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 11th May 2019 Shift1
Subject Name:	Civil Engineering
Creation Date:	2019-05-11 13:35:19
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Display Marks:	No
Share Answer Key With Delivery Engine:	Yes
Actual Answer Key:	Yes
Calculator:	None
Magnifying Glass Required?:	No
Ruler Required?:	No
Eraser Required?:	No
Scratch Pad Required?:	No
Rough Sketch/Notepad Required?:	No
Protractor Required?:	No
Show Watermark on Console?:	Yes
Highlighter:	No
Auto Save on Console?:	No

Civil Engineering

Group Number :	1
Group Id :	89465819
Group Maximum Duration :	0
Group Minimum Duration :	180
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	200

Mathematics

Section Id :	89465871
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	50
Number of Questions to be attempted:	50
Section Marks:	50
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	89465881
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 8946583609 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $M=(a_{ij})$ be a 10×10 matrix such that $a_{ij}=\begin{cases}1, & \text{if } i+j=11\\ 0, & \text{otherwise}\end{cases}$. Then, the determinant of M is _____.

Options :

1. ✖ 0

2. ✖ 1

3. ✔ -1

4. ✖ 11

Question Number : 2 Question Id : 8946583610 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let A and B be two square matrices of order n. If $AB=A$, $BA=B$ then $A^2+B^2=$ ___.

Options :

1. ✖ AB

2. ✖ $A-B$

3. ✖ 0

4. ✔ $A+B$

Question Number : 3 Question Id : 8946583611 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the system of linear equations $x+y+z=3, x-y-z=4, x-5y+\alpha z=6$. Then, the value of α for which this system has an infinite number of solutions is _____.

Options :

1. ✔ -5

2. ✖ 5

3. ✖ 3

4. ✖ 1

Question Number : 4 Question Id : 8946583612 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $A(\alpha,\beta)=\begin{pmatrix}\cos\alpha & \sin\alpha & 0\\ -\sin\alpha & \cos\alpha & 0\\ 0 & 0 & e^{\beta}\end{pmatrix}$, then the inverse of the matrix $A(\alpha,\beta)$ is _____.

Options :

1. ✖ $A(\alpha,\beta)$

2. ✖ $A(\alpha,-\beta)$

3. ✔ $A(-\alpha,-\beta)$

4. ✖ $A(-\alpha,\beta)$

Question Number : 5 Question Id : 8946583613 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The rational fraction $\frac{x^2+1}{(x^2+4)(x-2)}$ is equal to _____

Options :

1. ✖ $\frac{3x+6}{8(x^2+4)}+\frac{5}{4(x-2)}$

2. ✖ $\frac{3x+6}{4(x^2+4)}+\frac{5}{8(x-2)}$

3. ✔ $\frac{3x+6}{8(x^2+4)}+\frac{5}{8(x-2)}$

4. ✖ $\frac{3x+6}{(x^2+4)}+\frac{5}{(x-2)}$

Question Number : 6 Question Id : 8946583614 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\log_2 3 = a, \log_3 5 = b, \log_7 2 = c$, then $\log_{140} 63 =$ _____.

Options :

1. ✖ $\frac{1-2ac}{2c+abc+1}$

2. ✖ $\frac{1-2ac}{2c-abc-1}$

3. ✖ $\frac{1+2ac}{2c-abc-1}$

4. ✔ $\frac{1+2ac}{2c+abc+1}$

Question Number : 7 Question Id : 8946583615 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\cos\frac{2\pi}{7}+\cos\frac{4\pi}{7}+\cos\frac{6\pi}{7} =$ ____.

Options :

1. ✖ 1

2. ✖ $\frac{1}{2}$

3. ✔ $\frac{-1}{2}$

4. ✖ 0

Question Number : 8 Question Id : 8946583616 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the angles A, B and C of a triangle are in an arithmetic progression and if a, b and c denote the lengths of the sides opposite to A, B and C respectively, then the value of the expression $\frac{a}{c}\sin 2C + \frac{c}{a}\sin 2A$ is ___.

Options :

1. ✔ $\sqrt{3}$

2. ✖ $\frac{\sqrt{3}}{2}$

3. ✖ 1

4. ✖ $\frac{1}{2}$

Question Number : 9 Question Id : 8946583617 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\sin x + \sin y = \frac{1}{4}$ and $\cos x + \cos y = \frac{1}{3}$, then $\cot(x+y) =$ _____.

Options :

1. ✔ $\frac{7}{24}$

2. ✖ $\frac{24}{7}$

3. ✖ $\frac{3}{4}$

4. ✖ 1

Question Number : 10 Question Id : 8946583618 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\sin(x^\circ + 28^\circ) = \cos(3x^\circ - 78^\circ)$ and $0^\circ < x^\circ < 90^\circ$, then, which of the following is the value of x°?

Options :

1. ✖ 50°

2. ✖ 30°

3. ✖ 16°

4. ✔ 8°

Question Number : 11 Question Id : 8946583619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $x = \tan\left(\text{Cosec}^{-1}\frac{65}{63}\right)$ and $y = \sec^2\left(Cot^{-1}\frac{1}{2}\right) + \cos ec^2\left(Tan^{-1}\frac{1}{3}\right)$, then $(x, y) =$ _____.

Options :

1. ✔ $\left(\frac{63}{16}, 15\right)$

2. ✖ $\left(\frac{16}{63}, 15\right)$

3. ✖ $\left(\frac{63}{16}, 5\right)$

4. ✖ $\left(\frac{16}{63}, 5\right)$

Question Number : 12 Question Id : 8946583620 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The equation $\text{Tan}^{-1}\left(\frac{x+1}{x-1}\right)+T\,\text{an}^{-1}\left(\frac{x-1}{x}\right)=T\,\text{an}^{-1}(-7)$ has _____.

Options :

1. ✔ unique solution $x=2$

2. ✖ two solutions $x=1,2$

3. ✖ no solution

4. ✖ infinite number of solutions

Question Number : 13 Question Id : 8946583621 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a triangle ABC, let a,b and c denote the lengths of the sides opposite to A, B and C respectively. If $\frac{1}{a+c}+\frac{1}{b+c}=\frac{3}{a+b+c}$, then the angle C is ____.

Options :

1. ✖ 30°

2. ✖ 90°

3. ✔ 60°

4. ✖ 45°

Question Number : 14 Question Id : 8946583622 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\sin hx=3$ then $x=$ _____.

Options :

1. ✔ $\log(3+\sqrt{10})$

2. ✖ $\log(3-\sqrt{10})$

3. ✖ $\log(6+\sqrt{10})$

4. ✖ 1

Question Number : 15 Question Id : 8946583623 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT true for the complex numbers z_1 and z_2 ?

Options :

1. ✖ $\frac{z_1}{z_2}=\frac{z_1\bar{z}_2}{|z_2|^2}$

2. ✖ $|z_1+z_2|\le|z_1|+|z_2|$

3. ✔ $|z_1+z_2|\le\big||z_1|-|z_2|\big|$

4. ✖ $|z_1+z_2|^2+|z_1-z_2|^2=2|z_1|^2+2|z_2|^2$

Question Number : 16 Question Id : 8946583624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a complex number $z=\frac{\sqrt{3}}{2}+i\frac{1}{2}$, then z^4 is _____.

Options :

1. ✖ $2\sqrt{2}+2i$

2. ✔ $\frac{-1}{2}+i\frac{\sqrt{3}}{2}$

3. ✖ $\frac{\sqrt{3}}{2}-i\frac{1}{2}$

4. ✖ $\frac{\sqrt{3}}{8}-i\frac{1}{8}$

Question Number : 17 Question Id : 8946583625 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The equation of the straight line which makes intercepts r and s on the coordinate axes such that $r+s=5$ and $rs=6$ is $ax+by+c=0$, then $a+b+c=$ ____ .

Options :

1. ✖ 11

2. ✖ 5

3. ✖ -7

4. ✔ -1

Question Number : 18 Question Id : 8946583626 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a straight line $ax+by+\sqrt{5}=0$ touches the circle $x^2+y^2=5$, then which of the following is TRUE?

Options :

1. ✖ $5(a^2+b^2)=1$

2. ✖ $a^2+b^2=\sqrt{5}$

3. ✔ $a^2+b^2=1$

4. ✖ $\sqrt{a^2+b^2}=5$

Question Number : 19 Question Id : 8946583627 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a chord of length 12 cm is at a distance of $4\sqrt{10}$ cm from the centre of the circle, then the radius of the circle is _____.

Options :

1. ✔ 14 cm

2. ✖ $\sqrt{304}$ cm

3. ✖ 4 cm

4. ✖ $\sqrt{124}$ cm

Question Number : 20 Question Id : 8946583628 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The 2019^{th} derivative of the function $(x-1)e^{-x}$ is _____

Options :

1. ✖ $\frac{x-2019}{e^x}$

2. ✖ $\frac{2019-x}{e^x}$

3. ✖ $\frac{x-2020}{e^x}$

4. ✔ $\frac{2020-x}{e^x}$

Question Number : 21 Question Id : 8946583629 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $z = f(x+ct) + \varphi(x-ct)$, then $\frac{\partial^2 z}{\partial t^2} =$ _____.

Options :

1. ✔ $c^2 \frac{\partial^2 z}{\partial x^2}$

2. ✖ $-c^2\frac{\partial^2 z}{\partial x^2}$

3. ✖ $\frac{1}{c^2}\frac{\partial^2 z}{\partial x^2}$

4. ✖ $-\frac{1}{c^2}\frac{\partial^2 z}{\partial x^2}$

Question Number : 22 Question Id : 8946583630 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $x = r\cos\theta,\ y = r\sin\theta$ and $U = \frac{f(\theta)}{r}$ then $x\frac{\partial U}{\partial x} + y\frac{\partial U}{\partial y} =$ _____.

Options :

1. ✖ 0

2. ✖ U

3. ✔ $-U$

4. ✖ $2U$

Question Number : 23 Question Id : 8946583631 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $f(x+y) = f(x)f(y),\ \forall x, y$ and $f'(0) = 5,\ f(2019) = 15$. Then the value of $f'(2019)$ is _____.

Options :

1. ✖ 3

2. ✔ 75

3. ✖ $\frac{1}{3}$

4. ✖ $\frac{1}{75}$

Question Number : 24 Question Id : 8946583632 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The set of values of x for which the function $f(x)=2x^3-9x^2+12x+4$ is increasing is _____.

Options :

1. ✖ $1<x<2$

2. ✖ all $x\in\mathbb{R}$

3. ✔ $\mathbb{R}-[1, 2]$

4. ✖ $x\geq 2$

Question Number : 25 Question Id : 8946583633 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\lim\limits_{x\to\infty} x\left(\log\left(1+\frac{x}{2}\right)-\log\left(\frac{x}{2}\right)\right)=$ _____.

Options :

1. ✖ e^2

2. ✖ ∞

3. ✖ 1

4. ✔ 2

Question Number : 26 Question Id : 8946583634 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $f(x,y,z)=x^3+xz^2+y^3+xyz,\ x=e^t,\ y=\cos t,\ z=t^3$ then $\frac{df}{dt}$ at $t=0$ is _____.

Options :

1. ✖ 2

2. ✖ 4

3. ✖ e

4. ✔ 3

Question Number : 27 Question Id : 8946583635 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the value of $5050 \times \frac{\int_0^1 (1-(1-x)^{50})^{100} x^{49} dx}{\int_0^1 (1-x^{50})^{101} x^{49} dx}$?

Options :

1. ✔ 5100

2. ✖ 1

3. ✖ 5050

4. ✖ $\frac{1}{2}$

Question Number : 28 Question Id : 8946583636 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\int_0^1 \max\left\{x, \frac{1}{2} - x\right\} dx = \_\_\_\_\_.$

Options :

1. ✖ 0

2. ✖ $\frac{1}{2}$

3. ✔ $\frac{9}{16}$

4. ✖ $\frac{9}{8}$

Question Number : 29 Question Id : 8946583637 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\lim_{n\to\infty}\frac{1}{n^6}\sum_{k=1}^{n}k^5 =$ _____.

Options :

1. ✔ $\frac{1}{6}$

2. ✖ $\frac{1}{5}$

3. ✖ 1

4. ✖ 6

Question Number : 30 Question Id : 8946583638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$\int_{-1}^{1}\frac{x^{15}(1-x^2)^{12}}{(1+x^2)^8}dx =$ _____.

Options :

1. ✖ 0

2. ✔ $\frac{22}{7}-\pi$

3. ✖ $\frac{2}{105}$

4. ✖ $\frac{71}{15}-\frac{3\pi}{4}$

Question Number : 31 Question Id : 8946583639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The area of the region bounded by the curves $y = 2 - x^2$ and $y = -x$ is _____.

Options :

1. ✖ 1

2. ✖ $\frac{8}{19}$

3. ✖ $\frac{35}{4}$

4. ✔ $\frac{27}{6}$

Question Number : 32 Question Id : 8946583640 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The volume of the solid obtained by revolving the region bounded by the curves $y = x^3$, $y = 8$ and $x = 0$ about the y-axis is _____

Options :

1. ✖ $\frac{96}{5}$

2. ✔ $\frac{96\pi}{5}$

3. ✖ $\frac{32\pi}{5}$

4. ✖ $\frac{32}{5}$

Question Number : 33 Question Id : 8946583641 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of $\int_0^{\pi} \theta \sin^2\theta \cos^4\theta \, d\theta$ is _____.

Options :

1. ✔ $\frac{\pi^2}{32}$

2. ✖ $\frac{\pi}{32}$

3. ✖ $\frac{\pi^2}{16}$

4. ✖ $\frac{\pi}{16}$

Question Number : 34 Question Id : 8946583642 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The average value of the function $f(x) = 4 - x^2$ over the interval $[-1, 3]$ is _____.

Options :

1. ✖ 5

2. ✖ $\frac{20}{3}$

3. ✔ $\frac{5}{3}$

4. ✖ 1

Question Number : 35 Question Id : 8946583643 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The differential equation $x\frac{dy}{dx} = y + x^2,\ x > 0$ satisfying $y(0) = 0$ has _____.

Options :

1. ✔ infinitely many solutions

2. ✖ no solution

3. ✖ a unique solution

4. ✖ exactly two solutions

Question Number : 36 Question Id : 8946583644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The differential equation $(a\,xy^3 + y\cos x)dx + (x^2y^2 + b\sin x)dy = 0$ is an exact differential equation for _____.

Options :

1. ✖ $a = 1,\ b = \frac{3}{2}$

2. ✖ $a = \frac{3}{2},\ b = 1$

3. ✔ $a = \frac{2}{3},\ b = 1$

4. ✖ $a = 1,\ b = \frac{2}{3}$

Question Number : 37 Question Id : 8946583645 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $\sin x$ is a solution of the differential equation $\frac{d^4y}{dx^4} + 2\frac{d^3y}{dx^3} + 6\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + 5y = 0$, then the general solution is _____.

Options :

1. ✔ $y = c_1 \sin x + c_2 \cos x + e^{-x}(c_3 \sin 2x + c_4 \cos 2x)$

2. ✖ $y = c_1 \sin x + c_2 \cos x + c_3 \sin 2x + c_4 \cos 2x$

3. ✖ $y = c_1 \sin x + c_2 \cos x + c_3 e^{-3x} + c_4 e^{-2x}$

4. ✖ $y = c_1 \sin x + c_2 \cos x + c_3 e^{3x} + c_4 e^{2x}$

Question Number : 38 Question Id : 8946583646 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $D \equiv \frac{d}{dx}$, then $\frac{1}{D^2 - 4D + 13}(6e^{2x} \sin 3x)$ is _____.

Options :

1. ✔ $-xe^{2x} \cos 3x$

2. ✖ $xe^{2x} \cos 3x$

3. ✖ $-xe^{2x} \sin 3x$

4. ✖ $xe^{2x} \sin 3x$

Question Number : 39 Question Id : 8946583647 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The general solution of $\left(\frac{e^{-2\sqrt{x}}}{\sqrt{x}} - \frac{y}{\sqrt{x}}\right)\frac{dx}{dy} = 1$ is _____.

Options :

1. ✖ $y = e^{2\sqrt{x}}\ (2\sqrt{x} + c)$

2. ✖ $y = 2\sqrt{x}\ e^{2\sqrt{x}} + c$

3. ✖ $y = 2\sqrt{x}\ e^{-2\sqrt{x}} + c$

4. ✔ $y = e^{-2\sqrt{x}}\ (2\sqrt{x} + c)$

Question Number : 40 Question Id : 8946583648 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let y be the solution of the differential equation $\frac{dy}{dx} + y = x,\ x \in \mathbb{R}$ and $y(-1) = 0$.

Then, y(1) is equal to _____.

Options :

1. ✖ $\frac{2}{e}-\frac{2}{e^2}$

2. ✔ $2e^{-2}$

3. ✖ $2-\frac{2}{e}$

4. ✖ $2-2e$

Question Number : 41 Question Id : 8946583649 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the substitution $x=X+h,\ y=Y+k$ transforms the differential equation $(y-x+1)dy-(y+x+2)dx=0$ into a homogeneous equation, then the value of (h,k) is _____.

Options :

1. ✖ $\left(\frac{1}{2},\frac{3}{2}\right)$

2. ✔ $\left(\frac{-1}{2},\frac{-3}{2}\right)$

3. ✖ $\left(\frac{3}{2},\frac{1}{2}\right)$

4. ✖ $\left(\frac{-3}{2},\frac{-1}{2}\right)$

Question Number : 42 Question Id : 8946583650 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The general solution of $\frac{dy}{dx}-y=y^2(\sin x+\cos x)$ is _____.

Options :

1. ✖ $y=\frac{1}{ce^{x}-\sin x}$

2. ✖ $y=ce^{-x}-e^{x}\sin x$

3. ✖ $y=ce^{-x}-\sin x$

4. ✔ $y=\frac{1}{ce^{-x}-\sin x}$

Question Number : 43 Question Id : 8946583651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of the function $f(t)=\begin{cases}\sin t, & \text{for } 0\le t\le \pi\\ 0, & \text{for } t>\pi\end{cases}$

is _____.

Options :

1. ✖ $\frac{1}{(1+s^{2})}$ for all $s>0$

2. ✖ $\frac{1}{(1+s^{2})}$ for all $s<\pi$

3. ✔ $\frac{(1+e^{-\pi s})}{(1+s^{2})}$ for all $s>0$

4. ✖ $\frac{e^{-\pi s}}{(1+s^{2})}$ for all $s>0$

Question Number : 44 Question Id : 8946583652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The inverse Laplace transform of $\frac{5}{s}-\frac{3e^{-3s}}{s}-\frac{2e^{-7s}}{s}$ is _____.

Options :

1. ✖ $$f(x)=\begin{cases}5, & 0<x<3\\ 0, & 3<x<7\\ 2, & x>7\end{cases}$$

2. ✖ $$f(x)=\begin{cases}5, & 0<x<7\\ 2, & x>7\end{cases}$$

3. ✔ $$f(x)=\begin{cases}5, & 0<x<3\\ 2, & 3<x<7\\ 0, & x>7\end{cases}$$

4. ✖ $$f(x)=\begin{cases}5, & 0<x<7\\ 0, & x>7\end{cases}$$

Question Number : 45 Question Id : 8946583653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of a function $f(x)$ is $F(s)=\dfrac{1}{s^3+2s^2+2s}$ Then, $\lim\limits_{x\to 0} f(x)=$

_____.

Options :

1. ✔ 0

2. ✖ 3

3. ✖ ∞

4. ✖ $\dfrac{1}{2}$

Question Number : 46 Question Id : 8946583654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of the solution of the differential equation $\frac{dy}{dx} - 2y = e^{5x}$ with the initial condition $y(0) = 3$ is _____.

Options :

1. ✖ $\frac{1}{3(s-2)} + \frac{1}{3(s-5)}$

2. ✖ $\frac{8}{3(s-2)} + \frac{1}{s-5}$

3. ✔ $\frac{8}{3(s-2)} + \frac{1}{3(s-5)}$

4. ✖ $\frac{8}{s-2} + \frac{1}{3(s-5)}$

Question Number : 47 Question Id : 8946583655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $L(y(x)) = Y(s)$ and $y(x) = x^3 + \int_0^x \sin(x-t)\, y(t)dt$ then $\frac{1}{6}Y(s) =$ _____.

Options :

1. ✔ $\left(\frac{1}{s^4} + \frac{1}{s^6}\right)$

2. ✖ $\left(\frac{1}{s^3} + \frac{1}{s^5}\right)$

3. ✖ $\left(\frac{1}{s^3} + \frac{1}{s^7}\right)$

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

Question Number : 48 Question Id : 8946583656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For $x > 0$, $\int_0^\infty \frac{\sin xt}{t} dt$ is _____.

Options :

1. ✖ 0

2. ✖ $\frac{\pi}{2x}$

3. ✖ $\frac{1}{x}$

4. ✔ $\frac{\pi}{2}$

Question Number : 49 Question Id : 8946583657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $f(x) = \frac{1}{2}a_0 + \sum_{n=1}^{\infty}(a_n \cos nx + b_n \sin nx)$ is the Fourier series of the function

$f(x) = \begin{cases} 0, & -\pi \le x < 0 \\ \pi, & 0 \le x \le \pi \end{cases}$ then, which of the following is TURE?

Options :

1. ✖ $a_n = 0$, for all $n \ge 0$

2. ✖ $a_0 = \frac{\pi}{2}$ and $a_n = 0$, for all $n \ge 1$

3. ✖ $b_n \ne 0$, for all $n \ge 1$

4. ✔ $a_0 = \pi$ and $a_n = 0$, for all $n \ge 1$

Question Number : 50 Question Id : 8946583658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A function $f(x)$ is such that $f(x+2\pi) = f(x)$ and $f(x) = x$, $-\pi \le x \le \pi$. The Fourier series of $f(x)$ is _____.

Options :

1. ✔ $2(\sin x - \frac{1}{2}\sin 2x + \frac{1}{3}\sin 3x - .....)$

2. ✖ $2(\sin x + \frac{1}{2}\sin 2x + \frac{1}{3}\sin 3x + ...)$

3. ✖ $2(\cos x - \frac{1}{2}\cos 2x + \frac{1}{3}\cos 3x - .....)$

4. ✖ $2(\cos x + \frac{1}{2}\cos 2x + \frac{1}{3}\cos 3x + ...)$

Physics

Section Id :	89465872
Section Number :	2
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	25
Number of Questions to be attempted:	25
Section Marks:	25
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	89465882
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 8946583659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dimensional formula for gravitational constant is_____.

Options :

1. ✔ $L^3T^{-2}M^{-1}$

2. ✖ $L^3T^2M^{-1}$

3. ✖ $L^2T^3M^{-2}$

4. ✖ $L^3T^1M^{-3}$

Question Number : 52 Question Id : 8946583660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dimensions of the quantities in one of the following pairs are same. Identify the pairs.

Options :

1. ✔ torque and work

2. ✖ angular momentum and work

3. ✖ energy and Young's modules

4. ✔ light year and wavelength

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

Question Number : 53 Question Id : 8946583661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not correct?

Options :

1. ✖ $j \times i = -k$

2. ✖ $k \times j = -i$

3. ✖ $i \times k = -j$

4. ✔ $k \times i = -j$

Question Number : 54 Question Id : 8946583662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $0.5\,i + 0.8\,j + c\,k$ is a unit vector then c is_____.

Options :

1. ✖ $\sqrt{0.89}$

2. ✖ 0.2

3. ✖ 0.3

4. ✔ $\sqrt{0.11}$

Question Number : 55 Question Id : 8946583663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct?

Options :

1. ✖ $A.B \neq B.A$

2. ✔ $A.(B+C) = A.B + C.A$

3. ✖ $A.B = A.B - A.C$

4. ✖ $A.B = -B.A$

Question Number : 56 Question Id : 8946583664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The acceleration due to gravity on the surface of the earth is given by_____

Options :

1. ✖ G

2. ✔ GM/R^2

3. ✖ GM/R

4. ✖ GM

Question Number : 57 Question Id : 8946583665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of g is maximum at_____.

Options :

1. ✖ equator

2. ✔ Pole

3. ✖ higher altitudes

4. ✖ at the centre of the earth

Question Number : 58 Question Id : 8946583666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the speed of rotation of earth increases your weight_____

Options :

1. ✖ increases

2. ✔ decreases

3. ✖ remains constant

4. ✖ becomes zero

Question Number : 59 Question Id : 8946583667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of G is zero at_____

Options :

1. ✔ nowhere

2. ✖ the centre of the earth

3. ✖ surface of the earth

4. ✖ pole

Question Number : 60 Question Id : 8946583668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the linear momentum is increased by 50%, the kinetic energy will be increased by_____

Options :

1. ✖ 50%

2. ✖ 100%

3. ✔ 125%

4. ✖ 25%

Question Number : 61 Question Id : 8946583669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A metallic block slides down a smooth inclined plane when released from the top, while the other falls freely from the same point, then_____

Options :

1. ✔ both will reach the ground with the same velocity

2. ✖ both will reach the ground together

3. ✖ both will reach the ground travelling with same acceleration

4. ✖ the block sliding down the plane will strike earlier

Question Number : 62 Question Id : 8946583670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A long spring is stretched by 2 cm and its potential energy is u. If the spring is stretched by 10 cm, then the potential energy stored in it will be_____.

Options :

1. ✖ u/24

2. ✖ u/5

3. ✖ 5u

4. ✔ 25u

Question Number : 63 Question Id : 8946583671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two masses of 1 gm and 4 gm are moving with equal kinetic energies. The ratio of the magnitudes of their linear momentum is _____

Options :

1. ✖ 4:1

2. ✖ $\sqrt{2}$:1

3. ✔ 1:2

4. ✖ 1:16

Question Number : 64 Question Id : 8946583672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A body is dropped from rest at height 0.5 m. What will be its velocity when it just strikes the ground?

Options :

1. ✖ 7 m/s

2. ✖ 9.8 m/s

3. ✖ 4.9 m/s

4. ✔ $\sqrt{9.8}$ m/s

Question Number : 65 Question Id : 8946583673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A particle moves such that its acceleration a is given by $a = -bx$ where x is the displacement from equilibrium and b is a constant. The period of Oscillation is_____ .

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

Options :

1. $2\Pi b$

2. $2\Pi\sqrt{b}$

3. $2\Pi/b$

4. $2\sqrt{\Pi}/b$

Question Number : 66 Question Id : 8946583674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A particle is vibrating in simple harmonic motion with amplitude of 4 cm. At what displacement from the equilibrium position is its energy half potential and half kinetic?

Options :

1. ✖ 1 cm

2. ✖ $\sqrt{2}$ cm

3. ✖ 2 cm

4. ✔ $2\sqrt{2}$ cm

Question Number : 67 Question Id : 8946583675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When a star approaches the earth, the waves are shifted towards _____

Options :

1. ✖ green colour

2. ✖ yellow colour

3. ✔ blue end

4. ✖ red end

Question Number : 68 Question Id : 8946583676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a tuning fork of frequency 90 is sounded and moved towards an observer with a velocity equal to one tenth the velocity of sound, then the note heard by the observer will have frequency_____.

Options :

1. ✔ 100

2. ✖ 90

3. ✖ 80

4. ✖ 900

Question Number : 69 Question Id : 8946583677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the most important factor which helps to recognise a person by his/her voice alone_____

Options :

1. ✔ quality

2. ✖ pitch

3. ✖ intensity

4. ✖ quality, pitch and intensity

Question Number : 70 Question Id : 8946583678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The quality of tone_____

Options :

1. ✖ decreases with loudness

2. ✖ varies inversely as amplitude

3. ✖ varies directly as pitch

4. ✔ depends on the overtones present

Question Number : 71 Question Id : 8946583679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The conduction of heat from hot body to cold body is an example of_____.

Options :

1. ✖ reversible process

2. ✔ irreversible process

3. ✖ isothermal process

4. ✖ isobaric process

Question Number : 72 Question Id : 8946583680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

From the isothermal drawn from Andrews experiment, it can be inferred that_____

Options :

1. ✖ CO_2 is a perfect gas

2. ✔ there is continuity of state

3. ✖ there is discontinuity of state

4. ✖ gases like CO_2 and H_2 cannot be liquefied

Question Number : 73 Question Id : 8946583681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A diesel cycle works at_____

Options :

1. ✖ constant volume

2. ✔ constant pressure

3. ✖ constant temperature

4. ✖ both constant volume and constant temperature

Question Number : 74 Question Id : 8946583682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The transition temperature of most low temperature superconducting elements is in the range of _____

Options :

1. ✔ zero to 10 k

2. ✖ 10 k to 20 k

3. ✖ 20 k to 50 k

4. ✖ 50 k alone

Question Number : 75 Question Id : 8946583683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Propagation of light through fiber core is due to_____

Options :

1. ✖ diffraction

2. ✖ interference

3. ✔ total internal reflection

4. ✖ reflection

	Chemistry
Section Id :	89465873
Section Number :	3
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	25
Number of Questions to be attempted:	25

Section Marks: 25
Display Number Panel: Yes
Group All Questions: No

Sub-Section Number: 1
Sub-Section Id: 89465883
Question Shuffling Allowed : Yes

Question Number : 76 Question Id : 8946583684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following energy orders is correct?

Options :

1. ✔ 6s<4f<5d<6p

2. ✖ 4f<5d<6s<6p

3. ✖ 4f<6s<6p<5d

4. ✖ 6s<6p<5d<4f

Question Number : 77 Question Id : 8946583685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

An element A of atomic number 11 combines with an element B of atomic number 17. The compound formed is _____.

Options :

1. ✖ Covalent AB

2. ✔ Ionic AB

3. ✖ Covalent AB_2

4. ✖ Ionic AB_2

Question Number : 78 Question Id : 8946583686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The oxidation number of 'S' in S_8, S_2F_2, H_2S respectively are _____.

Options :

1. ✔ 0, +1 and -2

2. ✖ +2, +1 and-2

3. ✖ 0, +1 and +2

4. ✖ -2, +1 and -2

Question Number : 79 Question Id : 8946583687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The elements A, B, C and D have the following electronic configurations:

A: $1S^2, 2S^2, 2P^1$

B: $1S^2, 2S^2, 2P^6, 3S^2, 3P^1$

C: $1S^2, 2S^2, 2P^6, 3S^2, 3P^3$

D: $1S^2, 2S^2, 2P^6, 3S^2, 3P^5$

The elements that belong to same group are _____.

Options :

1. ✖ A and C

2. ✖ C and D

3. ✖ A and D

4. ✔ A and B

Question Number : 80 Question Id : 8946583688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

4.9 gm of H_2SO_4 is present in 2 lit of its solution. The molarity of the solution is _____.

Options :

1. ✖ 0.1 M

2. ✔ 0.025 M

3. ✖ 0.25 M

4. ✖ 0.01 M

Question Number : 81 Question Id : 8946583689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The molecular weight of H_3PO_4 is 98. The equivalent weight is _____ gram / equivalents.

.

Options :

1. ✖ 98

2. ✖ 49

3. ✔ 32.66

4. ✖ 24.5

Question Number : 82 Question Id : 8946583690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the Bronsted acid?

Options :

1. ✖ Cl^-

2. ✖ NH_2^-

3. ✖ CH_3COO^-

4. ✔ NH_4^+

Question Number : 83 Question Id : 8946583691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The pH of 1 M KOH is ____.

Options :

1. ✖ 12

2. ✖ 11

3. ✔ 14

4. ✖ 13

Question Number : 84 Question Id : 8946583692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Froth floatation process is used for the _____.

Options :

1. ✖ Oxide ores

2. ✔ Sulphide ores

3. ✖ Chloride ores

4. ✖ Oxide ores and Chloride ores

Question Number : 85 Question Id : 8946583693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The composition of brass is _____.

Options :

1. ✔ Cu and Zn

2. ✖ Cu and Ni

3. ✖ Cu and Mn

4. ✖ Cu and Fe

Question Number : 86 Question Id : 8946583694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is correct?

Options :

1. ✖ Cathode is positive terminal in an electrolytic cell

2. ✖ Cathode is negative terminal in a galvanic cell

3. ✔ Reduction occurs at cathode in either of cells

4. ✖ Oxidation occurs at cathode in either of cells

Question Number : 87 Question Id : 8946583695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the electrolysis of $CuCl_2$ solution using copper electrode, if 2.5 gm of Cu is deposited at cathode, then at anode _____.

Options :

1. ✖ 890 mL of Cl_2 at STP is liberated

2. ✖ 445 mL of O_2 at STP is liberated

3. ✖ 2.5 gm of copper is deposited

4. ✔ a decrease of 2.5 gm of mass takes place

Question Number : 88 Question Id : 8946583696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The unit of resistivity is _____.

Options :

1. ✖ Ω

2. ✔ Ω m

3. ✖ Ω /m

4. ✖ $\Omega\ m^2$

Question Number : 89 Question Id : 8946583697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following metals provide cathodic protection to iron?

Options :

1. ✖ Cu and Ni

2. ✔ Al and Zn

3. ✖ Al and Cu

4. ✖ Co and Ni

Question Number : 90 Question Id : 8946583698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The chemical composition of rust is _____.

Options :

1. ✖ Fe_3O_4

2. ✖ Fe_3O_3

3. ✔ $Fe_2O_3.\ nH_2O$

4. ✖ $Fe_3O_3.\ xH_2O$

Question Number : 91 Question Id : 8946583699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

1 ppm of hardness of water is equal to _____.

Options :

1. ✔ 1 part of $CaCO_3$ hardness in 10^6 parts of water

2. ✖ 1 part of $CaCO_3$ hardness in 10^8 parts of water

3. ✖ 1 part of $CaCO_3$ hardness in 10^7 parts of water

4. ✖ 1 part of $CaCO_3$ hardness in 10^5 parts of water

Question Number : 92 Question Id : 8946583700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The temporary hardness of water is due to the presence of _____.

Options :

1. ✖ $MgCl_2$ and $CaCl_2$

2. ✖ $Ca(NO_3)_2$ and $Mg(NO_3)_2$

3. ✖ $CaSO_4$ and $MgSO_4$

4. ✔ $Ca(HCO_3)_2$ and $Mg(HCO_3)_2$

Question Number : 93 Question Id : 8946583701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The basic buffer solution is a mixture of _____.

Options :

1. ✔ $NH_3 + NH_4Cl$

2. ✖ $HCl + NH_4Cl$

3. ✖ $NaCl + NH_4Cl$

4. ✖ $KOH + NH_4Cl$

Question Number : 94 Question Id : 8946583702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following polymers has amide linkage?

Options :

1. ✖ Terylene

2. ✖ Bakelite

3. ✔ Nylon

4. ✖ PVC

Question Number : 95 Question Id : 8946583703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The monomer of natural rubber is _____.

Options :

1. ✖ Butadiene

2. ✖ Chloroprene

3. ✖ 2-methyl 1,2 butadiene

4. ✔ 2-methyl 1,3 butadiene

Question Number : 96 Question Id : 8946583704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a thermo setting?

Options :

1. ✔ Bakelite

2. ✖ Polyethylene

3. ✖ Nylon-6

4. ✖ Natural rubber

Question Number : 97 Question Id : 8946583705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The composition of water gas is _____.

Options :

1. ✔ CO and H_2 are combustible gases and CO_2 and N_2 are non-combustible gases

2. ✖ CO + CO_2 are combustible gases and H_2O and N_2 non-combustible gases

3. ✖ CO + N_2 are combustible gases and H_2O and H_2 are non-combustible gases

4. ✖ N_2+H_2 are combustible gases and CO + H_2O are non-combustible gases

Question Number : 98 Question Id : 8946583706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Earth is protected from UV radiation by _____.

Options :

1. ✖ Nitrogen layer

2. ✔ Ozone layer

3. ✖ Carbon dioxide layer

4. ✖ Oxygen layer

Question Number : 99 Question Id : 8946583707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of following statements is not correct?

Options :

1. ✖ CO is the main air pollutant

2. ✖ All pollutants are not wastes

3. ✔ Water is polluted by dissolved Oxygen

4. ✖ Lichens are pollution indicators

Question Number : 100 Question Id : 8946583708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Minamata disease is caused due to the presence of _____.

Options :

1. ✖ Cd

2. ✖ Pb

3. ✖ As

4. ✔ Hg

Civil Engineering

Section Id :	89465874
Section Number :	4
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	100
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	89465884
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 8946583709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The product of either force of couple with the arm of the forces is called _____.

Options :

1. ✖ resultant couple

2. ✔ moment of the couple

3. ✖ moment of the forces

4. ✖ resulting couple

Question Number : 102 Question Id : 8946583710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Twisting moment is also called as _____.

Options :

1. ✔ torsional moment

2. ✖ moment of line

3. ✖ moment of section

4. ✖ moment of plane

Question Number : 103 Question Id : 8946583711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two balls of equal mass and of perfectly elastic material are lying on the floor. One of the balls with velocity v is made to struck the second ball. Both the balls after impact will move with a velocity_____.

Options :

1. ✖ v

2. ✖ $v/4$

3. ✖ $v/8$

4. ✔ $v/2$

Question Number : 104 Question Id : 8946583712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not the condition for the equilibrium in three dimensional system of axis for the composite bodies if we are determining the moment of inertia for them?

Options :

1. ✔ $\sum F \neq 0$

2. ✖ $\sum Fx = 0$

3. ✖ $\sum Fy = 0$

4. ✖ $\sum Fz = 0$

Question Number : 105 Question Id : 8946583713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum value of Poisson's ratio for an elastic material is _____.

Options :

1. ✔ 0.5

2. ✖ 0.75

3. ✖ 1.0

4. ✖ 0.25

Question Number : 106 Question Id : 8946583714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A torsion member is fabricated from two concentric thin tubes. At the ends, the tubes are welded to rigid discs so that both the tubes can be twisted as a unit. The radius of the outer tube is 2r and that of the inner tube is r. If the shear stress developed in the outer tube is T, then the shear stress in the inner tube will be _____.

Options :

1. ✖ T

2. ✖ 0.75 T

3. ✔ 0.5 T

4. ✖ 0.25 T

Question Number : 107 Question Id : 8946583715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A simply supported beam of span L carries a uniformly distributed load W. the maximum bending moment M is _____.

Options :

1. ✖ WL/2

2. ✔ WL/8

3. ✖ WL/4

4. ✖ WL/12

Question Number : 108 Question Id : 8946583716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When a cantilever beam having rectangular cross-section is loaded transversely, the maximum compressive stress is developed on the _____.

Options :

1. ✖ top layer

2. ✖ neutral axis

3. ✖ every cross-section

4. ✔ bottom layer

Question Number : 109 Question Id : 8946583717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The shape of the bending moment diagram over the length of a beam carrying a uniformly increasing load, is always _____.

Options :

1. ✖ linear

2. ✔ cubic parabola

3. ✖ circular

4. ✖ parabolic

Question Number : 110 Question Id : 8946583718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A compound bar consisting of material A and B is tightly secured at the ends. The coefficient of thermal expansion of A is more than that of B. When temperature is increased, the stresses induced will be _____.

Options :

1. ✖ tensile in both the materials

2. ✖ tensile in material A and compressive in material B

3. ✔ compressive in material A and Tensile in material B

4. ✖ compressive in both the materials

Question Number : 111 Question Id : 8946583719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum shear stress in a rectangular section is ____ times the average shear stress.

Options :

1. ✖ 3/4

2. ✖ 3/7

3. ✔ 3/2

4. ✖ 5/3

Question Number : 112 Question Id : 8946583720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A shaft of length L is subjected to a constant twisting moment T along its length L, then angle θ through which one end of the bar will twist relative to other will be _____.

Options :

1. ✔ TL/GJ

2. ✖ T/G

3. ✖ T/GJ

4. ✖ GJ/TL

Question Number : 113 Question Id : 8946583721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ratio of torsional moments of resistance of a solid circular shaft of diameter D and a hallow shaft having external diameter D and internal diameter 'd' is given by_____

Options :

1. ✔ $\frac{D^4}{D^4 - d^4}$

2. ✖ $\frac{D^4 - d^4}{D^4}$

3. ✖ $\frac{D^3 - d^3}{D^3}$

4. ✖ $\frac{D^3}{D^3 - d^3}$

Question Number : 114 Question Id : 8946583722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Strength of a shaft_____.

Options :

1. ✖ is equal to maximum shear stress in the shaft at the time of elastic failure

2. ✔ is the ability to resist maximum twisting moment

3. ✖ is equal to maximum shear stress in the shaft at the time of rupture

4. ✖ is equal to torsional rigidity

Question Number : 115 Question Id : 8946583723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The Young's modulus of the material is 3.0 times its modulus of rigidity. The Poisson's ratio for the material will be _____.

Options :

1. ✖ 0.15

2. ✖ 0.3

3. ✔ 0.5

4. ✖ 0.75

Question Number : 116 Question Id : 8946583724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A hollow circular section with outside diameter 'D' and inside diameter 'd' will have section modulus 'Z' as _____.

Options :

1. ✖ $\pi(D^4 - d^4)/16d$

2. ✔ $\pi(D^4 - d^4)/32D$

3. ✖ $\pi(D^4 - d^4)/16D$

4. ✖ $\pi(D^3 - d^3)/6d$

Question Number : 117 Question Id : 8946583725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A rectangular beam of depth d and breadth b is to be cut from a circular log of diameter D. Find the ratio of depth to breadth for the straight section in bending _____.

Options :

1. ✖ $d/b = 2$

2. ✔ $d/b = \sqrt{2}$

3. ✖ $d/b = 1$

4. ✖ $d/b = 4$

Question Number : 118 Question Id : 8946583726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a triangular section, the relation between maximum shear stress and average shear stress at neutral axis is _____.

Options :

1. ✖ $\tau = 1.5\tau av$

2. ✖ $\tau = 2.5\tau av$

3. ✔ $\tau = 1.33\tau av$

4. ✖ $\tau = 3.5\tau av$

Question Number : 119 Question Id : 8946583727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Beams composed of more than one material rigidly connected together so as to behave as one piece are known as _____.

Options :

1. ✔ composite beams

2. ✖ compound beams

3. ✖ indeterminate beams

4. ✖ determinate beams

Question Number : 120 Question Id : 8946583728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum magnitude of shear stress due to shear force F on a rectangular section of area A at a neutral axis is _____.

Options :

1. ✖ F/A

2. ✖ F/2A

3. ✔ 3F/2A

4. ✖ 2F/3A

Question Number : 121 Question Id : 8946583729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Separation of coarse aggregate from the concrete mix is known as _____.

Options :

1. ✖ bleeding

2. ✖ shrinkage

3. ✔ segregation

4. ✖ creep

Question Number : 122 Question Id : 8946583730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Modulus of rupture of concrete is the measure of _____

Options :

1. ✖ direct tensile strength

2. ✔ flexural tensile strength

3. ✖ compressive strength

4. ✖ split tensile strength

Question Number : 123 Question Id : 8946583731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The minimum reinforcement in RC slab having high yield strength deformed bars is _____.

Options :

1. ✖ 0.10%

2. ✔ 0.12 %

3. ✖ 0.15%

4. ✖ 0.18%

Question Number : 124 Question Id : 8946583732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Design bond stress in limit state method for plain bars in tension for M20 grade shall be _____.

Options :

1. ✖ 1.0

2. ✔ 1.2

3. ✖ 1.4

4. ✖ 1.6

Question Number : 125 Question Id : 8946583733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum area of tension reinforcement in beams shall not exceed _____.

Options :

1. ✖ 0.02bD

2. ✔ 0.04bD

3. ✖ 0.06bD

4. ✖ 0.08bD

Question Number : 126 Question Id : 8946583734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The shrinkage deflection in an RCC beam can be reduced by providing _____.

Options :

1. ✔ compression steel

2. ✖ tension steel

3. ✖ stirrups

4. ✖ distribution steel

Question Number : 127 Question Id : 8946583735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In limit stage design, the permissible bond strength in the case of deformed bars is more than that in plain bars by _____.

Options :

1. ✖ 80%

2. ✖ 40%

3. ✖ 70%

4. ✔ 60%

Question Number : 128 Question Id : 8946583736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a rectangular orthotropic slab, the bending moment capacities of the section in two mutually perpendicular directions are _____.

Options :

1. ✖ equal

2. ✖ Infinite

3. ✖ zero

4. ✔ unequal

Question Number : 129 Question Id : 8946583737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The lateral ties in a reinforced column under pure axial compression are to _____.

Options :

1. ✔ avoid buckling of the longitudinal reinforcement

2. ✖ provide adequate shear capacity

3. ✖ provide adequate confinement to concrete

4. ✖ reduce the axial deformation to the column

Question Number : 130 Question Id : 8946583738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Bond between steel and concrete ensures _____.

Options :

1. ✖ equal volume of both the materials

2. ✔ strain compatibility

3. ✖ force compatibility

4. ✖ equal weight of both the materials

Question Number : 131 Question Id : 8946583739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In limit state method, stress in compression steel is based on_____

Options :

1. ✖ stress in concrete at its level

2. ✔ strain in concrete at its level

3. ✖ force in concrete at its level

4. ✖ toughness in concrete at its level

Question Number : 132 Question Id : 8946583740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

External wind pressure for design of roof depends on _____ .

Options :

1. ✖ degree of permeability of roof

2. ✔ slope of roof

3. ✖ type of material for roof

4. ✖ temperature of roof

Question Number : 133 Question Id : 8946583741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

As percentage of steel increases _____.

Options :

1. ✖ depth of neutral axis decreases

2. ✔ depth of neutral axis increases

3. ✖ lever arm increases

4. ✖ lever arm decreases

Question Number : 134 Question Id : 8946583742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A short column 200 mm x 200 mm in section is reinforced with reinforcing bars whose area of cross section is 400 mm^2. If permissible compressive stresses in concrete and steel are 5 MPa and 130 MPa, the safe load on the column as per working stress method should not exceed _____.

Options :

1. ✖ 464 kN

2. ✔ 232 kN

3. ✖ 400 kN

4. ✖ 696 kN

Question Number : 135 Question Id : 8946583743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The diameter of longitudinal bars of square column is 20 mm, the diameter of lateral ties should not be less than _____.

Options :

1. ✖ 4 mm

2. ✖ 5 mm

3. ✔ 6 mm

4. ✖ 8 mm

Question Number : 136 Question Id : 8946583744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Following is used to measure a short offset.

Options :

1. ✔ a metallic tape

2. ✖ an ordinary tape

3. ✖ a steel tape

4. ✖ an invar tape

Question Number : 137 Question Id : 8946583745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The magnetic bearing of a line AB is S28º30'E. If the declination is 7º30'W, then the true bearing of the line is _____.

Options :

1. ✖ S28º30'W

2. ✖ S36º00'E

3. ✔ S21º00'E

4. ✖ S21°30'W

Question Number : 138 Question Id : 8946583746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A telescope is said to be inverted if its _____.

Options :

1. ✔ vertical circle is to its right and the bubble of the telescope is down

2. ✖ vertical circle is to its right and the bubble of the telescope is up

3. ✖ vertical circle is to its left and the bubble of the telescope is down

4. ✖ vertical circle is to its left and the bubble of the telescope is up

Question Number : 139 Question Id : 8946583747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The satellite constellation of GPS consists of _____.

Options :

1. ✖ 4 Satellites

2. ✖ 6 Satellites

3. ✖ 18 Satellites

4. ✔ 24 Satellites

Question Number : 140 Question Id : 8946583748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The angle of intersection of the two plane mirrors of an optical square is _____.

Options :

1. ✖ 30°

2. ✔ 45°

3. ✖ 60°

4. ✖ 90°

Question Number : 141 Question Id : 8946583749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correction to be applied to each 30 meter chain length along Θ° slope is _____.

Options :

1. ✔ 30 (sec Θ - 1) m

2. ✖ 30 (sin Θ - 1) m

3. ✖ 30 (cos Θ - 1) m

4. ✖ 30 (tan Θ - 1) m

Question Number : 142 Question Id : 8946583750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Straight, parallel and widely spaced contours represent _____

Options :

1. ✖ a steep surface

2. ✖ a flat surface

3. ✔ an inclined plane surface

4. ✖ a curved surface

Question Number : 143 Question Id : 8946583751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A survey line AB is obstructed by a high building. To prolong the line beyond the building, a perpendicular BC 121.92 m ling is set at B. From C, two lines CD and CE are set out at angles of 30º and 40º with CB respectively. If the chainage of B is 95.10 m, the chainage at D is _____.

Options :

1. ✖ 121.92 m

2. ✔ 224.62 m

3. ✖ 126.65 m

4. ✖ 165.49 m

Question Number : 144 Question Id : 8946583752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a closed traverse, the sum of south latitudes exceeds the sum of the north latitudes and the sum of the east departures exceeds the sum of the wet departures. The closing line will lie in the _____ quadrant.

Options :

1. ✖ N-W

2. ✖ N-E

3. ✖ S-W

4. ✔ S-E

Question Number : 145 Question Id : 8946583753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A transition curve of radius 200 m is to be designed for a velocity of 50.4 km/hr and the rate of gain of radial acceleration is 0.3 m/sec^3. The length of transition curve is _____.

Options :

1. ✖ 15.1 m

2. ✖ 168.0 m

3. ✔ 46.0 m

4. ✖ 50.4 m

Question Number : 146 Question Id : 8946583754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The hydraulic pressure on a plane surface is equal to_____.

(where w = unit weight of liquid, A = Area of plane surface and h = Depth of centroid of the plane area below the liquid free surface).

Options :

1. ✔ $wA\bar{h}$

2. ✖ $wA\bar{h}\sin^2\theta$

3. ✖ $1/2wA\bar{h}$

4. ✖ $wA\bar{h}\sin\theta$

Question Number : 147 Question Id : 8946583755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Poise is the unit of _____.

Options :

1. ✖ density

2. ✖ velocity gradient

3. ✖ kinematic viscosity

4. ✔ dynamic viscosity

Question Number : 148 Question Id : 8946583756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Compressibility is equal to _____.

Options :

1. ✔ $-\frac{\left[\frac{dV}{V}\right]}{dp}$

2. ✖ $\frac{dp}{-\left[\frac{dV}{V}\right]}$

3. ✖ $\frac{dp}{d\rho}$

4. ✖ $\frac{\sqrt{dp}}{\sqrt{d\rho}}$

Question Number : 149 Question Id : 8946583757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The convective acceleration in the direction of x is given by _____.

Options :

1. ✖ $u\frac{\partial u}{\partial y}+\frac{v\partial v}{\partial y}+\frac{w\partial w}{\partial z}$

2. ✖ $\frac{u\partial u}{\partial x}+\frac{u\partial u}{\partial y}+\frac{u\partial u}{\partial z}$

3. ✖ $\frac{u\partial u}{\partial x}+\frac{u\partial v}{\partial y}+\frac{u\partial w}{\partial z}$

4. ✔ $\frac{u\partial u}{\partial x}+\frac{v\partial u}{\partial y}+\frac{w\partial u}{\partial z}$

Question Number : 150 Question Id : 8946583758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The velocity distribution across a section of 2 fixed parallel plates having viscous flow is given by _____.

Options :

1. ✖ $u = \frac{1}{2\mu}\left\{-\frac{\partial p}{\partial x}\right\}(t^2 - y^2)$

2. ✔ $u = \frac{1}{2\mu}\frac{\partial p}{\partial x}[t_y - y^2]$

3. ✖ $u = \frac{1}{2\mu}\frac{\partial p}{\partial x}[y - t_y]$

4. ✖ $u = -\frac{1}{2\mu}\frac{\partial p}{\partial x}[t - y^2\ ]$

Question Number : 151 Question Id : 8946583759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Specific energy of a flowing fluid per unit weight is equal to _____.

Options :

1. ✖ $\frac{p}{w} + \frac{V^2}{2g}$

2. ✖ $\frac{p}{w} + h$

3. ✔ $\frac{V^2}{2g} + h$

4. ✖ $\frac{p}{w} + \frac{V^2}{2g} + h$

Question Number : 152 Question Id : 8946583760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The force exerted by a jet of water (F_x) having velocity (V) on a series of vertical plates, moving with a velocity u is given by_____.

(where ρ is the density of water)

Options :

1. ✔ $F_x = \rho A V^2$

2. ✖ $F_x = \rho A (V - u)^2$

3. ✖ $F_x = \rho A V_u$

4. ✖ $F_x = \rho A (V + u)^2$

Question Number : 153 Question Id : 8946583761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The surface tension of water at 20°C is 75×10^{-3} N/m. The difference in the water surfaces within and outside an open ended capillary tube of 1 mm internal bore, inserted at the water surface would nearly be _____.

Options :

1. ✖ 5 mm

2. ✖ 10 mm

3. ✔ 15 mm

4. ✖ 20 mm

Question Number : 154 Question Id : 8946583762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A cylindrical vessel of radius 42.31 cm and height 1m is open at the top. It holds water to half its depth. Which one of the following values approximates the speed at which the cylinder is to be rotated about the vertical axis, so as to make the apex of the paraboloid just reach the center of the bottom of the vessel?

Options :

1. ✔ 100 rpm

2. ✖ 150 rpm

3. ✖ 250 rpm

4. ✖ 300 rpm

Question Number : 155 Question Id : 8946583763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In an open channel of wide rectangular section with constant 'n' value, the bed slope is $1.2x10^{-3}$, the local friction slope at a section is $1.05x10^{-3}$, and the local Froude number of the flow is 0.8. The local rate of variation of depth with longitudinal distance along the flow direction is _____.

Options :

1. ✖ $(1.2-1.05)/(1-0.8)\ \ x10^{-3}$

2. ✖ $(-1.2-1.05)/(1-0.8)\ x10^{-3}$

3. ✖ $(1.2+1.05)/(1-0.64)\ x10^{-3}$

4. ✔ $(1.2-1.05)/(1-0.64)\ \ x10^{-3}$

Question Number : 156 Question Id : 8946583764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Speed ratio is given by _____.

Options :

1. ✔ $\frac{u}{\sqrt{2gH}}$

2. ✖ $\frac{Vf}{\sqrt{2gH}}$

3. ✖ $\frac{\sqrt{2gH}}{Vf}$

4. ✖ $\frac{Vw}{\sqrt{2gH}}$

Question Number : 157 Question Id : 8946583765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Cavitation can take place in case of _____.

Options :

1. ✖ Pelton wheel

2. ✖ gear pump

3. ✖ reciprocating pump

4. ✔ centrifugal pump

Question Number : 158 Question Id : 8946583766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A trapezoidal section of channel is 2 m wide at a base and the side slopes are 1H to 1.5V. It carries a water discharge of 7 m^3/sec at a depth of 1m. Consider the specific force comprising ($\rho QV+\Upsilon A\bar{Y}$). For an increase of 2 cm of depth, what would be the change in the magnitude of the second term ($\Upsilon A\bar{Y}$)?

Options :

1. ✔ -35 kgf

2. ✖ +35 kgf

3. ✖ +70 kgf

4. ✖ +140 kgf

Question Number : 159 Question Id : 8946583767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A rectangular open channel carries a discharge of 15 m^3/sec when the depth of flow 1.5 m and the bed slope is 1:1440. What will be the discharge through the channel at the same depth if the slope would have been 1:1000?

Options :

1. ✖ 21.6 m^3/sec

2. ✔ 18 m^3/sec

3. ✖ 14.4 m^3/sec

4. ✖ 12.5 m^3/sec

Question Number : 160 Question Id : 8946583768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The base period for a particular crop is 100 days and duty of the canal is 1000 ha/cu mec, the depth of water will be _____ .

Options :

1. ✖ 0.864 cm

2. ✖ 8.64 cm

3. ✔ 86.4 cm

4. ✖ 80.2 cm

Question Number : 161 Question Id : 8946583769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consumptive use of water by a crop means water consumed by _____

Options :

1. ✔ evaporation and transpiration

2. ✖ evaporation only

3. ✖ conveyance loss and evaporation

4. ✖ transpiration and conveyance loss

Question Number : 162 Question Id : 8946583770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The theoretical equilibrium discharge in m^3/sec from an effective rainfall intensity 95 mm/hr continuously falling uniformly over a drainage basin of area of 100 sq.km is_____

Options :

1. ✔ 1000 m^3/sec

2. ✖ 100 m^3/sec

3. ✖ 400 m^3/sec

4. ✖ 2000 m^3/sec

Question Number : 163 Question Id : 8946583771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Mean precipitation over an area is best obtained from gauged amounts by _____.

Options :

1. ✖ Arithmetic mean method

2. ✔ Linearly interpolated isohyetal method

3. ✖ Thiessen method

4. ✖ Orographically weighted isohyetal method

Question Number : 164 Question Id : 8946583772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The useful moisture of soil is equal to its _____.

Options :

1. ✖ field capacity

2. ✖ saturation capacity

difference between field capacity and permanent wilting point

3. ✔ within the root zone of plants

4. ✖ moisture content at permanent wilting point

Question Number : 165 Question Id : 8946583773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In order to obtain a 2-hour hydrograph from a six hour unit hydrograph, which of the following method can be employed?

Options :

1. ✖ S-Curved method

2. ✖ Synthetic unit hydrograph

3. ✔ Instantaneous unit hydrograph

4. ✖ Simple unit hydrograph

Question Number : 166 Question Id : 8946583774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Probability of a 100 year flood to occur at least once in the next 4 years is _____

Options :

1. ✔ 35%

2. ✖ 65%

3. ✖ 25%

4. ✖ 50%

Question Number : 167 Question Id : 8946583775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The purpose of balancing reservoir is, it _____

Options :

1. ✔ balances the flow rates of supply and demand

2. ✖ balances the peak and minimum flows

3. ✖ balances distribution

4. ✖ stores water for emergencies

Question Number : 168 Question Id : 8946583776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For standing crops in undulating sandy fields, the best method of irrigation is _____.

Options :

1. ✔ Sprinkler method

2. ✖ Free flooding

3. ✖ Check method

4. ✖ Furrow method

Question Number : 169 Question Id : 8946583777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Portion of dam in contact with ground at downstream side is _____.

Options :

1. ✖ crest

2. ✔ toe

3. ✖ foot

4. ✖ heel

Question Number : 170 Question Id : 8946583778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the earth dam?

Options :

1. ✔ Banasura sagar dam

2. ✖ Nagarjuna sagar dam

3. ✖ Tehri dam

4. ✖ Bisalpur dam

Question Number : 171 Question Id : 8946583779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Earthen dams _____ compared to gravity dams.

Options :

1. ✖ are costlier

2. ✔ require less skilled labour

3. ✖ require sound rock foundations

4. ✖ are less susceptible to failure

Question Number : 172 Question Id : 8946583780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Irrigation canals are generally aligned along_____

Options :

1. ✖ contour line

2. ✖ valley line

3. ✖ straight line

4. ✔ ridge line

Question Number : 173 Question Id : 8946583781 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ structure is used to remove surplus water from and irrigation channel into a natural drain?

Options :

1. ✖ Canal Regulator

2. ✖ Canal outlet

3. ✖ Canal fall

4. ✔ Canal escape

Question Number : 174 Question Id : 8946583782 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For granular sub-base layers where the compacted thickness exceeding 100 mm and upto 225 mm compaction is done by _____.

Options :

1. ✔ vibratory roller of static weight 10 tons or more

2. ✖ sheep foot roller of static weight 12 tons or more

3. ✖ roller of static weight 14 tons or more

4. ✖ compaction roller of static weight 8 tons or more

Question Number : 175 Question Id : 8946583783 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The cement content in the dry lean concrete mix for pavement construction should be such that the average compressive strength at 7 days shall not be less than _____

Options :

1. ✖ 50 kg/m^3

2. ✖ 100 kg/m^3

3. ✖ 120 kg/m^3

4. ✔ 150 kg/m^3

Question Number : 176 Question Id : 8946583784 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Cant deficiency is the difference between the _____

Options :

1. ✔ theoretical cant and actual cant provided

2. ✖ equilibrium speed and permissible speed

3. ✖ cant gradient and cant deficiency

4. ✖ rate of change of cant and gradient

Question Number : 177 Question Id : 8946583785 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A tongue rail is also called as _____.

Options :

1. ✖ stock rail

2. ✔ switch rail

3. ✖ point rail

4. ✖ pull rail

Question Number : 178 Question Id : 8946583786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The background colour of the informatory sign board is _____.

Options :

1. ✖ red

2. ✔ yellow

3. ✖ green

4. ✖ white

Question Number : 179 Question Id : 8946583787 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

AS per IRC, standard axle load is_____

Options :

1. ✔ 80 kN

2. ✖ 90 kN

3. ✖ 86 kN

4. ✖ 100 kN

Question Number : 180 Question Id : 8946583788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a rural area where the rain fall is light a water bound macadam road with bituminous surface dressing of 7.0 m wide is to be constructed. Select the appropriate camber recommended by Indian Road Congress for the above case and what will be the height of crown with respect to the edges?

Options :

1. ✖ 1 in 20 and height of crown is 0.045 m

2. ✔ 1 in 40 and height of crown is 0.047 m

3. ✖ 1 in 50 and height of crown is 0.070 m

4. ✖ 1 in 30 and height of crown is 0.052 m

Question Number : 181 Question Id : 8946583789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Vehicular live load of highway bridges is expressed in terms _____.

Options :

1. ✖ design axles and lane loading

2. ✖ design pressure and lane loading

3. ✔ design lanes and lane loading

4. ✖ design width and lane loading

Question Number : 182 Question Id : 8946583790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The order of engineering surveys for road alignment is _____.

Options :

1. ✖ Reconnaissance, Detailed Study and Preliminary study and Map study

2. ✖ Reconnaissance, Map study, Detailed Study and Preliminary study

3. ✖ Preliminary study Map study, Preliminary study and Map study

4. ✔ Map Study, Reconnaissance, Preliminary study and Detailed Study

Question Number : 183 Question Id : 8946583791 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following pollutants will enhances the Eutrophication?

Options :

1. ✖ organic carbon

2. ✖ pesticides

3. ✔ nutrients

4. ✖ inorganic carbon

Question Number : 184 Question Id : 8946583792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Most stable ecosystem is _____.

Options :

1. ✖ mountain

2. ✖ forest

3. ✖ desert

4. ✔ ocean

Question Number : 185 Question Id : 8946583793 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In an office building water quantity of _____ per person per day is to be provided as per the standard.

Options :

1. ✔ 45 litres

2. ✖ 125 litres

3. ✖ 55 litres

4. ✖ 75 litres

Question Number : 186 Question Id : 8946583794 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ratio of the maximum daily consumption to the average daily consumption is _____.

Options :

1. ✖ 1.0

2. ✖ 1.2

3. ✖ 1.4

4. ✔ 1.8

Question Number : 187 Question Id : 8946583795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following anaerobic treatment systems does not require inert media for operation?

Options :

1. ✖ Anaerobic Filter

2. ✖ Fluidized Bed Reactor

3. ✔ Up flow Anaerobic Sludge Blanket

4. ✖ Anaerobic Fixed Film Reactors

Question Number : 188 Question Id : 8946583796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Among the alternatives listed below, the most accepted reuse application of reclaimed water would be _____

Options :

1. ✖ drinking and cooking

2. ✖ irrigating food crops

3. ✖ swimming pool supplies

4. ✔ watering non-food plants

Question Number : 189 Question Id : 8946583797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The better approach for increasing social acceptability of wastewater recycling is _____.

Options :

1. ✖ using the best treatment technology available

2. ✔ public awareness campaigns for demonstrating usability of recycled water and putting relevant water quality information on public displays

3. ✖ stopping water supply from conventional water sources

4. ✖ regulatory enforcement for using recycled wastewater

Question Number : 190 Question Id : 8946583798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The settling velocity of a spherical particle in still water is given by _____.

Options :

1. ✖ Lacey's formula

2. ✖ Hazen William's formula

3. ✖ Darcy's law

4. ✔ Stokes' law

Question Number : 191 Question Id : 8946583799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a batch system, maximum growth rate is observed in _____.

Options :

1. ✖ lag phase

2. ✖ stationary phase

3. ✖ decay phase

4. ✔ log phase

Question Number : 192 Question Id : 8946583800 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The end products of Aerobic treatment of wastewater contains _____

Options :

1. ✔ Carbon dioxide and water

2. ✖ Methane

3. ✖ Alcohol

4. ✖ Hydrogen sulfide

Question Number : 193 Question Id : 8946583801 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Amount of weld metal is proportional (Where S is weld dimension) to _____.

Options :

1. ✔ S^2

2. ✖ S

3. ✖ $\sqrt{S}$

4. ✖ $S\sqrt{S}$

Question Number : 194 Question Id : 8946583802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A large Value of percentage elongation of steel becomes meaningful in a structure at limit state of collapse because it ensures that _____

Options :

1. ✖ differential settlement of support is accommodated

2. ✔ excessive forces are resisted without snapping

3. ✖ a high safety factor against collapse is available

4. ✖ the desired rotation capacity is available at joints

Question Number : 195 Question Id : 8946583803 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In limit state method, which of the following formats is used?

Options :

1. ✖ single safety factor

2. ✖ load factor

3. ✖ wind factor

4. ✔ multiple safety factors

Question Number : 196 Question Id : 8946583804 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In limit state method, which of the following criteria is to be satisfied in selection of member?

Options :

1. ✖ Factored Load > Factored Strength

2. ✖ Factored Load ≥ Factored Strength

3. ✔ Factored Load ≤ Factored Strength

4. ✖ Sometimes Factored Load < Factored Strength (or) Factored Load > Factored Strength

Question Number : 197 Question Id : 8946583805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Bars and rods are not used as _____

Options :

1. ✔ friction resistant members

2. ✖ tension members in bracing systems

3. ✖ sag rods to support purlin

4. ✖ supporting girts in industrial buildings

Question Number : 198 Question Id : 8946583806 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the yield point for high yield strength steel?

Options :

1. ✖ 0.5% of offset load

2. ✖ 0.1% of offset load

3. ✖ 1.5% of offset load

4. ✔ 0.2% of offset load

Question Number : 199 Question Id : 8946583807 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A steel beam supporting loads from the floor slab as well as from wall is termed as _____.

Options :

1. ✖ stringer beam

2. ✔ spandrel beam

3. ✖ lintel beam

4. ✖ header beam

Question Number : 200 Question Id : 8946583808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a truss consists of 8 joints, 10 members and 4 reaction components, then it is a _____.

Options :

1. ✖ cantilever truss

2. ✔ deficient truss

3. ✖ redundant truss

4. ✖ simply supported truss