Question Paper Preview

Question Paper Name :	Chemical Engineering 14th Sep 2020 S1
Subject Name :	Chemical Engineering
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Is this Group for Examiner? :	No

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Mathematics

Section Number :	1
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 :	Yes
Mark As Answered Required? :	Yes

Question Number : 1 Question Id : 61097513229 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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If $\begin{vmatrix} 15-x & 11 & 10 \\ 11-3x & 17 & 16 \\ 7-x & 14 & 13 \end{vmatrix}=0$ then the value of x is

Options :

1. 6

2. 5

3. 7

4. -6

Question Number : 2 Question Id : 61097513230 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The co-factors of the elements 2,-5 in the matrix $\begin{pmatrix} -1 & 0 & 5 \\ 1 & 2 & -2 \\ -4 & -5 & 3 \end{pmatrix}$ is

Options :

1. 16,3

2. 17,-3

3. 17,3

4. -17,-3

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Question Number : 3 Question Id : 61097513231 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of the following simultaneous linear equations by using Cramer's rule 3x+4y+5z=18; 2x-y+8z=13; 5x-2y+7z=20 is

Options :

1. -3.-1.1

2. 3.1.1

3. 3.0.1

4. 3.1.-1

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Question Number : 4 Question Id : 61097513232 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 0 & 4 & -2 \\ -4 & 0 & 8 \\ 2 & -8 & x \end{pmatrix}$ is a skew symmetric matrix then the value of x is

Options :

1. 1

2. -8

3. -4

4. 0

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Question Number : 5 Question Id : 61097513233 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The adjoint of the matrix $A = \begin{pmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{pmatrix}$ is

Options :

1. $\begin{pmatrix} 0 & 4 & -2 \\ 4 & -2 & 8 \\ 2 & -8 & 0 \end{pmatrix}$

2. $\begin{pmatrix} 7 & -3 & -3 \\ -1 & 1 & 0 \\ -1 & 0 & 1 \end{pmatrix}$

3. $\begin{pmatrix} 7 & 3 & 3 \\ 1 & 1 & 0 \\ 1 & 0 & 1 \end{pmatrix}$

4. $\begin{pmatrix} 5 & 4 & 2 \\ 4 & 2 & 8 \\ 2 & -8 & 0 \end{pmatrix}$

Question Number : 6 Question Id : 61097513234 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Resolve the rational function $\frac{5x+1}{(x+2)(x-1)}$ into partial fractions

Options :

1. $\frac{3}{x+2} + \frac{2}{x-1}$

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2. $\frac{3}{x+2}-\frac{2}{x-1}$

3. $\frac{-3}{x+2}+\frac{2}{x-1}$

4. $\frac{3}{x-2}+\frac{2}{x+1}$

Question Number : 7 Question Id : 61097513235 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Resolve the rational function $\frac{x^2}{(x^2+1)^2}$ into partial fractions

Options :

1. $\frac{x}{x^2+1}+\frac{x}{(x^2+1)^2}$

2. $\frac{x}{x^2-1}-\frac{x}{(x^2+1)^2}$

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

4. $\frac{x}{x^2+1}-\frac{x}{(x^2+1)^2}$

Question Number : 8 Question Id : 61097513236 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Suppose that A, B, C are positive and $A + B + C = 90^0$ then the value of $\sum tanA\ tanB$ is

Options :

1. -1

2. -2

3. 1

4. 3

Question Number : 9 Question Id : 61097513237 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $cos100^0 cos40^0 + sin100^0 sin40^0$ is

Options :

1. $\frac{1}{2}$

2. $-\frac{1}{2}$

3. $\frac{1}{4}$

4. $\frac{1}{8}$

Question Number : 10 Question Id : 61097513238 Question Type : MCQ Display Question

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Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

If $\frac{cos\alpha}{a} = \frac{sin\alpha}{b}$ then the value of $acos2\alpha + bsin2\alpha$ is

Options :

1. $-a$

2. b

3. a

4. $-a$

Question Number : 11 Question Id : 61097513239 Question Type : MCQ Display Question

Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

If $x + \frac{1}{x} = 2cos\theta$ then the value of $x^3 + \frac{1}{x^3}$ is

Options :

1. $2cos3\theta$

2. $2cos2\theta$

3. $3cos3\theta$

4. $2sin3\theta$

Question Number : 12 Question Id : 61097513240 Question Type : MCQ Display Question

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Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

If $sinx + siny = \frac{1}{4}$ and $cosx + cosy = \frac{1}{3}$ then the value of $tan\left(\frac{x+y}{2}\right)$ is

Options :

1. $-\frac{3}{4}$

2. $\frac{5}{4}$

3. $\frac{7}{4}$

4. $\frac{3}{4}$

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Question Number : 13 Question Id : 61097513241 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

The general solution for $\sqrt{3}cos\theta = sin\theta$ is

Options :

1. $-n\pi + \frac{\pi}{3}$

2. $n\pi + \frac{\pi}{3}$

3. $n\pi - \frac{\pi}{3}$

4. $n\pi + \frac{2\pi}{3}$

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Question Number : 14 Question Id : 61097513242 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The common solution for $cos\theta = -\frac{1}{\sqrt{2}}, tan\theta = -1$ is

Options :

1. $n\pi + \frac{2\pi}{3}$

2. $2n\pi + \frac{5\pi}{3}$

3. $5n\pi + \frac{\pi}{3}$

4. $2n\pi + \frac{3\pi}{4}$

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Question Number : 15 Question Id : 61097513243 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If x is an acute angle and $sin(x + 10^0) = cos(3x - 68^0)$ then the value of x is

Options :

1. -37^0

2. 37^0

3. 38^0

4. 10^0

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Question Number : 16 Question Id : 61097513244 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $tan^{-1}(2) + tan^{-1}(3)$ is

Options :

1. $\frac{3\pi}{4}$

2. $\frac{3\pi}{5}$

3. $\frac{5\pi}{4}$

4. $\frac{\pi}{4}$

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Question Number : 17 Question Id : 61097513245 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $cos\left[sin^{-1}\left(\frac{1}{2}\right) + cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right]$ is

Options :

1. 0

2. 1

3. 3

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4. -1

Question Number : 18 Question Id : 61097513246 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The modulus of the complex number $\left(-1-\sqrt{3}i\right)$ is

Options :

1. 1

2. 6

3. 2

4. 4

Question Number : 19 Question Id : 61097513247 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\left(\frac{\sqrt{3}}{2}+\frac{i}{2}\right)^5-\left(\frac{\sqrt{3}}{2}-\frac{i}{2}\right)^5$ is

Options :

1. i

2. $-i$

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3. $2i$

4. $-3i$

Question Number : 20 Question Id : 61097513248 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The radius of the circle of the equation $x^2 + y^2 - 4x - 8y - 41 = 0$ is

Options :

1. $\sqrt{31}$

2. $\sqrt{41}$

3. $\sqrt{71}$

4. $\sqrt{61}$

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Question Number : 21 Question Id : 61097513249 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If the line $2y = 5 + k$ is a tangent to the parabola $y^2 = 6x$ then the value of k is

Options :

1. $\frac{2}{5}$

2.

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3. $\frac{3}{5}$

3. $\frac{6}{5}$

4. $\frac{7}{5}$

Ans : no correct option

Question Number : 22 Question Id : 61097513250 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The length of latus rectum of the ellipse $9x^2 + 16y^2 = 144$ is

Options :

1. $\frac{7}{2}$

2. $\frac{9}{2}$

3. $\frac{3}{2}$

4. $\frac{5}{2}$

Question Number : 23 Question Id : 61097513251 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The centre of the hyperbola $4x^2 - 5y^2 - 16x + 10y + 31 = 0$ is

Options :

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1. $(2,1)$

2. $(3,1)$

3. $(-2,1)$

4. $(2,-1)$

Question Number : 24 Question Id : 61097513252 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The angle between two tangents drawn from the point $(1,4)$ to the parabola $y^2 = 12x$ is

Options :

1. $tan^{-1}(2)$

2. $tan^{-1}(3)$

3. $tan^{-1}(5)$

4. $tan^{-1}\left(\frac{1}{2}\right)$

Question Number : 25 Question Id : 61097513253 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The length of the tangent from $(1,3)$ to the circle $x^2 + y^2 - 2x + 4y - 11 = 0$ is

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Options :

1. -3

2. 3

3. 5

4. 4

Question Number : 26 Question Id : 61097513254 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{x\to 0}\left(\frac{\sqrt{1+x}-1}{x}\right)$ is

Options :

1. $\frac{1}{3}$

2. $-\frac{1}{3}$

3. $\frac{1}{5}$

4. $\frac{1}{2}$

Question Number : 27 Question Id : 61097513255 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

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Orientation : Vertical

The derivative of $f(x) = \frac{a-x}{a+x}$ $(x \neq -a)$ is

Options :

1. $\frac{-2a}{(a+x)^2}$

2. $\frac{2a}{(a+x)^2}$

3. $\frac{-2a}{(a-x)^2}$

4. $\frac{2a}{(a-x)^2}$

Question Number : 28 Question Id : 61097513256 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $x = a\left[\cos t + log\left(tan\frac{t}{2}\right)\right]$, $y = a \sin t$ then $\frac{dy}{dx}$ is

Options :

1. $-\tan t$

2. $\tan t$

3. $\tan t + \sin t$

4. $\sin t$

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Question Number : 29 Question Id : 61097513257 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If an error of 3% occurs in measuring the side of a cube then the percentage error in its volume is

Options :

1. -9

2. 7

3. 8

4. 9

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Question Number : 30 Question Id : 61097513258 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The slope of the tangent to the curve $y = 5x^2$ at the point $x = -1$ is

Options :

1. 10

2. 7

3. -10

4. -9

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Question Number : 31 Question Id : 61097513259 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The angle between the curves $xy = 2$ and $x^2 + 4y = 0$ is

Options :

1. $-tan^{-1}(3)$

2. $tan^{-1}(3)$

3. $sin^{-1}(3)$

4. $cos^{-1}(3)$

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Question Number : 32 Question Id : 61097513260 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For all values of a and b, $f(x) = x^3 + 3ax^2 + 3a^2x + 3a^3 + b$ is

Options :

1. Increasing only

2. Decreasing only

3. Increasing and Decreasing

4. maximum

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Question Number : 33 Question Id : 61097513261 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The minimum value of $f(x) = 4x^2 - 4x + 11$ for any x in R is

Options :

1. $-10 \ at \ x = \frac{1}{2}$

2. $10 \ at \ x = -\frac{1}{2}$

3. $8 \ at \ x = \frac{1}{2}$

4. $10 \ at \ x = \frac{1}{2}$

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Question Number : 34 Question Id : 61097513262 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $z = log(\tan x + \tan y)$ then $(\sin 2x)\frac{\partial z}{\partial x} + (\sin 2y)\frac{\partial z}{\partial y}$ is

Options :

1. 2

2. -2

3. 4

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4. 6

Question Number : 35 Question Id : 61097513263 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $u = tan^{-1}\left(\frac{x^3+y^3}{x+y}\right)$ then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}$ is

Options :

1. $-\frac{1}{2}\sin 2u$

2. $-\frac{1}{2}\cos 2u$

3. $\frac{1}{2}\sin 2u$

4. $\frac{1}{2}\tan 2u$

Ans : no correct option

Question Number : 36 Question Id : 61097513264 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int sin^2 x\, dx$ on R is

Options :

1. $\frac{x}{2} + \frac{\sin 2x}{4} + c$

2. $\frac{x}{2} - \frac{\sin 3x}{4} + c$

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3. $\frac{x}{2}-\frac{\cos 2x}{4}+c$

4. $\frac{x}{2}-\frac{\sin 2x}{4}+c$

Question Number : 37 Question Id : 61097513265 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int x\sqrt{x}\,dx$ on $(0,\infty)$ is

Options :

1. $\frac{2}{5}x^{5/2}+c$

2. $-\frac{2}{5}x^{5/2}+c$

3. $\frac{2}{5}x^{-5/2}+c$

4. $\frac{2}{3}x^{3/2}+c$

Question Number : 38 Question Id : 61097513266 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int_0^2 \sqrt{4-x^2}\,dx$ is

Options :

1.

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1. $\frac{\pi}{2}$

2. $-\frac{\pi}{2}$

3. π

4. $-\pi$

Question Number : 39 Question Id : 61097513267 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int_{\pi/6}^{\pi/3} \frac{\sqrt{\sin x}}{\sqrt{\sin x}+\sqrt{\cos x}} dx$ is

Options :

1. $\frac{\pi}{2}$

2. $\frac{\pi}{12}$

3. $-\frac{\pi}{12}$

4. π

Question Number : 40 Question Id : 61097513268 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

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Orientation : Vertical

The area enclosed by the curves $y = 3x$ and $y = 6x - x^2$ in square units is

Options :

1. $\frac{7}{2}$

2. $\frac{5}{2}$

3. $\frac{3}{2}$

4. $\frac{9}{2}$

Question Number : 41 Question Id : 61097513269 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

The value of $\int \frac{e^x(1+x)}{(2+x)^2}\,dx$ on $I \in R \setminus\{-2\}$ is

Options :

1. $\frac{e^x}{2+x} + C$

2. $-\frac{e^x}{2+x} + C$

3. $\frac{e^x}{2-x} + C$

4. $\frac{e^{2x}}{2+x} + C$

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Question Number : 42 Question Id : 61097513270 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{1}{1+4x^2}\,dx$ on R is

Options :

1. $-\frac{1}{2}tan^{-1}(2x)+c$

2. $\frac{1}{2}tan^{-1}(5x)+c$

3. $-\frac{1}{2}tan^{-1}(x)+c$

4. $\frac{1}{2}tan^{-1}(2x)+c$

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Question Number : 43 Question Id : 61097513271 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{2x^2-5x+1}{x^2(x^2-1)}\,dx$ is

Options :

1. $\frac{1}{x}+\log\left|\frac{x^5}{(x^2-1)(x+1)^3}\right|+C$

2. $\frac{1}{x}-\log\left|\frac{x^5}{(x^2-1)(x+1)^3}\right|+C$

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3. $\frac{1}{x}+\log\left|\frac{x^5}{(x^2+1)(x+1)^3}\right|+C$

4. $\frac{1}{x}-\log\left|\frac{x^5}{(x^2+1)(x+1)^3}\right|+C$

Question Number : 44 Question Id : 61097513272 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx}=\frac{x-2y+1}{2x-4y}$ is

Options :

1. $(x+2y)^2+2x=c$

2. $(x-2y)^2-2x=c$

3. $(x-2y)^2+2x=c$

4. $(x-4y)^2+2x=c$

Question Number : 45 Question Id : 61097513273 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of the homogeneous differential equation $xy^2\,dy-(x^3+y^3)\,dx=0$ is

Options :

1. $y^3=-3x^3\log(xc)$

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2. $y^3 = 3x^3 \log(x/c)$

3. $y^3 = 3x^3 \log(x^2 c)$

4. $y^3 = 3x^3 \log(xc)$

Question Number : 46 Question Id : 61097513274 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of the linear differential equation $\frac{dy}{dx} + y \cot x = \cos x$ is

Options :

1. $y - \sin x = -\frac{\cos 2x}{4} + c$

2. $y / \sin x = -\frac{\cos 2x}{4} + c$

3. $y \sin x = -\frac{\cos 2x}{4} + c$

4. $y \sin x = \frac{\cos 2x}{4} + c$

Question Number : 47 Question Id : 61097513275 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The solution of Bernoulli's equation $x^3\frac{dy}{dx} - x^2y = -y^4\cos x$ is

Options :

1. $\frac{x^3}{y^3} = 3\sin x + c$

2. $\frac{x^3}{y^3} = -3\sin x + c$

3. $\frac{x^3}{y^3} = 3\sin x^3 + c$

4. $\frac{x^4}{y^4} = 3\sin x + c$

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Question Number : 48 Question Id : 61097513276 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The particular integral for the differential equation $(D^2 + 3D + 2)y = 12x^2$ is

Options :

1. $6x^2 + 18x - 21$

2. $6x^2 - 18x + 21$

3. $-6x^2 + 18x - 21$

4. $6x^2 + 18x + 21$

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Question Number : 49 Question Id : 61097513277 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The particular integral for the differential equation $6\frac{d^2y}{dx^2} + 17\frac{dy}{dx} + 12y = e^{-x}$ is

Options :

1. $-e^{-x}$

2. e^{x}

3. e^{-2x}

4. e^{-x}

Question Number : 50 Question Id : 61097513278 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The particular integral for the differential equation $(D^2 - 4D + 13)y = \cos 2x$ is

Options :

1. $\frac{1}{145}(9\cos 2x - 8\sin 2x)$

2. $\frac{1}{145}(9\cos 2x + 8\sin 2x)$

3. $\frac{1}{145}(-9\cos 2x - 8\sin 2x)$

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4. $\frac{1}{135}(9\cos 2x - 8\sin 2x)$

Physics

Section Number : 2

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 : Yes

Mark As Answered Required? : Yes

Question Number : 51 Question Id : 61097513279 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Young's modulus of steel is 2×10^{11} N m^{-2}. Its value in dyne cm^{-2} is

Options :

1. 2×10^{12}

2. 2×10^{10}

3. 2×10^{8}

4. 2×10^{-11}

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Question Number : 52 Question Id : 61097513280 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Dimension of velocity gradient is

Options :

1. $[M^0L^0T^{-1}]$

2. $[ML^{-1}T^{-1}]$

3. $[M^0LT^{-1}]$

4. $[ML^0T^{-1}]$

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Question Number : 53 Question Id : 61097513281 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Unit vector parallel to the resultant of vectors $A = 4\hat{i} - 3\hat{j}$ and $B = 8\hat{i} + 8\hat{j}$ will be

Options :

1. $\frac{24\hat{i}+5\hat{j}}{13}$

2. $\frac{12\hat{i}+5\hat{j}}{13}$

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3. $\frac{6\hat{i}+5\hat{j}}{13}$

4. $\frac{12\hat{i}-5\hat{j}}{13}$

Question Number : 54 Question Id : 61097513282 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The resultant of two forces 3P and 2P is R. If the first force is doubled. then the resultant is also doubled. The angle between the two forces is

Options :

1. 60^0

2. 120^0

3. 30^0

4. 135^0

Question Number : 55 Question Id : 61097513283 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A particle is projected vertically upward with a speed of 40 m/s. then the velocity of the particle 2 seconds before it reaches the maximum height is (Take $g = 10\ m\ s^{-2}$)

Options :

1.

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$20\ m\ s^{2}$

$4.2\ m\ s^{2}$

2.

$9.8\ m\ s^{2}$

3.

4. $10\ m\ s^{2}$

Question Number : 56 Question Id : 61097513284 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A car moving with constant acceleration covered the distance between two points 60 m apart in 6 s. Its speed as it passes the second point was 15 m s. The acceleration is

Options :

1. $\frac{1}{3}\ ms^{-2}$

2. $\frac{2}{3}\ ms^{-2}$

3. $\frac{3}{5}\ ms^{-2}$

4. $\frac{5}{3}\ ms^{-2}$

Question Number : 57 Question Id : 61097513285 Question Type : MCQ Display Question

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Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

A stone is thrown vertically upwards. When stone is at half of its maximum height, its speed is 10 ms^{-1}: then the maximum height attained by the stone is ($g=10m\ s^{-2}$)

Options :

1. 25m

2. 10m

3. 15m

4. 20m

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Question Number : 58 Question Id : 61097513286 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

Identify the correct statement.

Options :

1. Static friction depends on the area of contact.

2. Kinetic friction depends on the area of contact.

3. Coefficient of static friction does not depend on the area of the surface in contact.

4. Coefficient of kinetic friction is less than the coefficient of static friction.

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Question Number : 59 Question Id : 61097513287 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The coefficient of friction between the tyres and the road is 0.25. The maximum speed with which a car can be driven round a curve of radius 40 m without skidding is (assume g=10m s^{-2})

Options :

1. $40\ ms^{-1}$

2. $20\ ms^{-1}$

3. $15\ ms^{-1}$

4. $10\ ms^{-1}$

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Question Number : 60 Question Id : 61097513288 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

During a projectile motion. if the maximum height is equal to the horizontal range. then the angle of projection with the horizontal is

Options :

1. $\tan^{-1}(1)$

2. $\tan^{-1}(2)$

3. $\tan^{-1}(4)$

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4. $\tan^{-1}(3)$

Question Number : 61 Question Id : 61097513289 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The potential energy of a certain spring when stretched through a distance S is 10 joule. The amount of work (in joule) that must be done on this spring to stretch it through additional distance S will be

Options :

1. 30

2. 40

3. 10

4. 20

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Question Number : 62 Question Id : 61097513290 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A machine gun fires six bullets per second into a target. The mass of each bullet is 3 g and the speed is 500 m/s. The power delivered to the bullets is

Options :

1. 1.5 kW

2. 2.25 kW

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3. 0.75 kW

4. 375 kW

Question Number : 63 Question Id : 61097513291 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is the cheapest renewable energy ?

Options :

1. Solar energy

2. Wind energy

3. Hydel energy

4. Nuclear energy

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Question Number : 64 Question Id : 61097513292 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The maximum velocity of particle executing simple harmonic motion with an amplitude of 7 mm is 4.4 m s. The time period of oscillation is

Options :

1. 100 s

2. 10 s

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3. $0.1\ s$

4. $0.01\ s$

Question Number : 65 Question Id : 61097513293 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two waves of lengths 50 cm and 51 cm produced 12 beats per second. The velocity of sound is

Options :

1. $340\ m\ s$

2. $331\ m\ s$

3. $306\ m\ s$

4. $360\ m\ s$

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Question Number : 66 Question Id : 61097513294 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The apparent frequency of the whistle of an engine changes in the ratio 9:8 as the engine passes a stationary observer. If the velocity of the sound is 340 ms^{-1}, then the velocity of the engine is

Options :

1. $40\ m\ s$

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2. 20 m s

3. 340 m s

4. 180 m s

Question Number : 67 Question Id : 61097513295 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Quality of sound is decided by

Options :

1. loudness

2. intensity

3. number of overtones

4. frequency

Question Number : 68 Question Id : 61097513296 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Inaudibility limit is

Options :

1. one hundredth of initial intensity

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2. one tenth of initial intensity

3. one thousandth of initial intensity

4. one millionth of initial intensity

Question Number : 69 Question Id : 61097513297 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Carnot's engine operates with source at 127^0C and sink at 27^0C. If the source supplies 40 kJ of heat energy, the work done by the engine is

Options :

1. 30 kJ

2. 10 kJ

3. 4 kJ

4. 1 kJ

Question Number : 70 Question Id : 61097513298 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A monoatomic gas initially at 17^0C is suddenly compressed to one eighth of its original volume. The temperature after compression is

Options :

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1. 1160K

2. 36.25K

3. 2320K

4. 887K

Question Number : 71 Question Id : 61097513299 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two cylinders of volumes 20 cc and 30 cc have gases at pressures 40 cm and 50 cm of Hg under the same temperature. If they are connected by a very narrow pipe the pressure in cm of Hg will be

Options :

1. 45

2. 50

3. 46

4. 15

Question Number : 72 Question Id : 61097513300 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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In an adiabatic expansion, a gas does 25J of work while in an adiabatic compression 100J of work is done on a gas. The change of internal energy in the two processes repectively are

Options :

1. 25J and -100J

2. - 25J and 100J

3. -25J and -100J

4. 25J and 100J

Question Number : 73 Question Id : 61097513301 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The volume of one mole of an ideal gas changes from V to 2V at temperature of 300 K. If R is universal gas constant, then work done in this process is

Options :

1. $300Rln2$

2. 600Rln2

3. 300ln2

4. 600ln2

Question Number : 74 Question Id : 61097513302 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The maximum kinetic energy of the photoelectrons emitted from a surface is dependent on the

Options :

1. intensity of incident radiation

2. potential of the collector electrode

3. frequency of incident radiation

4. angle of incident of radiation of the surface

Question Number : 75 Question Id : 61097513303 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an optical fibre, relation between refractive index of core (n_1) and refractive index of cladding (n_2) is

Options :

1. $n_1 > n_2$

2. $n_1 < n_2$

3. $n_1 = n_2$

4. $n_1 << n_2$

Chemistry

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Section Number :	3
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 :	Yes
Mark As Answered Required? :	Yes

Question Number : 76 Question Id : 61097513304 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The nucleus consists of

Options :

1. Proton and electron

2. Proton and Neutron

3. Proton and Duterium

4. Proton and photan

Question Number : 77 Question Id : 61097513305 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The shape of P-Orbital is

Options :

1. Spherical

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2. Dumbbell

3. Double Dumbbell

4. Oval

Question Number : 78 Question Id : 61097513306 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The maximum number of electrons that a f-orbital can accommodate is

Options :

1. 2

2. 6

3. 10

4. 14

Question Number : 79 Question Id : 61097513307 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In NaCl formation Sodium is donating ----- electrons

Options :

1. 0

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2. ^{2}

3. ^{1}

4. ^{3}

Question Number : 80 Question Id : 61097513308 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

O_2 molecule contains

Options :

1. Covalent bond

2. Ionic bond

3. Hydrogen bond

4. Metalic bond

Question Number : 81 Question Id : 61097513309 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Avagadro Number is

Options :

1. $6.023X\ 10^{-23}$

2. $6.023X\ 10^{23}$

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3. $60.23X\ 10^{23}$

4. $6.023X\ 10^{25}$

Question Number : 82 Question Id : 61097513310 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The normality of the solution obtained by dissolving 8 gm of NaOH in 1 Litre is

Options :

1. 2N

2. 0.2N

3. 0.25N

4. 0.02N

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Question Number : 83 Question Id : 61097513311 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Molecular weight of $MgSO_4$ is

Options :

1. 120

2. 121

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3. 119

4. 122

Question Number : 84 Question Id : 61097513312 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A Lewis base is a substance which

Options :

1. Accept protons

2. Accept a lone pair of electrons

3. Donate protons

4. Donate a lone pair of electrons

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Question Number : 85 Question Id : 61097513313 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

P^H of a solution is 4.5, the solution is

Options :

1. Basic

2. Acidic

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3. Neutral

4. Amphoteric

Question Number : 86 Question Id : 61097513314 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

One Faraday is equal to

Options :

1. 96485 C

2. 98485 C

3. 96465 C

4. 96585 C

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Question Number : 87 Question Id : 61097513315 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Common electrolyte used in the salt bridge is

Options :

1. NaOH

2. NaCl

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3. KCl

4. KOH

Question Number : 88 Question Id : 61097513316 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

SI Units of Electrical conductivity are

Options :

1. Seimens per meter

2. Seimens per centimeter

3. Seimens per millimeter

4. Seimens per kilometer

Question Number : 89 Question Id : 61097513317 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Calculate the standard e.m.f of the Zn-Cu cell. if the cell is represented as Zn. Zn^{+2}: Cu^{+}. Cu (E^0Zn^{+2} Zn) =0.86 and (E^0Cu^{+2} Cu) = 0.34.

Options :

1. 1.20V

2. 0.52V

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3. -1.20V

4. -0.11V

Question Number : 90 Question Id : 61097513318 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Permanent Hardness is caused due to

Options :

1. Carbonates and Bicarbonates

2. Carbonates and Sulphates

3. Chlorides and Sulphates

4. Chlorides and Carbonates

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Question Number : 91 Question Id : 61097513319 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Permutit is chemically

Options :

1. Sodium Silicate

2. Aluminium Silicate

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3. Hydrated Sodium alumino silicate

4. Calcium silicate

Question Number : 92 Question Id : 61097513320 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The anion exchange resin possesses

Options :

1. Acidic group

2. Basic group

3. Amphoteric group

4. Benzo group

Question Number : 93 Question Id : 61097513321 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Chemically the rust is

Options :

1. Fe_2O_3

2. $Fe_2O_3.FeO$

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3. $Fe_2O_3.XH_2O$

4. $Fe_2O_3 . NH_3$

Question Number : 94 Question Id : 61097513322 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The gradual loss of a metal by chemical or electrochemical action of environment is called

Options :

1. Corrosion

2. Caustic embrittlement

3. Priming

4. foaming

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Question Number : 95 Question Id : 61097513323 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is a thermosetting plastic ?

Options :

1. Bakelite

2. Polystyrene

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3. Polythene

4. Nylon

Question Number : 96 Question Id : 61097513324 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Tetra Fluoro Ethane is a monomer of

Options :

1. Teflon

2. Nylon

3. Styrene

4. Rubber

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Question Number : 97 Question Id : 61097513325 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Buna-N is a copolymer of

Options :

1. Butadiene and Styrene

2. Butadiene and Acrylonitrile

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3. Butadiene and Isoprene

4. Formaldehyde and Styrene

Question Number : 98 Question Id : 61097513326 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Main constituent of Producer gas is

Options :

1. $CO+N_2$

2. $CO+H_2$

3. $CO+CO_2$

4. CO_2+H_2

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Question Number : 99 Question Id : 61097513327 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Ozone layer is present at

Options :

1. Staratosphere

2. Inosphere

3.

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Thermosphere

4. Atmosphere

Question Number : 100 Question Id : 61097513328 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Acid Rain is caused due to

Options :

1. Chloro Fluoro Carbons

2. Methane

3. Oxides of Sulphur and Nitrogen

4. Carbon monaxide

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Chemical Engineering

Section Number :	4
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 :	Yes

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Mark As Answered Required? : Yes

Question Number : 101 Question Id : 61097513329 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pirani gauge is used to measure

Options :

1. absolute pressure

2. gauge pressure

3. differential pressure

4. atmospheric pressure

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Question Number : 102 Question Id : 61097513330 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Drift occurs in orifice flow meters because of

Options :

1. sudden expansion

2. sudden contraction

3. wear and erosion of the orifice plate

4. vena contracta

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Question Number : 103 Question Id : 61097513331 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Damping in liquid manometers is caused by

Options :

1. liquid mass

2. liquid volume

3. hysteresis

4. viscous fluid friction

Question Number : 104 Question Id : 61097513332 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not required in construction of millivoltmeter?

Options :

1. hairspring

2. jewel pivot

3. soft iron core

4. mica frame

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Question Number : 105 Question Id : 61097513333 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Resistance bridge used for high precision laboratory measurements is

Options :

1. Wheatstone

2. Callendar-Griffiths

3. Capacitance

4. Mueller

Question Number : 106 Question Id : 61097513334 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

X-ray diffraction technique is used for analysis of

Options :

1. hydrocarbons

2. vapours

3. gases

4. solids

Question Number : 107 Question Id : 61097513335 Question Type : MCQ Display Question

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Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

Which of the following is the Chemical Compound of Calomel:

Options :

1. mercury and mercurous chloride

2. mercury and mercuric chloride

3. mercurous chloride and mercuric chloride

4. mercury and mercuric sulphate

Question Number : 108 Question Id : 61097513336 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

Specific gravity of a liquid can be measured using

Options :

1. hygrometer

2. hydrometer

3. single coil siphon

4. manometer

Question Number : 109 Question Id : 61097513337 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

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Orientation : Vertical

Average velocity is measured in pipes of circular cross section using

Options :

1. pitot tube

2. impact tube

3. orifice meter

4. piezometer

Question Number : 110 Question Id : 61097513338 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

Orientation : Vertical

Reynolds number is a ratio of

Options :

1. inertial and viscous forces

2. inertial and gravitational forces

3. viscous and gravitational forces

4. gravitational and buoyant forces

Question Number : 111 Question Id : 61097513339 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option

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Orientation : Vertical

Velocity distribution of laminar flow of Newtonian fluids through a circular pipe is

Options :

1. linear

2. exponential

3. parabolic

4. sinusoidal

Question Number : 112 Question Id : 61097513340 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a circular pipe of diameter D, hydraulic radius is

Options :

1. D

2. $D/2$

3. $D/4$

4. $4D$

Question Number : 113 Question Id : 61097513341 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Example for variable area flow meter is

Options :

1. orifice meter

2. venturimeter

3. pitot tube

4. rotameter

Question Number : 114 Question Id : 61097513342 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a positive displacement pump?

Options :

1. piston pump

2. centrifugal pump

3. plunger pump

4. diaphragm pump

Question Number : 115 Question Id : 61097513343 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Eddies appear in _____ flow.

Options :

1. laminar

2. turbulent

3. potential

4. ideal

Question Number : 116 Question Id : 61097513344 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

SI unit for momentum flux is

Options :

1. Newton

2. Joule

3. Pascal

4. Watt

Question Number : 117 Question Id : 61097513345 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The coefficient of discharge of venturimeter is

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Options :

1. 0.58

2. 0.67

3. 0.74

4. 0.98

Question Number : 118 Question Id : 61097513346 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Size reduction occurs in ball mill mainly due to

Options :

1. compression

2. attrition

3. impact

4. cutting

Question Number : 119 Question Id : 61097513347 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Revolving screens are known as

Options :

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1. grizzlies

2. trommels

3. classifiers

4. separators

Question Number : 120 Question Id : 61097513348 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Terminal settling velocity is associated with

Options :

1. thickener

2. filter

3. cyclone separator

4. jaw crusher

Question Number : 121 Question Id : 61097513349 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Example for heterogeneous mixture is

Options :

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1. ethanol and water

2. kerosene and water

3. benzene and toluene

4. air

Question Number : 122 Question Id : 61097513350 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Work index is required for

Options :

1. Rittinger`s law

2. Kick`s law

3. Bond`s law

4. Kirchoff`s law

Question Number : 123 Question Id : 61097513351 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is an ultrafine grinder.

Options :

1. Roll crusher

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2. Fluid energy mill

3. Thickener

4. Wilfley table

Question Number : 124 Question Id : 61097513352 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following particle sizes are described in terms of surface area per unit mass?

Options :

1. coarse

2. fine

3. very fine

4. ultrafine

Question Number : 125 Question Id : 61097513353 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In plate and frame filter press, if the frames are full of solid and no slurry can enter, then such condition is known as

Options :

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1. weeping

2. blinded

3. jammed

4. loaded

Question Number : 126 Question Id : 61097513354 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For liquids thermal conductivity decreases with rise in temperature. One exemption is

Options :

1. alcohol

2. acetone

3. ether

4. water

Question Number : 127 Question Id : 61097513355 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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For the flow of heat through a hollow cylinder in radial direction, at steady state,

the mean area to be considered is _____ area.

Options :

1. arithmetic mean

2. geometric mean

3. logarithmic mean

4. harmonic mean

Question Number : 128 Question Id : 61097513356 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a particular heat exchange process, the area of heat transfer required is 75

square foot. Which type of heat exchanger can be recommended for this

purpose?

Options :

1. double pipe

2. 1-2 shell and tube

3. 2-4 shell and tube

4. 1-6 shell and tube

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Question Number : 129 Question Id : 61097513357 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Prandtl number for a fluid is 0.03. The fluid is more likely to be

Options :

1. water

2. air

3. liquid metal

4. 2T oil

Question Number : 130 Question Id : 61097513358 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let Nu = Nusselt number. Re = Reynolds number. Pr = Prandtl number. The Dittus-Boelter equation is: $Nu = 0.023Re^{0.8}Pr^{n}$. For the case of heating the fluid. n =

Options :

1. 0.3

2. 1 3

3. 0.4

4. -1 3

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Question Number : 131 Question Id : 61097513359 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Heat is transferred from a hot surface to a flowing fluid. If the surface is at a constant temperature of 70°C and the bulk temperature of the fluid is 20°C, and heat flux is 3230 W/m^2, then heat transfer coefficient = _____ W/(m^2.°C).

Options :

1. 10

2. 64.6

3. 100

4. 273

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Question Number : 132 Question Id : 61097513360 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Biot number is useful in

Options :

1. unsteady state radiation

2. steady state radiation

3. unsteady state conduction

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4. steady state conduction

Question Number : 133 Question Id : 61097513361 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of Reynolds number is 10^5. Then Coulburn j-factor is

Options :

1. 0.0023

2. 0.023

3. 0.23

4. 230

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Question Number : 134 Question Id : 61097513362 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Vapours of a fluid are condensing by forming a film on the surface where the heat transfer coefficient is 1000 W (m^2.°C). If. somehow. dropwise condensation appears. then heat transfer coefficient is likely to be _____ W (m^2.°C).

Options :

1. 1000

2. 5000

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3. 200

4. 500

Question Number : 135 Question Id : 61097513363 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

By referring to the pool boiling of saturated liquid, highly unstable surface appears in which segment of the boiling curve?

Options :

1. natural convection

2. nucleate boiling

3. transition boiling

4. film boiling

Question Number : 136 Question Id : 61097513364 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Black liquor is obtained in manufacture of _____

Options :

1. sulphuric acid

2. soda glass

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3. refractory bricks

4. paper

Question Number : 137 Question Id : 61097513365 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Alkanes are given by

Options :

1. $(C_3H_4)_n$

2. $(CH_2)_n$

3. C_nH_{2n-2}

4. C_nH_{2n-6}

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Question Number : 138 Question Id : 61097513366 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which reactor is not suitable for catalytic cracking reactions?

Options :

1. Fixed bed

2. Fluidized bed

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3. Packed bed

4. CSTR

Question Number : 139 Question Id : 61097513367 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Removal of gums in petroleum end products is accomplished by treating with

Options :

1. phosphoric acid

2. sulphuric acid

3. acetic acid

4. nitric acid

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Question Number : 140 Question Id : 61097513368 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Chemical formula of formaldehyde is

Options :

1. CH_3OH

2. $HCHO$

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3. CH_3CHO

4. CH_3COCH_3

Question Number : 141 Question Id : 61097513369 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Raw material for the production of polyethylene is

Options :

1. ethylene

2. ethylene dichloride

3. 1,2-dichloroethane

4. vinyl chloride

Question Number : 142 Question Id : 61097513370 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which acid is not a constituent of edible oils?

Options :

1. nitric

2. stearic

3. oleic

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4. linoleic

Question Number : 143 Question Id : 61097513371 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The reaction between caustic soda and vegetable oil is known as

Options :

1. hydrogenation

2. alkylation

3. saponification

4. degumming

Question Number : 144 Question Id : 61097513372 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a white pigment?

Options :

1. Lithopone

2. whitelead

3. titanium dioxide

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4. Prussian blue

Question Number : 145 Question Id : 61097513373 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

DCDA process is used for the production of

Options :

1. chlorine

2. tungsten oxide

3. sulphuric acid

4. ozone

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Question Number : 146 Question Id : 61097513374 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Constituents in water gas are

Options :

1. CO and H_2O

2. CO_2 and H_2O

3. CH_4 and N_2

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4. CH_4 and O_2

Question Number : 147 Question Id : 61097513375 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

High purity oxygen can be produced by _____ process

Options :

1. Solvay

2. Kellogg

3. Sindri

4. isomerization

Question Number : 148 Question Id : 61097513376 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Triple superphosphate is obtained by reacting phosphate rock with _____ acid.

Options :

1. sulphuric

2. phosphoric

3. hydrochloric

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acetic

4.

Question Number : 149 Question Id : 61097513377 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

_____ is not a product from chlor-alkali industry?

Options :

1. caustic soda

2. soda ash

3. chlorine

4. sodium chloride

Question Number : 150 Question Id : 61097513378 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Raw material for cement manufacture is

Options :

1. water

2. electricity

3. limestone

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heat

4.

Question Number : 151 Question Id : 61097513379 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Chemical not required in lime soda process is

Options :

1. quick lime

2. alum

3. soda ash

4. sulphuric acid

Question Number : 152 Question Id : 61097513380 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Formation of a protective layer on the surface while treating steel with

concentrated nitric acid is known as

Options :

1. passivation

2. rusting

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3. regeneration

4. inhibition

Question Number : 153 Question Id : 61097513381 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The degree of polymerization in polyethylene is 500. The average molecular weight is

Options :

1. 7000

2. 12000

3. 5000

4. 14000

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Question Number : 154 Question Id : 61097513382 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The crystal form of Fe(ε) is

Options :

1. BCC

2. FCC

3. BCT

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4. HCP

Question Number : 155 Question Id : 61097513383 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not an allying element of steel for improving oxidation resistance?

Options :

1. chromium

2. nickel

3. aluminium

4. oxygen

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Question Number : 156 Question Id : 61097513384 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An example for brittle material is

Options :

1. copper

2. iron

3. concrete

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4. nickel

Question Number : 157 Question Id : 61097513385 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Poisson's ratio for metals is around

Options :

1. 0.1

2. 0.3

3. 0.8

4. 1.4

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Question Number : 158 Question Id : 61097513386 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Endangered species of India include

Options :

1. tiger

2. crow

3. hen

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4. pig

Question Number : 159 Question Id : 61097513387 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In grass land ecosystem. the producers are

Options :

1. grasses

2. trees

3. algae

4. bushes

Question Number : 160 Question Id : 61097513388 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In case of acid rain. the pH of rain water would be

Options :

1. equal to 7

2. less than 7

3. around 8

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4. greater than 8

Question Number : 161 Question Id : 61097513389 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The presence of _____ in air is called smog.

Options :

1. fine water droplets

2. carbon dioxide

3. smoke and fog

4. air borne particles

Question Number : 162 Question Id : 61097513390 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Eutrophication results due to presence of _____ in water.

Options :

1. acids

2. radioactive materials

3. phosphates

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4. phenols

Question Number : 163 Question Id : 61097513391 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is the main marine pollutant?

Options :

1. flood waters

2. oil

3. cylcone

4. tsunami

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Question Number : 164 Question Id : 61097513392 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Reuse, reclamation and recycling is the strategy adopted in

Options :

1. air pollution control

2. water pollution abatement

3. solid waste management

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4. noise pollution control

Question Number : 165 Question Id : 61097513393 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

HPCL disaster in Visakhapatnam on 14th September 1997 is an example for _____ pollution case study.

Options :

1. air

2. water

3. soil

4. particulate

Question Number : 166 Question Id : 61097513394 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For an ideal gas Cp – Cv =

Options :

1. 3R/2

2. 5R/2

3. R

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4. $R\gamma$

Question Number : 167 Question Id : 61097513395 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Duhring's rule is used to predict

Options :

1. heat capacities of solid compounds

2. boiling point elevation of liquids

3. melting point of solids

4. volume of gases

Question Number : 168 Question Id : 61097513396 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$Fe(\alpha) \rightarrow Fe(\gamma)$. This reaction is carried out at 910°C. Heat accompanied in this reaction is called as

Options :

1. heat of fusion

2. heat of transition

3. heat of vaporization

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4. specific heat

Question Number : 169 Question Id : 61097513397 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A liquid which was at 70°C has an enthalpy of 250 J kg. If heat of vaporization

at 70°C is 1000 J kg, what is the enthalpy of the vapour at 70°C?

Options :

1. 750 J kg

2. 1000 J kg

3. 1250 J kg

4. 250 J/kg

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Question Number : 170 Question Id : 61097513398 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given standard heats of formation are:

$FeS_2(s)$ $\Delta H^\circ = -40.000$ J mol

$Fe_2O_3(s)$ $\Delta H^\circ = -200.000$ J mol

$SO_2(g)$ $\Delta H^\circ = -70.000$ J mol

Calculate the standard heat of the following reaction:

$2FeS_2(s) + 5\ ½\ O_2(g) \rightarrow Fe_2O_3(s) + 4SO_2(g)$

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Options :

1. -200.000 J

2. -400.000 J

3. -310.000 J

4. Insufficient data

Question Number : 171 Question Id : 61097513399 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A gas mixture has an average molecular weight of 22.4 at 0°C and 1 atmosphere.

Its density is _____ kg m^3.

Options :

1. 1.0

2. 1000

3. 22.4

4. 8.314

Question Number : 172 Question Id : 61097513400 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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An ideal gas mixture contains three gases A, B and C. At a given temperature and volume, the total pressure of the gas mixture is 760 mmHg. If the partial pressures of A and B are 360 and 210 mm Hg respectively, what is the mole fraction of C?

Options :

1. 0.25

2. 0.5

3. 0.75

4. 0.33

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Question Number : 173 Question Id : 61097513401 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Brix scale is useful for finding

Options :

1. specific gravities of alcohol

2. concentration of sugar solution

3. densities of petroleum oils

4. specific heats of gases

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Question Number : 174 Question Id : 61097513402 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Bypassing a fluid stream by splitting it into two parallel streams is often practiced when accurate control in _____ is desired.

Options :

1. temperature

2. pressure

3. flowrate

4. concentration

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Question Number : 175 Question Id : 61097513403 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An organic compound is in liquid state at room temperature and boils at 250°C at atmospheric pressure. This liquid contains some non-volatile impurities. The substance can be purified using _____ distillation.

Options :

1. differential

2. steam

3. azeotropic

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4. flash

Question Number : 176 Question Id : 61097513404 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

pervaporation occurs in

Options :

1. multiple effect evaporation

2. multicomponent distillation

3. crystallization

4. membrane separation

Question Number : 177 Question Id : 61097513405 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Interphase mass transfer occurs in

Options :

1. diffusion of gas A into stagnant gas B

2. diffusion of gas A into moving gas B

3. mixing of gases A and B

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4. crystallization of solute A from a solution of A and B

Question Number : 178 Question Id : 61097513406 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Slowest process among the following is

Options :

1. evaporation of one drop of water on a heated pan

2. sublimation of one gram of camphor into air

3. spread of incense in a room

4. dissolution of 1 gram of single sugar crystal into stagnant water in a beaker

Question Number : 179 Question Id : 61097513407 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Mier's supersaturation theory is applicable for

Options :

1. distillation

2. absorption

3. crystallization

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4. size reduction

Question Number : 180 Question Id : 61097513408 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Removal of tar by filter of a cigarette is an example of

Options :

1. extraction

2. adsorption

3. leaching

4. drying

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Question Number : 181 Question Id : 61097513409 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Separation of azeotrope into its constituent species is possible by

Options :

1. differential distillation

2. flash vaporization

3. equilibrium distillation

4. extraction

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Question Number : 182 Question Id : 61097513410 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Removal of moisture from rice grains is known as

Options :

1. dehumidification

2. desorption

3. distillation

4. drying

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Question Number : 183 Question Id : 61097513411 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Evaporation operation is generally followed by _____ operation.

Options :

1. humidification

2. crystallization

3. dissolution

4. solubilization

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Question Number : 184 Question Id : 61097513412 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is a Non-renewable form of energy?

Options :

1. nuclear

2. biomass

3. solar

4. wind

Question Number : 185 Question Id : 61097513413 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Main constituent of natural gas is

Options :

1. methane

2. ethane

3. ethylene

4. mercaptan

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Question Number : 186 Question Id : 61097513414 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a fossil source of energy?

Options :

1. coal

2. petroleum

3. nuclear fuel

4. solar energy

Question Number : 187 Question Id : 61097513415 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Energy audit is very much useful for:

Options :

1. energy conversion

2. energy conservation

3. energy transformation

4. safety of plant operation

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Question Number : 188 Question Id : 61097513416 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

HAZOP study is useful in

Options :

1. energy conservation

2. reactor optimization

3. corruption prevention

4. safety of plant operation

Question Number : 189 Question Id : 61097513417 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For manufacturing refractory bricks _____ is useful.

Options :

1. dolomite

2. soda ash

3. caustic soda

4. caustic potash

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Question Number : 190 Question Id : 61097513418 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Combustion products of LPG are

Options :

1. methane and hydrogen

2. carbon dioxide and water vapour

3. methane and propane

4. methane and sulphur dioxide

Question Number : 191 Question Id : 61097513419 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let δ = Cp Cv. Then the process undergone by an ideal gas for which PV^{δ} =

constant is _____

Options :

1. polytropic

2. adiabatic

3. isochoric

4. isothermal

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Question Number : 192 Question Id : 61097513420 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Both A and B were ideal gases at 1 atm and 27°C. If one mole of A and one mole of B were mixed in a rigid insulated chamber, the resulting gas mixture was also at 1 atm and 27°C. Total entropy change for this process is

Options :

1. less than zero

2. equal to zero

3. less than or equal to zero

4. greater than zero

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Question Number : 193 Question Id : 61097513421 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A reversible heat pump operates between two thermal reservoirs at 300 K and 400 K. The coefficient of performance is

Options :

1. 4

2. 0.75

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3. $^{4}{}_{3}$

4. ^{3}

Question Number : 194 Question Id : 61097513422 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

One mole of an ideal gas underwent a change of state by a constant volume process. The work done during this process is

Options :

1. equal to zero

2. not equal to zero

3. less than zero

4. greater than zero

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Question Number : 195 Question Id : 61097513423 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Molecules of a gas exhibit intermolecular attractive forces. The PVT behavior of this gas can be represented by _____ equation.

Options :

1. ideal gas

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2. virial

3. vander Waals

4. insufficient data

Question Number : 196 Question Id : 61097513424 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Reaction between dodecene and benzene goes to completion in 3 hours. This reaction can be carried out in

Options :

1. batch reactor

2. plug flow reactor

3. continuous flow reactor

4. tubular reactor

Question Number : 197 Question Id : 61097513425 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Integral analysis of reaction data is used in determining

Options :

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1. enthalpy change of reaction

2. order of reaction

3. heat of reaction

4. optimum pressure of reaction

Question Number : 198 Question Id : 61097513426 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The degrees of freedom for the system consisting of liquid water in equilibrium with a mixture of water vapour and nitrogen is

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 199 Question Id : 61097513427 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An amount of 8 kJ heat is added to a closed system while its internal energy decreases by 12 kJ. How much energy is transferred as work?

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Options :

1. 4 kJ

2. 20 kJ

3. 1.5 kJ

4. 0.67 kJ

Question Number : 200 Question Id : 61097513428 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For an ideal gas internal energy is function of _____ only.

Options :

1. temperature

2. pressure

3. specific heat ratio

4. molar volume

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