 0.5 M NaOH

Question Number : 83 Question Id : 81959913718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Froth floatation is used concentrate _____ ores

Options :

1. ✖ oxide

2. ✖ carbonate

3. ✔ sulphide

4. ✖ chloride

Question Number : 84 Question Id : 81959913719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 element is not present in German silver

Options :

1. ✔ Fe

2. ✖ Ni

3. ✖ Cu

4. ✖ Zn

Question Number : 85 Question Id : 81959913720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 device that converts the energy of combustion of fuels like hydrogen and methane directly into electrical energy is known as

Options :

1. ✖ Electrolytic cell

2. ✖ Leclanche cell

3. ✔ Fuel cell

4. ✖ Ni- Cd cell

Question Number : 86 Question Id : 81959913721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Anode used in the electrolytic refining of copper is

Options :

1. ✖ Pt

2. ✔ Impure Cu

3. ✖ Graphite

pure copper

4. ✖

Question Number : 87 Question Id : 81959913722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Faradays of current required to decompose 36 grams of water completely

Options :

1. ✖ 2

2. ✔ 4

3. ✖ 3

4. ✖ 6

Question Number : 88 Question Id : 81959913723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The atomic weight of Cu is x, the electrochemical equivalent of Cu in the solution of copper sulphate is

Options :

1. ✖ $\frac{2x}{F}$

2. ✔ $\frac{x}{2F}$

3. ✖ $\frac{x}{F}$

4. ✖ xF

Question Number : 89 Question Id : 81959913724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Rate of corrosion increases with

Options :

1. ✖ decrease of temperature

2. ✖ decrease of humidity

3. ✔ reactivity of metal

4. ✖ purity of metal

Question Number : 90 Question Id : 81959913725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Chemical formula of the rust is

Options :

1. ✔ $Fe_2O_3.XH_2O$

2. ✖ Fe_3O_4

3. ✖ $Fe_2(C_2O_4)_3$

4. ✖ $FeCl_3$

Question Number : 91 Question Id : 81959913726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Exhausted permutit is regenerated by using

Options :

1. ✖ $CaCl_2$

2. ✖ HCl

3. ✔ $NaCl$

4. ✖ $MgSO_4$

Question Number : 92 Question Id : 81959913727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Temporary hardness of water containing 16.2 mg of $Ca(HCO_3)_2$ and 7.3 mg of $Mg(HCO_3)_2$ per litre

Options :

1. ✖ 10 mg/lit

2. ✖ 5 mg/lit

3. ✔ 15 mg/lit

4. ✖ 20 mg/lit

Question Number : 93 Question Id : 81959913728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 an example of

Options :

1. ✔ thermosetting plastic

2. ✖ fibre

3. ✖ thermoplastic

4. ✖ elastomer

Question Number : 94 Question Id : 81959913729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 are monomers of butyl rubber

Options :

1. ✖ Butadiene and styrene

2. ✖ Chloroprene

3. ✖ Phenol and formaldehyde

4. ✔ Isobutylene and isoprene

Question Number : 95 Question Id : 81959913730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Main gases present in producer gas

Options :

1. ✖ CO & H_2

2. ✖ CH_4 & CO_2

3. ✔ CO & N_2

4. ✖ H_2 & CH_4

Question Number : 96 Question Id : 81959913731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 moles of oxygen required for combustion of 30 grams of ethane is

Options :

1. ✖ 7

2. ✖ 2

3. ✖ 2.5

4. ✔ 3.5

Question Number : 97 Question Id : 81959913732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which layer of the atmosphere contains the ozone layer that absorbs of UV light?

Options :

1. ✔ Stratosphere

2. ✖ Troposphere

3. ✖ Mesosphere

4. ✖ Ionosphere

Question Number : 98 Question Id : 81959913733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The contaminant among the following

Options :

1. ✖ SO_2

2. ✔ MIC

3. ✖ CO_2

4. ✖ CH_4

Question Number : 99 Question Id : 81959913734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Gases responsible for depletion of Ozone layer are

Options :

1. ✖ CO_2, CFC, CH_4

2. ✖ SO_2, NO_2, CH_4

3. ✔ CFC, NO, Cl_2

4. ✖ CO, SO_2, CH_4

Question Number : 100 Question Id : 81959913735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 harmful air pollutant produced by automobiles is

Options :

1. ✖ SO_2

2. ✖ NO

3. ✔ CO

4. ✖ Cl_2

Civil Engineering

Section Id :	819599269
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 :	819599311
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 81959913736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 grade of concrete used for R.C.C. as per IS:456 is

Options :

1. ✖ M_{15}

2. ✔ M_{20}

3. ✖ M_{25}

4. ✖ M_{30}

Question Number : 102 Question Id : 81959913737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The failure of an over-reinforced beam is due to

Options :

1. ✖ Yielding of steel in the tension zone.

2. ✔ Crushing of concrete in the compression zone.

3. ✖ May be due to concrete or steel.

4. ✖ Unpredictable.

Question Number : 103 Question Id : 81959913738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 longitudinal reinforcement in a R.C.C column should not be less than

Options :

1. ✔ 0.8% of gross area of the column.

2. ✖ 6.0% of gross area of the column.

3. ✖ 0.6% of gross area of the column.

4. ✖ 0.12% of gross area of the column.

Question Number : 104 Question Id : 81959913739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Distribution steel is provided in the case of slabs, to take care of

Options :

1. ✖ Tension

2. ✖ Compression

3. ✖ Bending

4. ✔ Temperature & shrinkage stresses.

Question Number : 105 Question Id : 81959913740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 diameter of reinforcing bar used in slabs shall not be more than

Options :

1. ✖ 10 mm

2. ✖ 12 mm

3. ✖ 1/4th of thickness of slab.

4. ✔ 1/8th of the thickness of slab.

Question Number : 106 Question Id : 81959913741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 contribution of bent up bars towards shear resistance shall not be more than

Options :

1. ✖ 25% of shear at the section.

2. ✔ 50% of shear at the section.

3. ✖ 75% of shear at the section

4. ✖ 100% of shear at the section.

Question Number : 107 Question Id : 81959913742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The critical section for one way shear in footing is considered at a distance of

Options :

1. ✔ 'd' from the face of column.

2. ✖ 'd/2' from the face of column.

3. ✖ 'd/2' around the periphery of the column.

4. ✖ 'd/4' around the periphery of the column.

Question Number : 108 Question Id : 81959913743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An electrical pole of length 'L' m is to be lifted safely like a double overhanging beam. Suggest the suitable position of hooks from the ends of pole for maximum bending moment to be least.

Options :

1. ✔ 0.207 L

2. ✖ 0.25 L

3. ✖ 0.15 L

4. ✖ 0.20 L

Question Number : 109 Question Id : 81959913744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 simply supported beam of span 'L ' m carries uniformly distributed load of 'w' N/m over the middle half of the length. What is the maximum bending moment at the center of the span?

Options :

1. ✖ $\frac{w L^2}{8}$

2. ✖ $\frac{w L^2}{16}$

3. ✔ $\frac{3\,w\,L^2}{32}$

4. ✖ $\frac{w\,L^2}{4}$

Question Number : 110 Question Id : 81959913745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 cantilever beam of span 'L ' m carries Uniformly Distributed Load (UDL) of 'w' N/m over half of the length from the free end. The maximum Bending Moment at the fixed end is

Options :

1. ✔ $\frac{-3\,w\,L^2}{8}$

2. ✖ $\frac{-w\,L^2}{8}$

3. ✖ $\frac{-w\,L^2}{4}$

4. ✖ $\frac{-w\,L^2}{16}$

Question Number : 111 Question Id : 81959913746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 resistance of a rectangular beam of breadth 200 mm and depth of 400 mm, if the bending stress is limited 12 N/mm^2 is

Options :

1. ✖ 12 KN-m

2. ✔ 64 KN-m

3. ✖ 32 KN-m

4. ✖ 24 KN-m

Question Number : 112 Question Id : 81959913747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 section of a hollow circular beam of external diameter '*D*' and internal diameter '*D/2*' is

Options :

1. ✖ $\frac{\pi D^3}{32}$

2. ✖ $\frac{15\pi D^3}{256}$

3. ✔ $\frac{15\pi D^3}{512}$

4. ✖ $\frac{\pi D^3}{64}$

Question Number : 113 Question Id : 81959913748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 maximum shear stress to mean shear stress in the case of a circular beam is

Options :

1. ✖ 1.50

2. ✖ 2.00

3. ✔ 1.33

4. ✖ 1.66

Question Number : 114 Question Id : 81959913749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The polar modulus of a solid circular shaft of diameter 'D' is

Options :

1. ✔ $\frac{\pi D^3}{16}$

2. ✖ $\frac{\pi D^3}{32}$

3. ✖ $\frac{\pi D^4}{32}$

4. ✖ $\frac{\pi D^4}{64}$

Question Number : 115 Question Id : 81959913750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Torque required to produce an angle of twist of one radian in unit length is known as

Options :

1. ✖ Modulus of Rigidity

2. ✔ Torsional Rigidity

3. ✖ Torsional Stiffness

4. ✖ Flexural Rigidity

Question Number : 116 Question Id : 81959913751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 shafts, one is solid circular and the other hollow circular has their external diameters same. The internal diameter of the hollow circular shaft is half of the external diameter. The ratio of strength of solid shaft to hollow shaft is

Options :

1. ✖ 8/7

2. ✖ 15/16

3. ✖ 1

4. ✔ 16/15

Question Number : 117 Question Id : 81959913752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The radius of gyration of a hollow circular column of internal diameter half of the external diameter is

Options :

1. ✖ $\frac{\sqrt{5}\,D}{16}$

2. ✔ $\frac{\sqrt{5}\,D}{8}$

3. ✖ $\frac{5\,D}{8}$

4. ✖ $\frac{D}{4}$

Question Number : 118 Question Id : 81959913753 Question Type : MCQ Option Shuffling : Yes Display Question

Number : Yes Is 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 column which give the same value of Euler's load and Rankine's load is (Where E is young's modulus, K is least radius of gyration, f_c permissible compressive stress and α is rankine's coefficient)

Options :

1. ✔ $\sqrt{\frac{\pi^2 E k^2}{f_c - \pi^2 E \alpha}}$

2. ✖ $\sqrt{\frac{\pi^2 E k^2}{f_c + \pi^2 E \alpha}}$

3. ✖ $\sqrt{\frac{\pi^2 k^2}{f_c - \pi^2 E}}$

4. ✖ $\sqrt{\frac{\pi^2 E k^2}{f_c E \alpha}}$

Question Number : 119 Question Id : 81959913754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Compare the ratio of strength of a solid steel column and that of hollow of same length and pinned ends of the same cross sectional area. The internal diameter of hollow column is ¾ of external diameter.

Options :

1. ✖ 16/15

2. ✖ 15/16

3. ✖ 5/3

4. ✔ 25/7

Question Number : 120 Question Id : 81959913755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 cantilever beam of span 4m is subjected to a maximum deflection of 64 mm at the free end due to a concentrated load at the free end. Find the maximum slope?

Options :

1. ✖ 0.048 radians

2. ✔ 0.024 radians

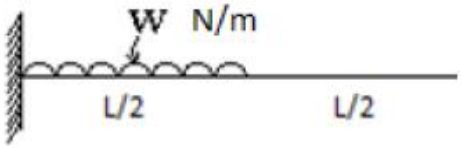
3. ✖ 0.012 radians

4. ✖ 0.240 radians

Question Number : 121 Question Id : 81959913756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 cantilever beam of span 'L' m carries uniformly distributed load of 'w' N/m up to half span from the fixed end. Find the maximum deflection at the free end.



Options :

1. ✖ $\frac{w L^4}{48 E I}$

2. ✖ $\frac{w L^4}{384 E I}$

3. ✔ $\frac{7 w L^4}{384 E I}$

4. ✖ $\frac{7\,w\,L^4}{48\,E\,I}$

Question Number : 122 Question Id : 81959913757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 a beam deflects into a circular arc because of pure bending the slope at the ends is given by

Options :

1. ✔ $\frac{L}{2R}$

2. ✖ $\frac{L}{8R}$

3. ✖ $\frac{L^2}{2R}$

4. ✖ $\frac{L^2}{8R}$

Question Number : 123 Question Id : 81959913758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The total depth of water required by a crop during the entire period the crop is in the field, is known as

Options :

1. ✖ Crop Period

2. ✖ Duty

3. ✖ Base Period

4. ✔ Delta

Question Number : 124 Question Id : 81959913759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 wheat requires 7.5 cm of water after every 28 days of interval for a base period of 140 days. What is Delta for wheat?

Options :

1. ✖ 375 cm

2. ✔ 37.50 cm

3. ✖ 56 cm

4. ✖ 750 cm

Question Number : 125 Question Id : 81959913760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 sprinkler irrigation system is suitable when

Options :

1. ✔ The land gradient is steep and the soil is easily erodible.

2. ✖ The soil is having low permeability.

3. ✖ The water table is low.

4. ✖ The crops to be grown have deep roots.

Question Number : 126 Question Id : 81959913761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The rise in water level on the upstream side due to the construction of a diversion structure across of river is called as

Options :

1. ✖ Degradation

2. ✔ Afflux

3. ✖ Free board

4. ✖ Uplift

Question Number : 127 Question Id : 81959913762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Ryve's formula for maximum flood discharge is

Options :

1. ✖ $CA^{3/4}$

2. ✖ $CA^{4/3}$

3. ✔ $CA^{2/3}$

4. ✖ $CA^{3/2}$

Question Number : 128 Question Id : 81959913763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An isohyet is a line joining points having

Options :

1. ✖ Equal snowfall

2. ✖ Equal evaporation rate

3. ✖ Equal height above sea level

4. ✔ Equal rainfall depth in given location.

Question Number : 129 Question Id : 81959913764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The term piping, used in connection with weirs on alluvial rivers, means

Options :

1. ✖ The system of pipes provided for drainage of the seepage flow.

2. ✔ The progressive undermining of the foundation due to dislodging of the soil particles by the seepage water at its point at emergence.

3. ✖ Vertical pressure exerted by the seepage at various points on the impervious floor.

4. ✖ The progressive consolidation of the foundation due to water pressure.

Question Number : 130 Question Id : 81959913765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Line of seepage is also called as

Options :

1. ✖ porous line

2. ✔ phreatic line

3. ✖ shear line

4. ✖ total energy line

Question Number : 131 Question Id : 81959913766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The elementary profile of a gravity dam is 20 m height and built of material of specific gravity 2.25 and resists only hydrostatic force. To avoid tension, the minimum base width should be

Options :

1. ✖ 10 m

2. ✖ 8.89 m

3. ✖ 17.89 m

4. ✔ 13.33 m

Question Number : 132 Question Id : 81959913767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The line which joins the points in a dam section at which pressure is equal to atmospheric pressure

Options :

1. ✖ Saturation line

2. ✔ Phreatic line

3. ✖ Isobar

4. ✖ Hydraulic Gradient

Question Number : 133 Question Id : 81959913768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 canal which can irrigate only on one side of the canal

Options :

1. ✔ Contour canal

2. ✖ Water shed canal

3. ✖ Side slope canal

4. ✖ Inundation canal

Question Number : 134 Question Id : 81959913769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Lacey's silt theory, perimeter (P) of the channel is determined by

Options :

1. ✔ $P = 4.75\sqrt{Q}$

2. ✖ $P = 1.5\sqrt{Q}$

3. ✖ $P = 4.75\ Q^{1/6}$

4. ✖ $P = 140\ Q^{1/6}$

Question Number : 135 Question Id : 81959913770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 groyne pointing upstream in a river is known as

Options :

1. ✖ Attracting groyne

2. ✔ Repelling groyne

3. ✖ Ordinary groyne

4. ✖ Denehy's groyne

Question Number : 136 Question Id : 81959913771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Principle of Transmissibility of Forces states that, when a force acts upon a body, its effect is

Options :

1. ✖ Maximum if it acts at the center of gravity of the body

2. ✖ Different at different points on its line of action

3. ✔ same at every point on its line of action

4. ✖ Minimum if it acts at the C.G of the body

Question Number : 137 Question Id : 81959913772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Lami's theorem states that

Options :

1. ✖ three forces acting at a point are always in equilibrium.

2. ✖ if three forces acting on a point can be represented in magnitude and direction by the sides of a triangle, the point will be in the state of equilibrium.

3. ✔ three coplanar forces action at a point will be in equilibrium, if each force is proportional to the sine of the angle between the other two.

4. ✖ three coplanar forces acting at a point will be in equilibrium if each force is inversely proportional to the sine of the angle between the other two.

Question Number : 138 Question Id : 81959913773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 meet at one point and have their lines of action in different planes are

Options :

1. ✖ coplanar non-current forces

2. ✔ non-coplanar concurrent forces

3. ✖ non-coplanar non-current forces

4. ✖ intersecting forces

Question Number : 139 Question Id : 81959913774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The centroid ($\bar{x}$) of a trapezium of top width 'a', base width 'b' and height 'h' with left face vertical

Options :

1. ✔ $\frac{a^2+ab+b^2}{3(a+b)}$

2. ✖ $\frac{a^2+2ab+b^2}{3(a+b)}$

3. ✖ $\left[\frac{2a+b}{a+b}\right]\frac{h}{3}$

4. ✖ $\left[\frac{a+2b}{a+b}\right]\frac{h}{3}$

Question Number : 140 Question Id : 81959913775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The centroid of a T-Section of flange size 20cm x 4cm and web size 4cm x 20cm above the base ($\bar{y}$) is

Options :

1. ✖ 12cm from the base

2. ✖ 10cm from the base

3. ✔ 16cm from the base

4. ✖ 8cm from the base

Question Number : 141 Question Id : 81959913776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 triangular section of base width 'b' and height 'h' about the plane passing through the base is

Options :

1. ✖ $\frac{b\,h^3}{48}$

2. ✖ $\frac{b\,h^3}{24}$

3. ✖ $\frac{b\,h^3}{36}$

4. ✔ $\frac{b\,h^3}{12}$

Question Number : 142 Question Id : 81959913777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The least radius of gyration of a square section of size 'a' x 'a' unit is

Options :

1. ✖ $\frac{2a}{\sqrt{3}}$

2. ✔ $\frac{a}{2\sqrt{3}}$

3. ✖ $\frac{a}{3\sqrt{2}}$

4. ✖ $\frac{a}{\sqrt{2}}$

Question Number : 143 Question Id : 81959913778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The relation between modulus of elasticity (E), modulus of rigidity (C) and bulk modulus (K) is

Options :

1. ✖ $E = \frac{3KC}{9K+C}$

2. ✖ $E = \frac{KC}{3K+C}$

3. ✔ $E = \frac{9KC}{3K+C}$

4. ✖ $E = \frac{9KC}{3C+K}$

Question Number : 144 Question Id : 81959913779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 said to be

Options :

1. ✖ homogeneous

2. ✔ isotropic

3. ✖ elastic

4. ✖ orthotropic

Question Number : 145 Question Id : 81959913780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Permanent set is

Options :

1. ✖ the force which acts permanently on the body

2. ✔ irrecoverable deformation in the body

3. ✖ the shape of the member just after completion of construction

4. ✖ ratio of Poisson's ratio to young's modulus

Question Number : 146 Question Id : 81959913781 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The property of the material by virtue of which the material withstands varying, repeated and reverse loads is called

Options :

1. ✖ Creep

2. ✖ Endurance

3. ✖ Tenacity

4. ✔ Fatigue

Question Number : 147 Question Id : 81959913782 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Priming of the pump is done by

Options :

1. ✔ Driving the air out from the suction pipe, pump and a part of delivery pipe up to delivery valve by pouring water

2. ✖ Filling the suction pipe only

3. ✖ Lubricating the pump, using water as a lubricant

4. ✖ Lubricating the driving mechanism with lubricant oil

Question Number : 148 Question Id : 81959913783 Question Type : MCQ Option Shuffling : Yes Display Question

Number : Yes 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 circular body of diameter 'D' is immersed vertically such that the top coincides with the free liquid surface. Calculate the position of center of pressure ($\bar{h}$)

Options :

1. ✖ $\frac{5D}{4}$

2. ✔ $\frac{5D}{8}$

3. ✖ $\frac{D}{2}$

4. ✖ $\frac{D}{8}$

Question Number : 149 Question Id : 81959913784 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Reynolds number (Re) is given by _____. (Where, ρ = density constant, V = velocity of fluid, D = diameter of pipe and μ = viscosity of fluid)

Options :

1. ✖ $Re = \frac{\rho V \mu}{D}$

2. ✖ $Re = \frac{VD}{\rho \mu}$

3. ✔ $Re = \frac{\rho V D}{\mu}$

4. ✖ $Re = \frac{\mu V D}{\rho}$

Question Number : 150 Question Id : 81959913785 Question Type : MCQ Option Shuffling : Yes Display Question

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

Correct Marks : 1 Wrong Marks : 0

The formula for discharge through a venturi meter of inlet area 'a_1' and throat area 'a_2'. If the pressure head difference between inlet and throat is 'h' m of flowing liquid.

Options :

1. ✔ $Q = \frac{K\, a_1 a_2 \sqrt{2gh}}{\sqrt{a_1^2 - a_2^2}}$

2. ✖ $Q = \frac{K\, a_1 a_2 \sqrt{a_1^2 - a_2^2}}{\sqrt{2gh}}$

3. ✖ $Q = \frac{K\, a_1 a_2 \sqrt{2gh}}{\sqrt{a_2^2 - a_1^2}}$

4. ✖ $Q = \frac{K\, a_1 a_2 \sqrt{2gh}}{\sqrt{a_1^2 + a_2^2}}$

Question Number : 151 Question Id : 81959913786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The relation between the actual discharge and theoretical discharge in a small orifice is

Options :

1. ✔ $C_c * C_v$

2. ✖ $\frac{C_c}{C_v}$

3. ✖ $\frac{C_v}{C_c}$

4. ✖ $\frac{C_d}{C_c}$

Question Number : 152 Question Id : 81959913787 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The diameter ratio in a convergent and divergent mouthpiece to avoid separation at vena contracta with usual notation is (d_o is diameter at the inlet, d_c is diameter at vena contacta, H_a is atmospheric pressure head, H_c is pressure head at vena contacta and H is head above the center of mouth piece)

Options :

1. ✖ $\sqrt{1+\frac{H_a+H_c}{H}}$

2. ✖ $\sqrt{1-\frac{H}{H_a-H_c}}$

3. ✔ $\sqrt{1+\frac{H_a-H_c}{H}}$

4. ✖ $\sqrt{1+\frac{H}{H_a-H_c}}$

Question Number : 153 Question Id : 81959913788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 rectangular notch is 1 cm wide and the head causing flow is 8 cm. If the width is increased to 8 cm, to have the same discharge the head should be decreased to

Options :

1. ✖ 1 cm

2. ✔ 2 cm

3. ✖ 6 cm

4. ✖ 8 cm

Question Number : 154 Question Id : 81959913789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 V-notch of angle 'θ', head 'H' and coefficient of discharge 'C_d' is

Options :

1. ✖ $\frac{8}{15} C_d \sqrt{2g} \tan(\theta/4) H^{5/2}$

2. ✖ $\frac{8}{15} C_d \sqrt{2g} \tan(\theta/2) H^{3/2}$

3. ✔ $\frac{8}{15} C_d \sqrt{2g} \tan(\theta/2) H^{5/2}$

4. ✖ $\frac{8}{15} C_d \sqrt{2g} \tan(\theta) H^{3/2}$

Question Number : 155 Question Id : 81959913790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 Cipolletti weir has side slope of

Options :

1. ✖ 1 Vertical to 4 Horizontal

2. ✖ 1 Vertical to 3 Horizontal

3. ✖ 3 Vertical to 1 Horizontal

4 Vertical to 1 Horizontal

4. ✔

Question Number : 156 Question Id : 81959913791 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 ' is the length of a pipe, ' f ' is the coefficient of friction, ' v ' is the velocity, ' d ' is the diameter, 'g' is the acceleration due to gravity, then the loss of pressure head due to friction is

Options :

1. ✖ $\frac{4 f l v^2}{\sqrt{2gd}}$

2. ✖ $\frac{f l v^2}{\sqrt{2gd}}$

3. ✔ $\frac{4 f l v^2}{2gd}$

4. ✖ $\frac{4 f l}{v^2 gd}$

Question Number : 157 Question Id : 81959913792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 rectangular channel of best section discharges 50 m^3/s of water with a velocity of 1 m/s. Then the depth of flow is

Options :

1. ✖ $\sqrt{50}$ m

2. ✔ 5 m

3. ✖ 2.5 m

4. ✖ $\sqrt{5}$ m

Question Number : 158 Question Id : 81959913793 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The best form of trapezoidal section satisfies the condition that

Options :

1. ✖ base wide is double the depth

2. ✖ top width is double the depth

3. ✖ sloping side is half the bottom width

4. ✔ sloping side is half the top width

Question Number : 159 Question Id : 81959913794 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 high specific speed turbine is generally recommended in a project

Options :

1. ✖ where head and output are low

2. ✔ where head is low and output is large

3. ✖ where head and output are large

4. ✖ where head and output are fluctuating

Question Number : 160 Question Id : 81959913795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The central part of tree is called

Options :

1. ✖ Heart wood

2. ✔ Pith

3. ✖ Sap wood

4. ✖ Cambium layer

Question Number : 161 Question Id : 81959913796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The nominal size of modular brick is

Options :

1. ✖ 19 cm x 9 cm x 8 cm

2. ✖ 19 cm x 19 cm x 9 cm

3. ✖ 20 cm x 20 cm x 10 cm

4. ✔ 20 cm x 10 cm x 10 cm

Question Number : 162 Question Id : 81959913797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The following compound is responsible for the early strength of cement

Options :

1. ✖ Tricalcium aluminate

2. ✖ Dicalcium aluminate

3. ✖ Gypsum

4. ✔ Tricalcium silicate

Question Number : 163 Question Id : 81959913798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The soundness of cement is tested by

Options :

1. ✖ Air permeability test

2. ✔ Le-Chatelier method

3. ✖ Vicats apparatus

4. ✖ Vee bee test

Question Number : 164 Question Id : 81959913799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The compacting factor test of cement concrete is conducted to find

Options :

1. ✖ Strength

2. ✖ Porosity

3. ✖ Degree of compaction under loads

Workability of concrete

4. ✔

Question Number : 165 Question Id : 81959913800 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Putty is made up of

Options :

1. ✖ White lead and turpentine

2. ✔ Powdered chalk and raw linseed oil

3. ✖ Red lead and linseed oil

4. ✖ Zinc oxide and boiled linseed oil.

Question Number : 166 Question Id : 81959913801 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

With usual notations, the formula to calculate the minimum depth of foundation. (Where, '$\emptyset$' is the angle of repose, 'p' is bearing capacity of the soil in kN/m^2 and 'w' is unit weight of the soil kN/m^3

Options :

1. ✔ $h = \frac{p}{w}\left[\frac{1-\sin\emptyset}{1+\sin\emptyset}\right]^2$

2. ✖ $h = \frac{p}{w}\left[\frac{1+\sin\emptyset}{1-\sin\emptyset}\right]^2$

3. ✖ $h = \frac{p}{w}\left[\frac{1-(\sin\emptyset)^2}{1+(\sin\emptyset)^2}\right]$

$$h = \frac{p}{w}\left[\frac{1+(\sin\emptyset)^2}{1-(\sin\emptyset)^2}\right]$$

4. ✖

Question Number : 167 Question Id : 81959913802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The bonding having header and stretches laid alternatively in the same course is called

Options :

1. ✖ English bond

2. ✔ Flemish bond

3. ✖ Header bond

4. ✖ Stretcher bond

Question Number : 168 Question Id : 81959913803 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 our country, as per IS 1172 – 1963, water consumption per capita per day (LPCD) for domestic purpose is

Options :

1. ✔ 135 Litres per capita per day

2. ✖ 115 Litres per capita per day

3. ✖ 100 Litres per capita per day

4. ✖ 95 Litres per capita per day

Question Number : 169 Question Id : 81959913804 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The sewer appurtenance meant for releasing water into sewer for the purpose of removal of deposited matter is called

Options :

1. ✖ Catch basin

2. ✖ Inlet

3. ✔ Flushing tank

4. ✖ Inverted syphon

Question Number : 170 Question Id : 81959913805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 tunnels constructed at shallow depths along the banks of a river to intercept the ground water table are called

Options :

1. ✖ Canals

2. ✔ Infiltration galleries

3. ✖ Springs

4. ✖ Lakes

Question Number : 171 Question Id : 81959913806 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The water of a river has an important property known as

Options :

1. ✖ Turbidity

2. ✖ Permeability

3. ✔ Self purification

4. ✖ Infiltration capacity

Question Number : 172 Question Id : 81959913807 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Bio-chemical Oxygen Demand (BOD) of safe drinking water must be

Options :

1. ✖ 15 ppm

2. ✖ 10 ppm

3. ✖ 5 ppm

4. ✔ Zero

Question Number : 173 Question Id : 81959913808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The percentage of bacterial content removed by a rapid sand filter is

Options :

1. ✖ 60 to 70

2. ✖ 70 to 80

3. ✔ 80 to 90

4. ✖ 90 to 99

Question Number : 174 Question Id : 81959913809 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 an area developed in a haphazard way, the type of layout recommended for distribution of filtered water will be

Options :

1. ✖ A dead-end system

2. ✖ A ring system

3. ✔ A radial system

4. ✖ A grid iron system

Question Number : 175 Question Id : 81959913810 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 velocity in a sewer which avoids silting is known as

Options :

1. ✔ Self cleansing velocity

2. ✖ Peak velocity

3. ✖ Non scouring velocity

4. ✖ Scouring velocity

Question Number : 176 Question Id : 81959913811 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The type of bacteria responsible for biological oxidation of dissolved solids in trickling filter are

Options :

1. ✖ Pathogenic bacteria

2. ✖ Facultative bacteria

3. ✖ Anaerobic bacteria

4. ✔ Aerobic bacteria

Question Number : 177 Question Id : 81959913812 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 two sewers meet at different levels the appurtenances used is

Options :

1. ✖ Inverted system

2. ✖ Catch basin

3. ✖ Inlet

4. ✔ Drop man hole

Question Number : 178 Question Id : 81959913813 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

On the recommendations of Indian Road Congress, the ruling gradient in plains is

Options :

1. ✖ 1 in 15

2. ✖ 1 in 20

3. ✔ 1 in 30

4. ✖ 1 in 45

Question Number : 179 Question Id : 81959913814 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

With usual abbreviations, what is the superelevation of highway? (Assume coefficient of friction to be zero, 'V' is the speed of vehicle in Kmph and R is the curve radius in metre)

Options :

1. ✔ $V^2 / 127R$

2. ✖ $V^2 / 127gR$

3. ✖ $V^2 / 9.81\ R$

4. ✖ $V^2 / 127$

Question Number : 180 Question Id : 81959913815 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The type of transition curves generally provided on hill roads is

Options :

1. ✖ Circular

2. ✖ Cubic parabola

3. ✖ Lemniscate

4. ✔ Spiral

Question Number : 181 Question Id : 81959913816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Speed regulation on roads is decided on the basis of

Options :

1. ✖ 60 percentile cumulative frequency

2. ✔ 85 percentile cumulative frequency

3. ✖ 80 percentile cumulative frequency

4. ✖ 65 percentile cumulative frequency

Question Number : 182 Question Id : 81959913817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 interchange is used when two high volume and high-speed road facilities intersect each other?

Options :

1. ✔ Cloverleaf interchange

2. ✖ Diamond interchange

3. ✖ T interchange

4. ✖ Half cloverleaf interchanges

Question Number : 183 Question Id : 81959913818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The signs which give information to the driver about the impending road conditions are

Options :

1. ✖ Informative signs

2. ✔ Warning signs

3. ✖ Regulatory signs

4. ✖ Mandatory signs

Question Number : 184 Question Id : 81959913819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 gauge distance in broad gauge railway track is

Options :

1. ✖ 1.767 m

2. ✖ 1.000 m

3. ✔ 1.676 m

4. ✖ 0.762 m

Question Number : 185 Question Id : 81959913820 Question Type : MCQ Option Shuffling : Yes Display Question

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

Correct Marks : 1 Wrong Marks : 0

Staggered rail joints are generally provided

Options :

1. ✔ on curves

2. ✖ on tangents

3. ✖ on bridges

4. ✖ in tunnels

Question Number : 186 Question Id : 81959913821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrangement made to divert the trains from one track to another is known as

Options :

1. ✖ Railway point

2. ✔ Turnout

3. ✖ Railway Crossing

4. ✖ Railway Junction

Question Number : 187 Question Id : 81959913822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The rails get out of their original positions due to insufficient expansion gap. This phenomenon is known as

Options :

1. ✖ hogging

2. ✔ buckling

3. ✖ creeping

4. ✖ fatigue

Question Number : 188 Question Id : 81959913823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Bottom most component of a flexible pavement is

Options :

1. ✔ Subgrade

2. ✖ Subbase

3. ✖ Base

4. ✖ Wearing Coat

Question Number : 189 Question Id : 81959913824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The main principle of survey is to

Options :

1. ✖ Work from part to whole

2. ✔ Work from whole to part

3. ✖ Work from center of the area

4. ✖ Fixing positions of new location by precise instruments

Question Number : 190 Question Id : 81959913825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The type of surveying wherein curvature of earth is also accounted for is known as

Options :

1. ✖ Plain surveying

2. ✖ Hydrographic surveying

3. ✔ Geodetic surveying

4. ✖ Aerial surveying

Question Number : 191 Question Id : 81959913826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Isogenic lines passes through points of

Options :

1. ✖ Zero declination

2. ✔ Equal declination

3. ✖ Qual dip

4. ✖ Zero dip

Question Number : 192 Question Id : 81959913827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The whole circle bearing of a line is 327° 20'. The quadrantal bearing of the line is

Options :

1. ✔ N 32° 40' W

2. ✖ N 32° 40' E

3. ✖ S 32° 40' W

4. ✖ S 32° 40' E

Question Number : 193 Question Id : 81959913828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The angle of intersection of a contour and a ridge line is

Options :

1. ✖ 30°

2. ✖ 60°

3. ✖ 45°

4. ✔ 90°

Question Number : 194 Question Id : 81959913829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The size of theodolite is defined according to the

Options :

1. ✖ length of telescope

2. ✔ diameter of graduated horizontal circle

3. ✖ height of standard

4. ✖ vernier plane diameter

Question Number : 195 Question Id : 81959913830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The backsight on a Bench Mark of 102.50 is 2.250 m. The inverted staff reading at the bottom of the roof is 1.515 m. The Reduced Level at bottom of roof is

Options :

1. ✖ 103.235 m

2. ✖ 101.765 m

3. ✔ 106.265 m

4. ✖ 98.735 m

Question Number : 196 Question Id : 81959913831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The stadia method of Tacheometry is used to determine

Options :

1. ✖ Vertical angles

2. ✖ Horizontal angles

3. ✖ Horizontal distances

4. ✔ Horizontal and vertical distances

Question Number : 197 Question Id : 81959913832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The method of tacheometry commonly used is

Options :

1. ✖ Subtense bar method

2. ✖ Movable stadia system

3. ✔ Fixed stadia system

4. ✖ Tangential system

Question Number : 198 Question Id : 81959913833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is 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 revolving the telescope about its vertical axis in the horizontal plane is

Options :

1. ✖ Transiting

2. ✔ Swinging

3. ✖ Transmitting

4. ✖ Face left

Question Number : 199 Question Id : 81959913834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The apex distance of a circular curve of radius 'R' and deflection angle '$\emptyset$' is given by

Options :

1. $R\ \left(\sec\frac{\emptyset}{2}-1\right)$ ✔

2. $R\ \left(\tan\frac{\emptyset}{2}\right)$ ✖

3. $2R\ \left(\tan\frac{\emptyset}{2}\right)$ ✖

4. $R\ \left(\text{cosec}\frac{\emptyset}{2}-1\right)$ ✖

Question Number : 200 Question Id : 81959913835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Total Station is the combination of

Options :

1. Compass and theodolite ✖

2. Electronic theodolite and E.D.M ✔

3. Levelling and E.D.M ✖

4. E.D.M only ✖