Question Paper Preview

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 :	Chemical Engineering 31st Aug 2020 Shift 2
Subject Name :	Chemical Engineering
Creation Date :	2020-09-01 11:53:56
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Chemical Engineering

Group Number :	1
Group Id :	76439053
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No

Mathematics

Section Id :	764390203
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 :	Yes
Mark As Answered Required? :	Yes

Sub-Section Number : 1
Sub-Section Id : 764390233
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 76439010425 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Let A, B be two distinct square matrices of same order such that AB=A, BA=B, then

Options :

76439041601. ✔ $A^2 = A,\ B^2 = B$

76439041602. ✖ $A^2 = A,\ B^2 \neq B$

76439041603. ✖ $A^2 \neq A,\ B^2 = B$

76439041604. ✖ $A^2 \neq A,\ B^2 \neq B$

Question Number : 2 Question Id : 76439010426 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following statements is not correct?

Options :

76439041605. ✖ Every square matrix can be expressed as a sum of a symmetric and a skew-symmetric matrices.

76439041606. ✖ If A is non singular matrix , then so is adj A

76439041607. ✖ If A , B , C are nxn matrices , then (AB)C=A(BC)

76439041608. ✔ Let O denote the nxn null matrix. If A,B are nxn matrices and AB=O, then A=O or B=O

Question Number : 3 Question Id : 76439010427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If A is a square matrix of order 4, then $|adj(adjA^2)| =$

Options :

76439041609. ✖ $|A|^3$

76439041610. ✖ $|A|^6$

76439041611. ✖ $|A|^{27}$

76439041612. ✔ $|A|^{18}$

Question Number : 4 Question Id : 76439010428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the system of equations $x = cy + bz$, $y = az + cx$, $z = bx + ay$ has a non-zero solution, then $a^2 + b^2 + c^2 + 2abc =$

Options :

76439041613. ✖ 0

76439041614. ✖ 2

76439041615. ✔ 1

76439041616. ✖ 3

Question Number : 5 Question Id : 76439010429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\frac{x^2+x+1}{x^2+2x+1} = A + \frac{B}{x+1} + \frac{C}{(x+1)^2}$, then $(A,B,C) =$

Options :

76439041617. ✔ (1,-1,1)

76439041618. ✖ (1,-1,-1)

76439041619. ✖ (-1,1,-1)

76439041620. ✖ (-1,-1,-1)

Question Number : 6 Question Id : 76439010430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If x,y,z are three distinct positive real numbers and $\frac{\log x}{y-z}=\frac{\log y}{z-x}=\frac{\log z}{x-y}$, then $xyz=$

Options :

76439041621. ✖ 0

76439041622. ✔ 1

76439041623. ✖ 2

76439041624. ✖ 3

Question Number : 7 Question Id : 76439010431 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In $\triangle ABC$, if $\cot\frac{A}{2}=\frac{b+c}{a}$, then $\angle A+\angle C=$

Options :

76439041625. ✖ 60°

76439041626. ✔ 90°

76439041627. ✖ 120°

76439041628. ✖ 150°

Question Number : 8 Question Id : 76439010432 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In $\triangle ABC$, if $\cot\frac{A}{2}:\cot\frac{B}{2}:\cot\frac{C}{2}=3:5:7$, then $a:b:c=$

Options :

76439041629. ✖ 5:4:6

76439041630. ✔ 6:5:4

76439041631. ✖ 4:6:5

76439041632. ✖ 12:5:4

Question Number : 9 Question Id : 76439010433 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $A-B=\frac{3\pi}{4}$, then $(1-\tan A)(1+\tan B) =$

Options :

76439041633. ✖ 0

76439041634. ✖ 1

76439041635. ✔ 2

76439041636. ✖ 3

Question Number : 10 Question Id : 76439010434 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\sqrt{3}\csc 20^0 - \sec 20^0 =$

Options :

76439041637. ✖ 1

76439041638. ✖ 2

76439041639. ✖ 3

76439041640. ✔ 4

Question Number : 11 Question Id : 76439010435 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\cos A \cos 2A \cos 4A \cos 8A =$

Options :

76439041641. ✔ $\frac{\sin 16A}{16 \sin A}$

76439041642. ✖ $\frac{\sin 32A}{32\sin A}$

76439041643. ✖ $\frac{\sin 48A}{48\sin A}$

76439041644. ✖ $\frac{\sin 64A}{64\sin A}$

Question Number : 12 Question Id : 76439010436 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The general solution set of $\sin 2x + \sin 4x = 2\sin 3x$ is

Options :

76439041645. ✔ $\left\{\frac{n\pi}{3} / n \in \mathbb{Z}\right\}$

76439041646. ✖ $\{2n\pi / n \in \mathbb{Z}\}$

76439041647. ✖ $\{n\pi / n \in \mathbb{Z}\}$

76439041648. ✖ $\left\{\frac{n\pi}{3} + 2n\pi / n \in \mathbb{Z}\right\}$

Question Number : 13 Question Id : 76439010437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If x, y, z have same sign such that $xy + yz + zx < 1$ and $\tan^{-1} x + \tan^{-1} y + \tan^{-1} z = \pi$,

then $\frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx} =$

Options :

76439041649. ✖ $\frac{1}{xyz}$

76439041650. ✔ 1

76439041651. ✖ xyz

76439041652. ✖ $\frac{1}{x^2y^2z^2}$

Question Number : 14 Question Id : 76439010438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\sinh x = 5$, then $e^x =$

Options :

76439041653. ✖ $5 - \sqrt{26}$

76439041654. ✔ $5 + \sqrt{26}$

76439041655. ✖ $5 \pm \sqrt{26}$

76439041656. ✖ $\sqrt{26} - 5$

Question Number : 15 Question Id : 76439010439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If α and β are two distinct complex numbers such that $\left|\frac{\beta-\alpha}{1-\bar{\alpha}\beta}\right| = 1$, then

Options :

76439041657. ✖ $|\alpha| = 1$

76439041658. ✖ $|\beta| = 1$

76439041659. ✔ $|\alpha| = 1$ or $|\beta| = 1$

76439041660. ✖ $|\alpha| = 1$ and $|\beta| = 1$

Question Number : 16 Question Id : 76439010440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\left(\frac{1+\sin\theta+i\cos\theta}{1+\sin\theta-i\cos\theta}\right)^n = \cos k\theta + i\sin k\theta$, then $k =$

Options :

76439041661. ✖ $\frac{n\pi}{2} - \theta$

76439041662. ✖ $\frac{n\pi}{2} - n\theta$

76439041663. ✖ $n\pi - n\theta$

76439041664. ✔ $\frac{1}{2\theta}(n\pi - 2n\theta)$

Question Number : 17 Question Id : 76439010441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the perpendicular distance of the straight line $\frac{x}{a}+\frac{y}{b}=1, a>0, b>0$ from the origin is p then

Options :

76439041665. ✖ $\frac{1}{p^2}=\frac{1}{a^2}-\frac{1}{b^2}$

76439041666. ✖ $p^2=b^2-a^2$

76439041667. ✔ $\frac{1}{p^2}=\frac{1}{a^2}+\frac{1}{b^2}$

76439041668. ✖ $p^2=a^2+b^2$

Question Number : 18 Question Id : 76439010442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The line $lx+my+n=0$ is a normal to the circle $x^2+y^2-4x-6y+11=0$ if

Options :

76439041669. ✔ $2l+3m+n=0$

76439041670. ✖ $2l+3m-n=0$

76439041671. ✖ $2l-3m-n=0$

76439041672. ✖ $2l-3m+n=0$

Question Number : 19 Question Id : 76439010443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The centre of the circle passing through origin and (0,4) & (4,0) is

Options :

76439041673. ✖ $(4,4)$

76439041674. ✖ $(4,2)$

76439041675. ✖ $(2,4)$

76439041676. ✔ $(2,2)$

Question Number : 20 Question Id : 76439010444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$$\lim_{x\to\frac{\pi}{2}} \frac{e^{\cos x}-1}{x-\frac{\pi}{2}} =$$

Options :

76439041677. ✖ 0

76439041678. ✖ 1

76439041679. ✔ -1

76439041680. ✖ $\pi/2$

Question Number : 21 Question Id : 76439010445 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The derivative of $\log_a x$, with respect to a^x is

Options :

76439041681. ✖ 1

76439041682. ✖ xa^x

76439041683. ✔ $\dfrac{1}{xa^x(\log a)^2}$

76439041684. ✖ $\dfrac{1}{xa^x}$

Question Number : 22 Question Id : 76439010446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $y = x + \tan x$, then $\cos^2 x \dfrac{d^2y}{dx^2} + 2x =$

Options :

76439041685. ✖ $2y'$

76439041686. ✔ $2y$

76439041687. ✖ y'

76439041688. ✖ y

Question Number : 23 Question Id : 76439010447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The set of all points at which the curve $y = \sin x$ has horizontal tangents are

Options :

76439041689. ✔ $\left((2n+1)\dfrac{\pi}{2}, (-1)^n\right) \quad n \in \mathbb{Z}$

76439041690. ✖ $\left(n\pi,(-1)^n\right)\ n\in\mathbb{Z}$

76439041691. ✖ $\left(n\frac{\pi}{2},(-1)^n\right)\ n\in\mathbb{Z}$

76439041692. ✖ $\left((2n+1)\pi,(-1)^n\right)\ n\in\mathbb{Z}$

Question Number : 24 Question Id : 76439010448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The interval in which $f(x)=x^x,(x>0)$ is increasing is

Options :

76439041693. ✖ $\left(0,1/e\right)$

76439041694. ✖ $(0,e)$

76439041695. ✖ (e,∞)

76439041696. ✔ $\left(1/e,\infty\right)$

Question Number : 25 Question Id : 76439010449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The extreme values of $f(x)=4x-\frac{x^2}{2}$ on $\left[-2,\frac{9}{2}\right]$ are

Options :

76439041697. ✔ absolute minimum = -10; absolute maximum = 8

76439041698. ✖ absolute minimum = 8; absolute maximum = 12

76439041699. ✖ absolute minimum = -10; absolute maximum = 12

76439041700. ✖ absolute minimum = -2; absolute maximum = 9/2

Question Number : 26 Question Id : 76439010450 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $\sin u = \frac{x+y}{\sqrt{x}+\sqrt{y}}$, then $2\left(x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}\right)\cos u =$

Options :

76439041701. ✔ $\sin u$

76439041702. ✖ $\frac{1}{2}\sin u$

76439041703. ✖ $\tan u$

76439041704. ✖ $\sin 2u$

Question Number : 27 Question Id : 76439010451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\int \frac{\sin 2x}{(\sin 5x)(\sin 3x)}dx =$

Options :

76439041705. ✖ $\log|\sin 3x| - \log|\sin 5x| + C$

76439041706. ✖ $\frac{1}{3}\log|\sin 3x| + \frac{1}{5}\log|\sin 5x| + C$

76439041707. ✔ $\frac{1}{3}\log|\sin 3x| - \frac{1}{5}\log|\sin 5x| + C$

$3\log|\sin 3x| - 5\log|\sin 5x| + C$

76439041708. ✖

Question Number : 28 Question Id : 76439010452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\int x(\sin x)(\sec^3 x)dx =$

Options :

$\frac{1}{2}[\sec^2 x - \tan x] + C$

76439041709. ✖

$\frac{1}{2}[x\sec^2 x - \tan x] + C$

76439041710. ✔

$\frac{1}{2}[x\sec^2 x + \tan x] + C$

76439041711. ✖

$\frac{1}{2}[\sec^2 x + \tan x] + C$

76439041712. ✖

Question Number : 29 Question Id : 76439010453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\int \sqrt{e^x - 1}\, dx =$

Options :

$2\left[\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1}\right] + C$

76439041713. ✔

$\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1} + C$

76439041714. ✖

$\sqrt{e^x - 1} + \tan^{-1}\sqrt{e^x - 1} + C$

76439041715. ✖

$2\left[\sqrt{e^x-1}+\tan^{-1}\sqrt{e^x-1}\right]+C$

76439041716. ✖

Question Number : 30 Question Id : 76439010454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$\int \frac{\ln(\tan x)}{\sin x \cos x}\,dx =$

Options :

76439041717. ✖ $\frac{1}{2}\ln(\tan x)+C$

76439041718. ✖ $\frac{1}{2}\ln(\tan^2 x)+C$

76439041719. ✔ $\frac{1}{2}[\ln(\tan x)]^2+C$

76439041720. ✖ 0

Question Number : 31 Question Id : 76439010455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The area of the region (in square units) bounded by the parabola $y = x^2 + 1$ and the straight-line $x + y = 3$ is

Options :

76439041721. ✔ $\frac{9}{2}$

76439041722. ✖ 3

76439041723. ✖ $\frac{9}{4}$

76439041724. ✖ 0

Question Number : 32 Question Id : 76439010456 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The values of a function f at different points are given in the following table.

x	-4	-3	-2	-1	0	1	2
$f(x)$	0	4	5	3	10	11	2

The approximate value of $\int_{-4}^{2} f(x)dx$ is

Options :

76439041725. ✖ 32

76439041726. ✔ 34

76439041727. ✖ 26

76439041728. ✖ 40

Question Number : 33 Question Id : 76439010457 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The degree of the differential equation $(1+x^2)\left(\frac{dy}{dx}\right)^2 - 2xy\frac{dy}{dx} + (1+y^2) = 0$ is

Options :

76439041729. ✖ 1

76439041730. ✔ 2

76439041731. ✖ 3

76439041732. ✖ 0

Question Number : 34 Question Id : 76439010458 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Solution of $\frac{dy}{dx} + \frac{1+y^2}{1+x^2} = 0$ is

Options :

$\sin^{-1} x + \sin^{-1} y = C$

76439041733. ✖

$\tan^{-1} x - \tan^{-1} y = C$

76439041734. ✖

$\tan^{-1} x + \tan^{-1} y = C$

76439041735. ✔

$\sin^{-1} x - \sin^{-1} y = C$

76439041736. ✖

Question Number : 35 Question Id : 76439010459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Solution of $(1+x^2)\frac{dy}{dx} + 2xy = \cos x$ is

Options :

$(1+x^2)y + \sin x = C$

76439041737. ✖

$(1+x^2)y = \cos x + C$

76439041738. ✖

$(1+x^2)\,y = \sin x + C$

76439041739. ✔

$(1+x^2)\,y + \cos x = C$

76439041740. ✖

Question Number : 36 Question Id : 76439010460 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 1) = cosh\, x$

Options :

$\frac{x}{2}\sinh x$

76439041741. ✔

$\frac{x}{2}\cosh x$

76439041742. ✖

76439041743. ✖ $\sinh x$

76439041744. ✖ $\cosh x$

Question Number : 37 Question Id : 76439010461 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $\left(D^3+4D\right)y=\sin 2x$ is

Options :

76439041745. ✖ $\frac{x\sin 2x}{2}$

76439041746. ✖ $\frac{x\sin 2x}{4}$

76439041747. ✖ $\frac{x\sin 2x}{8}$

76439041748. ✔ $\frac{-x\sin 2x}{8}$

Question Number : 38 Question Id : 76439010462 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 2D+4)y = x^2$ is

Options :

76439041749. ✖ $\frac{1}{4}(x^2-x)$

76439041750. ✔ $\frac{1}{4}(x^2+x)$

76439041751. ✖ $\frac{1}{4}(x^2+x+1)$

76439041752. ✖ $\frac{1}{4}(x^2+x-1)$

Question Number : 39 Question Id : 76439010463 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particular integral of $(D^2 - 4)y = \cos^2 x$ is

Options :

76439041753. ✔ $\frac{-1}{8} - \frac{\cos 2x}{16}$

76439041754. ✖ $\frac{1}{8} - \frac{\cos 2x}{16}$

76439041755. ✖ $\frac{-1}{8} + \frac{\cos 2x}{16}$

76439041756. ✖ $\frac{1}{8} - \frac{\cos 2x}{16}$

Question Number : 40 Question Id : 76439010464 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Complementary function of $(D^3 - D^2 + D - 1)\, y = 0$ is

Options :

76439041757. ✖ $y_c = c_1 e^{-x} + c_2 \cos x + c_3 \sin x$

76439041758. ✖ $y_c = c_1 \cos x + c_2 \sin x$

76439041759. ✔ $y_c = c_1 e^{x} + c_2 \cos x + c_3 \sin x$

76439041760. ✖ $y_c = c_1 e^{2x} + c_2 \cos 2x + c_3 \sin 2x$

Question Number : 41 Question Id : 76439010465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A differential equation formed by eliminating the constants a and b in $y = ae^{bx}$ is

Options :

76439041761. ✖ $$y\frac{d^2y}{dx^2} = \frac{dy}{dx}$$

76439041762. ✖ $$y\left(\frac{d^2y}{dx^2}\right)^2 = \left(\frac{dy}{dx}\right)^2$$

76439041763. ✖ $$y\frac{dy}{dx} = \left(\frac{d^2y}{dx^2}\right)^2$$

76439041764. ✔ $$y\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$$

Question Number : 42 Question Id : 76439010466 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Solution of the differential equation $x\frac{dy}{dx} = y\,(\log y - \log x + 1)$ is

Options :

76439041765. ✔ $y = xe^{cx}$

76439041766. ✖ $y = x^2e^{cx}$

76439041767. ✖ $x = ye^{cy}$

76439041768. ✖ $x = y^2e^{cy}$

Question Number : 43 Question Id : 76439010467 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $t\sin t$, then $F(2) =$

Options :

76439041769. ✔ 4/25

76439041770. ✖ -4/25

76439041771. ✖ 4/5

76439041772. ✖ -4/5

Question Number : 44 Question Id : 76439010468 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $\frac{\sin t}{t}$, then $F(1) =$

Options :

76439041773. ✖ $\pi/2$

76439041774. ✔ $\pi/4$

76439041775. ✖ $-\pi/2$

76439041776. ✖ $-\pi/4$

Question Number : 45 Question Id : 76439010469 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $F(s)$ denotes the Laplace transform of $e^{-t}\sin t$, then $\lim_{s\to o} F(s) =$

Options :

76439041777. ✖ 0

76439041778. ✔ 2

76439041779. ✖ 1/2

76439041780. ✖ -1/2

Question Number : 46 Question Id : 76439010470 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If $f(t)$ denotes the inverse Laplace transform of $\left[\frac{s+2}{(s+1)(s-2)}\right]$, then $\lim_{t\to o} f(t) =$

Options :

76439041781. ✖ -1

76439041782. ✖ 0

76439041783. ✖ 1/2

76439041784. ✔ 1

Question Number : 47 Question Id : 76439010471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The inverse Laplace transform of $\log\frac{s+1}{s-1}$ is

Options :

76439041785. ✖ $\frac{e^t + e^{-t}}{t}$

76439041786. ✖ $\frac{-e^t - e^{-t}}{t}$

76439041787. ✖ $\frac{e^{-t} - e^t}{t}$

76439041788. ✔ $\frac{e^t - e^{-t}}{t}$

Question Number : 48 Question Id : 76439010472 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The inverse Laplace Transform of $\frac{1}{s^2(s+5)}$ is

Options :

76439041789. ✖ $t*t*e^{t}$

76439041790. ✔ $1*1*e^{-5t}$

76439041791. ✖ $\int_0^t \left(1-e^{-5\sigma}\right)d\sigma$

76439041792. ✖ $\int_0^t \left(\int_0^\sigma e^{-5\tau}d\tau\right)d\sigma$

Question Number : 49 Question Id : 76439010473 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Assertion (A): $\frac{1}{1^2}+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\ldots\ldots\ldots=\frac{\pi^2}{12}$

Reason (R): The Fourier series to represent $x-x^2$ from $x=-\pi$ to $x=\pi$ is

$$-\frac{\pi^2}{3}+4\left[\frac{\cos x}{1^2}-\frac{\cos 2x}{2^2}+\frac{\cos 3x}{3^2}-\ldots\ldots\ldots\right]+2\left[\frac{\sin x}{1}-\frac{\sin 2x}{2}+\frac{\sin 3x}{3}-\ldots\ldots\ldots\right]$$

Options :

76439041793. ✖ Both A and (R) are true and (R) is correct explanation of (A)

76439041794. ✔ Both A and (R) are true but (R) is not correct explanation of (A)

76439041795. ✖ Statement (A) is true , Statement (R) is false

76439041796. ✖ Statement (A) is false , Statement (R) is true

Question Number : 50 Question Id : 76439010474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The coefficient of $\cos x$ in the Fourier expansion of $f(x)=|\cos x|$, $x\in[-\pi,\pi]$ is

Options :

76439041797. ✖ $4/\pi$

76439041798. ✖ $-4/\pi$

76439041799. ✖ $2/\pi$

76439041800. ✔ 0

Physics

Section Id :	764390204
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 :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390234
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 76439010475 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

$ML^2T^{-3}$is the dimensional formula of

Options :

76439041801. ✖ Energy

76439041802. ✖ Force

76439041803. ✔ Power

76439041804. ✖ Density

Question Number : 52 Question Id : 76439010476 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Distance ‘d’ covered by a particle in time ‘t’ is given by

$$d = xt + yt^2 + zt^3$$

The dimensions of x, y, z are

Options :

76439041805. ✖ x=L, y=L, z=LT^{-1}

76439041806. ✖ x=L, y=LT^{-1}, z=LT^{-2}

76439041807. ✖ x=L, y=LT^{2}, z=LT^{3}

76439041808. ✔ x=LT^{-1}, y=LT^{-2}, z=LT^{-3}

Question Number : 53 Question Id : 76439010477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The work function of Al, K and Pt is 4.38 eV, 2.36 eV and 5.60 eV respectively. Their respective threshold frequencies would be

Options :

76439041809. ✖ Al>Pt>K

76439041810. ✖ K>Al>Pt

76439041811. ✖ Al>K>Pt

76439041812. ✔ Pt>Al>K

Question Number : 54 Question Id : 76439010478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The critical angle of a denser medium of refraction index $\sqrt{2}$ is

Options :

76439041813. ✖ 60°

76439041814. ✔ 45°

76439041815. ✖ 30°

76439041816. ✖ 0°

Question Number : 55 Question Id : 76439010479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

During an adiabatic operation the pressure and density (P_1, d_1) of a diatomic gas change to (P_2, d_2), if $\frac{d2}{d1} = 243$, then $\frac{P_2}{P_1}$ is ($r=\frac{7}{5}$)

Options :

76439041817. ✔ 2187

76439041818. ✖ 3187

76439041819. ✖ 4187

76439041820. ✖ 1187

Question Number : 56 Question Id : 76439010480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A gas is heated through 1° C in a closed vessel. Its pressure is increased by 0.4%. The initial temperature of the gas is

Options :

76439041821. ✖ 23° C

76439041822. ✔ -23° C

76439041823. ✖ 33° C

76439041824. ✖ -33° C

Question Number : 57 Question Id : 76439010481 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the cross product of the two vectors 2i + 3j + k and 3i + 2j + k.

Options :

76439041825. ✔ i + j – 5k

76439041826. ✖ 2i + 3j + k

76439041827. ✖ i + 2j + k

76439041828. ✖ 2i – j – 5k

Question Number : 58 Question Id : 76439010482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the angle between two vectors $\bar{A}$= 2i + j–k and $\bar{B}$ = i–k

Options :

76439041829. ✖ 90°

76439041830. ✖ 45°

76439041831. ✖ 60°

76439041832. ✔ 30°

Question Number : 59 Question Id : 76439010483 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A car moving on a straight road accelerates from a speed of 4.1 m/s to a speed of 6.9 m/s in

5.0 s. What was its average acceleration?

Options :

76439041833. ✖ $5.6\ m/s^2$

76439041834. ✖ $1.2\ m/s^2$

76439041835. ✔ $0.56\ m/s^2$

76439041836. ✖ $1.56\ m/s^2$

Question Number : 60 Question Id : 76439010484 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body is projected with an initial velocity 40 m/s at 60° to the horizontal. Find its initial velocity vector (given $g=10m/s^2$).

Options :

76439041837. ✖ $20i - 20j$

76439041838. ✔ $20i + 20\sqrt{3}\ j$

76439041839. ✖ $20\sqrt{3}\ i + 20j$

76439041840. ✖ $10i + 10\sqrt{3}\ j$

Question Number : 61 Question Id : 76439010485 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A bomb is dropped from an aircraft travelling horizontally at 150 ms^{-1} at a height of 490 m. The horizontal distance travelled by the bomb before it hits the ground is

Options :

76439041841. ✖ 1800 m

76439041842. ✔ 1500 m

76439041843. ✖ 1200 m

76439041844. ✖ 1000 m

Question Number : 62 Question Id : 76439010486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the force required to move a body of mass 5 kg on a rough surface with a uniform velocity. If the coefficient of friction is 0.4

Options :

76439041845. ✖ 15N

76439041846. ✖ 16.5 N

76439041847. ✖ 18 N

76439041848. ✔ 19.6 N

Question Number : 63 Question Id : 76439010487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body of mass 20 kg moving with a velocity of 4m/s on a horizontal rough surface stops after covering a distance 5 m, the coefficient of friction is

Options :

76439041849. ✔ 0.16

76439041850. ✖ 0.32

76439041851. ✖ 1.6

76439041852. ✖ 3.2

Question Number : 64 Question Id : 76439010488 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A machine gun fires 240 bullets per minute with a velocity of 500 m/s. If the mass of each of the bullet is 5×10^{-2} kg. then the power of the gun is

Options :

76439041853. ✖ 30,000 watts

76439041854. ✖ 20,000 watts

76439041855. ✔ 25,000 watts

76439041856. ✖ 35,000 watts

Question Number : 65 Question Id : 76439010489 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A body of mass 200 kg is moving on a horizontal plane with an acceleration 2 m/s^2, what is the work done in moving the body through a distance of 50 m.

Options :

76439041857. ✖ 3×10^4 J

76439041858. ✔ 2×10^4 J

76439041859. ✖ 4×10^4 J

76439041860. ✖ 1×10^4 J

Question Number : 66 Question Id : 76439010490 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the kinetic energy of a bullet of mas 0.05 kg. if it moves with a velocity of 100 m/s.

Options :

76439041861. ✖ 120 J

76439041862. ✖ 200 J

76439041863. ✔ 250 J

76439041864. ✖ 150 J

Question Number : 67 Question Id : 76439010491 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A particle is executing SHM with an amplitude of 0.2m. At what distance from the mean position the potential energy of the particle will be equal to its kinetic energy

Options :

76439041865. ✖ $\pm\, 0.34\ meters$

76439041866. ✖ $\pm\, 0.24\ meters$

76439041867. ✔ $\pm\, 0.1414\ meters$

76439041868. ✖ $\pm\, 0.521\ meters$

Question Number : 68 Question Id : 76439010492 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A seconds pendulum oscillates with an amplitude of 0.4m. If the mass of the pendulum is 0.2 kg. Then kinetic energy of the pendulum at mean position

Options :

76439041869. ✔ 0.157 J

76439041870. ✖ 2.15 J

76439041871. ✖ 1.5 J

76439041872. ✖ 3 J

Question Number : 69 Question Id : 76439010493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Velocity of sound wave in air at 0°C is

Options :

76439041873. ✖ 350 m/s

76439041874. ✔ 330 m/s

76439041875. ✖ 360 m/s

76439041876. ✖ 380 m/s

Question Number : 70 Question Id : 76439010494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The minimum distance to hear an echo at 0°C is

Options :

76439041877. ✖ 15 meters

76439041878. ✔ 16.5 meters

76439041879. ✖ 17 meters

76439041880. ✖ 14 meters

Question Number : 71 Question Id : 76439010495 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Read the following statements about the viscosity, then choose the correct option

A: The viscosity of liquids increases as the temperature increases

B: The viscosity of gases increases as the temperature increases

Options :

76439041881. ✖ Only A is correct

76439041882. ✖ Only B is correct

76439041883. ✔ Both A and B are correct

76439041884. ✖ Both A and B are not correct

Question Number : 72 Question Id : 76439010496 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A Copper wire of length 2m is stretched by 2cm them find then the strain on the wire

Options :

76439041885. ✖ 0.02

76439041886. ✖ 0.2

76439041887. ✖ 0.1

76439041888. ✔ 0.01

Question Number : 73 Question Id : 76439010497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Choose the correct expression for ohm's law

Options :

76439041889. ✔ $I = \frac{V}{R}$

76439041890. ✖ $I = \frac{R}{V}$

76439041891. ✖ $V = \frac{R}{I}$

76439041892. ✖ $V = \frac{I}{R}$

Question Number : 74 Question Id : 76439010498 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

1A, 2A and 3A currents are flowing a junction then find out how much current will flow out from that junction

Options :

76439041893. ✔ 6A

76439041894. ✖ 3A

76439041895. ✖ 2A

76439041896. ✖ 1A

Question Number : 75 Question Id : 76439010499 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Read the following statements about magnetism,

A: The two poles of a magnet will have equal pole strength

B: Like poles of magnet will attract each other

C: Magnetic poles can be isolated from each other

D: The magnetism in the middle of a bar magnet is minimum

Choose the correct option from the following:

Options :

76439041897. ✖ A and B are correct

76439041898. ✖ A, B and C are correct

76439041899. ✖ A, B, C and D are correct

76439041900. ✔ A and D are correct

Chemistry

Section Id : 764390205
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 :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390235
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 76439010500 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The electronic configuration of Na^{+}

Options :

76439041901. ✖ $1S^2 2S^2 2P^6 3S^1$

76439041902. ✖ $1S^2 2S^2 2P^6 3S^2$

76439041903. ✔ $1S^2 2S^2 2P^6 3S^0$

76439041904. ✖ $1S^2 2S^2 2P^6 3S^2 3P^1$

Question Number : 77 Question Id : 76439010501 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Number of sigma (σ) and Pi (π) bonds present in Nitrogen molecule

Options :

76439041905. ✖ $1\sigma, 1\pi$

76439041906. ✖ $2\sigma, 1\pi$

76439041907. ✖ $2\sigma, 2\pi$

76439041908. ✔ $1\sigma, 2\pi$

Question Number : 78 Question Id : 76439010502 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the oxidation numbers of Mn in $KMnO_4$

Options :

76439041909. ✔ +7

76439041910. ✖ +6

76439041911. ✖ -7

76439041912. ✖ -6

Question Number : 79 Question Id : 76439010503 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the molarity of the solution which contain 20 g of sodium hydroxide (NaOH) in 100 ml solution

Options :

76439041913. ✔ 5 M

76439041914. ✖ 2 M

76439041915. ✖ 1 M

76439041916. ✖ 0.5 M

Question Number : 80 Question Id : 76439010504 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Equivalent weight of sulphuric acid (H_2SO_4) is

Options :

76439041917. ✖ 98 g

76439041918. ✔ 49 g

76439041919. ✖ 2 g

76439041920. ✖ 100 g

Question Number : 81 Question Id : 76439010505 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a buffer solution?

Options :

76439041921. ✖ CHCOOH + CH_3COONa

76439041922. ✖ NH_4Cl +NH_4OH

76439041923. ✔ NaOH +NaCl

76439041924. ✖ CH_3COOH + CH_3COOK

Question Number : 82 Question Id : 76439010506 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Statement a: Ionic Product of water is 1×10^{-14}

Statement b: pH value of neutral Solution is 7

Options :

76439041925. ✖ Both the statements are incorrect

76439041926. ✔ Both the statements are correct

76439041927. ✖ Statement ' a' is correct, 'b' is incorrect

76439041928. ✖ Statement 'a' is incorrect ,' b' is correct

Question Number : 83 Question Id : 76439010507 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the pH of 10^{-3} M HCl Solution?

Options :

76439041929. ✔ 3

76439041930. ✖ 10

76439041931. ✖ 10^{-3}

76439041932. ✖ -3

Question Number : 84 Question Id : 76439010508 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Statement a: flux +slag = gangue

Statement b: flux + gangue = slag

Options :

76439041933. ✖ Both the statements are incorrect

76439041934. ✖ Both the statements are correct

76439041935. ✖ Statement 'a' is correct, 'b' is incorrect

76439041936. ✔ Statement 'a' is incorrect, 'b' is correct

Question Number : 85 Question Id : 76439010509 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Composition of brass alloy is

Options :

76439041937. ✖ Ni-60%, Al-40%

76439041938. ✖ Cu- 60%, Ni -40%

76439041939. ✔ Cu- 60%, Zn- 40%

76439041940. ✖ Cu- 40%, Zn- 60%

Question Number : 86 Question Id : 76439010510 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The EMF of the following cell Pt, $H_2(g)$ | Hcl (sol)|| AgCl $_{(s)}$ |$Ag_{(s)}$ is

(given that $E^o_{Agcl/Ag} = +0.222v$)

Options :

76439041941. ✔ + 0.222 v

76439041942. ✖ -0.222 v

76439041943. ✖ +0.44 v

76439041944. ✖ -0.44 v

Question Number : 87 Question Id : 76439010511 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Standard reduction potential of Zn is

Options :

76439041945. ✔ -0.76 v

76439041946. ✖ +0.76 v

76439041947. ✖ +0.44 v

76439041948. ✖ + 0.642 v

Question Number : 88 Question Id : 76439010512 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is a primary factor influencing on rate of corrosion

Options :

76439041949. ✖ pH

76439041950. ✖ Temperature

76439041951. ✖ Polarization of electrode

76439041952. ✔ Nature of the metal

Question Number : 89 Question Id : 76439010513 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Formation of rust on iron is an example of

Options :

76439041953. ✖ Chemical corrosion

76439041954. ✔ Electrochemical corrosion

76439041955. ✖ Liquid metal corrosion

76439041956. ✖ Galvanic corrosion

Question Number : 90 Question Id : 76439010514 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Impressed voltage method is an example of

Options :

76439041957. ✔ Cathodic protection

76439041958. ✖ Anodic protection

76439041959. ✖ Metal coating

76439041960. ✖ Organic coating

Question Number : 91 Question Id : 76439010515 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Indicate the right chemical equation for the removal of temporary handness of water?

Options :

76439041961. ✔ $Ca(HCO_3)_2 \rightarrow CaCO_3 + CO_2 + H_2O$

76439041962. ✖ $Na_2Z + MgSo_4 \rightarrow MgZ + Na_2SO_4$

76439041963. ✖ $Cl_2 + H_2O \rightarrow HCl + HClO$

76439041964. ✖ $Na_2Z + CaCl_2 \rightarrow CaZ + 2NaCl$

Question Number : 92 Question Id : 76439010516 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Indicate the hardness of water in degree French and degree Clark when the degree of hardness of water is 250 ppm?

Options :

76439041965. ✖ 250° Fr & 19.5° Clark

76439041966. ✖ 20.5° Fr & 14.7° Clark

76439041967. ✔ 25° Fr & 17.5° Clark

76439041968. ✖ 20.5° Fr & 17.5° Clark

Question Number : 93 Question Id : 76439010517 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the hardness of a sample of water in ppm (in equivalents of $CaCO_3$) which contains 29.2 mg of $Mg(HCO_3)_2$ per litre

Options :

76439041969. ✖ 30 mg

19 mg

76439041970. ✖

76439041971. ✖ 25 mg

76439041972. ✔ 20 mg

Question Number : 94 Question Id : 76439010518 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following statements is false?

Options :

76439041973. ✖

In addition polymerisation, polymer molecular weight rises steadily through the reaction

Addition polymerisation requires the presence of double bond in monomer

76439041974. ✖

In addition polymerisation, growth of chain is at one active centre

76439041975. ✔

No by-product is formed in addition polymerisation

76439041976. ✖

Question Number : 95 Question Id : 76439010519 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which catalyst is used in the preparation of Bakelite

Options :

76439041977. ✖ Benzoyl peroxide

76439041978. ✖ Isobutylene with $TiCl_4$

76439041979. ✔ Acidic /Alkaline

76439041980. ✖ Metal Chloride

Question Number : 96 Question Id : 76439010520 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which rubber is used for preparing gloves and aprons?

Options :

76439041981. ✖ Buna-S rubber

76439041982. ✔ Neoprene rubber

76439041983. ✖ Butyl rubber

76439041984. ✖ Silicone rubber

Question Number : 97 Question Id : 76439010521 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is not character of a good fuel?

Options :

76439041985. ✖ The fuel must burn with a moderate velocity

76439041986. ✔ It should possess low ignition temperature

76439041987. ✖ It should have the highest pyrometric effect

76439041988. ✖ It should possess high calorific value

Question Number : 98 Question Id : 76439010522 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following and choose the right answer

1. Atmosphere	A. It covers sea, rivers, oceans, lakes
2. Hydrosphere	B. It contains life saving oxygen
3. Lithosphere	C. The domain of living organism
4. Biosphere	D. The solid component of the earth

Choose the correct option from the following:

Options :

76439041989. ✖ 1-B, 2-D, 3-A, 4-C

76439041990. ✔ 1-B, 2-A, 3-D, 4-C

76439041991. ✖ 1-D, 2-A, 3-B, 4-C

76439041992. ✖ 1-B, 2-C, 3-D, 4-A

Question Number : 99 Question Id : 76439010523 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The permissible level of a poisonous pollutant in atmosphere is known as

Options :

76439041993. ✖ Gaseous Pollutant

76439041994. ✖ Aerosol pollutant

76439041995. ✔ Threshold limit value

76439041996. ✖ Biological contaminant

Question Number : 100 Question Id : 76439010524 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which pollutants form smog that limits the visibility of roads?

Options :

76439041997. ✖ Carbon monoxide and hydrocarbons

76439041998. ✖ Sulphur oxides and hydrocarbons

76439041999. ✖ Peroxy acetyl nitrates

76439042000. ✔ Nitrogen oxides and hydrocarbons

Chemical Engineering

Section Id :	764390206
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 :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390236
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 76439010525 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The property of metals or alloys which describes its ability to be drawn into wires is known as:

Options :

76439042001. ✖ Tenacity

76439042002. ✔ Ductility

76439042003. ✖ Porosity

76439042004. ✖ Malleability

Question Number : 102 Question Id : 76439010526 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Metalloid is

Options :

76439042005. ✖ An alloy

76439042006. ✖ Highly electronegative element

76439042007. ✖ Highly electropositive element

76439042008. ✔ An element which exhibits properties of both metals and non-metals

Question Number : 103 Question Id : 76439010527 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Type 304 steel contains

Options :

76439042009. ✔ 18% Cr, 8%Ni, 0.08% C (max)

76439042010. ✖ 8% Cr, 18%Ni, 0.08% C (max)

76439042011. ✖ 6% Cr, 18%Ni, 0.08% C (max)

76439042012. ✖ 18% Cr, 12%Ni, 0.08% C (max)

Question Number : 104 Question Id : 76439010528 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Invar is an alloy of

Options :

76439042013. ✖ Iron and Chromium

76439042014. ✔ Iron and Nickel

76439042015. ✖ Nickel and Chromium

76439042016. ✖ Copper and Aluminium

Question Number : 105 Question Id : 76439010529 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Composition of alloys is commonly determined by

Options :

76439042017. ✖ Mass spectrometer

76439042018. ✖ Thermal conductivity cell

76439042019. ✖ Polarimeter

76439042020. ✔ Polarography

Question Number : 106 Question Id : 76439010530 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Styrene -Butadiene rubber is

Options :

76439042021. ✖ A natural rubber

76439042022. ✔ A synthetic rubber

76439042023. ✖ An engineering plastic

76439042024. ✖ A synthetic monomer

Question Number : 107 Question Id : 76439010531 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Higher yield of carbon black can be achieved starting with

Options :

76439042025. ✔ Aromatic hydrocarbon raw materials

76439042026. ✖ Aliphatic hydrocarbon raw materials

76439042027. ✖ Carbo disulphide as raw material

76439042028. ✖ Chloro-flouro hydro carbons as raw materials

Question Number : 108 Question Id : 76439010532 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is most reading corroded in air?

Options :

76439042029. ✖ Copper

76439042030. ✔ Iron

76439042031. ✖ Tin

76439042032. ✖ Silver

Question Number : 109 Question Id : 76439010533 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

0.5 M $H_2SO_4$is diluted from 1L to 10L. The normality of the resulting solution is

Options :

76439042033. ✖ 1N

76439042034. ✔ 0.1 N

76439042035. ✖ 10 N

76439042036. ✖ 5N

Question Number : 110 Question Id : 76439010534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Vapour pressures of pure A and B are 100 and 150 mm Hg respectively. 2 moles of liquid A and 3 moles of liquid B are mixed to form an ideal solution. The total pressure is

Options :

76439042037. ✔ 130 mmHg

76439042038. ✖ 135 mmHg

76439042039. ✖ 145 mmHg

76439042040. ✖ 140 mmHg

Question Number : 111 Question Id : 76439010535 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A continuous distillation of a binary mixture produces distillate of 5448 kg/hr and bottoms of 8172 kg/hr operating with a reflux ratio of 3.5. The vapor entering the condenser is

Options :

76439042041. ✔ 24516 kg/hr

76439042042. ✖ 19068 kg/hr

76439042043. ✖ 13620 kg/hr

76439042044. ✖ 12107 kg/hr

Question Number : 112 Question Id : 76439010536 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A packed bed absorber operates with the following data:

X_1=0.18 X_2 = 0.0 Y_1=0.22 Y_2=0.022

Gas rate G_s=66.01 kmoles/hr-m^2

X_1,X_2,Y_1,Y_2 are defined as solute free basis

The liquid rate L_s in kmoles/hr-m^2 is:

Options :

76439042045. ✖ 32.61

76439042046. ✖ 82.61

76439042047. ✖ 52.61

76439042048. ✔ 72.61

Question Number : 113 Question Id : 76439010537 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the following steam reforming reaction of methane,

$2CH_4 + 3H_2O \rightarrow CO + CO_2 + 7H_2$

The limiting reactant is:

Options :

76439042049. ✖ Steam

76439042050. ✖ Carbon monoxide

76439042051. ✖ Carbon dioxide

76439042052. ✔ Methane

Question Number : 114 Question Id : 76439010538 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Carbon tetrachloride is made as follows:

$CS_2 + 3Cl_2 \rightarrow CCl_4 + S_2Cl_2$

The product gases are found to contain

Product	CCl_4	S_2Cl_2	CS_2	Cl_2
Mole (%)	23.3	23.3	1.4	32.0

Percentage conversation of the limiting reactant is:

Options :

76439042053. ✖ 100%

76439042054. ✔ 94.33%

76439042055. ✖ 84.33%

76439042056. ✖ 74.33%

Question Number : 115 Question Id : 76439010539 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

. Sulphur dioxide reacts with pure oxygen to form sulphur trioxide. The product analysis is given as follows:

Constituent	Mole fraction
Sulphur dioxide	0.235
Sulphur trioxide	0.353
Oxygen	0.412

The average molecular weight of the products is:

Options :

76439042057. ✔ 56.46

76439042058. ✖ 76.43

76439042059. ✖ 36.46

76439042060. ✖ 46.46

Question Number : 116 Question Id : 76439010540 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Coal tar produced by high temperature carbonization of coal is the main source of

Options :

76439042061. ✖ Aliphatic compounds

76439042062. ✔ Aromatic compounds

76439042063. ✖ Paraffins

76439042064. ✖ Cycloalkane

Question Number : 117 Question Id : 76439010541 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Glycol is added to gasoline as an

Options :

76439042065. ✖ Anti-knocking agent

76439042066. ✔ Anti icing agent

76439042067. ✖ Anti-gumming agent

76439042068. ✖ Anti-foaming agent

Question Number : 118 Question Id : 76439010542 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Proper arrangement of the petroleum fractions based on their boiling points is

Options :

76439042069. ✔ Lubricating oil > Diesel > Petrol > LPG

76439042070. ✖ Lubricating oil > Petrol > Diesel > LPG

76439042071. ✖ Petrol > Lubricating oil > Diesel > LPG

76439042072. ✖ Petrol > Diesel > LPG > Lubricating oil

Question Number : 119 Question Id : 76439010543 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In petroleum refining, the process used for the conversion of hydrocarbons to aromatics is

Options :

76439042073. ✖ Catalytic cracking

76439042074. ✔ Catalytic reforming

76439042075. ✖ Hydrotreating

76439042076. ✖ Alkylation

Question Number : 120 Question Id : 76439010544 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In fluid catalytic cracking unit, the nature of the reactions occurring in the reactor and the regenerator is

Options :

76439042077. ✖ Reactor -exothermic, regenerator-exothermic

76439042078. ✖ Reactor -exothermic, regenerator-endothermic

76439042079. ✔ Reactor -endothermic, regenerator-exothermic

76439042080. ✖ Reactor -endothermic, regenerator-endothermic

Question Number : 121 Question Id : 76439010545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the products in group I , with the raw materials in Group II

Group I	Group II
P-Nylon 6:6 Q-Terylene	i. Chlorodifluoromethane ii. Dimethyl terephthalate and ethylene glycol iii. Acetylene and hydrogen cyanide iv. Hexamethylene diamine and adipic acid

Options :

76439042081. ✖ P-(iii), Q- (iv)

76439042082. ✖ P-(iv), Q- (iii)

76439042083. ✔ P-(iv), Q- (ii)

76439042084. ✖ P-(i), Q- (ii)

Question Number : 122 Question Id : 76439010546 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Chemical name of natural rubber is

Options :

76439042085. ✔ Cis- 1,4-Polyisoprene

76439042086. ✖ Trans-1,4-Polyisoprene

76439042087. ✖ 1,2-Polyisoprene

76439042088. ✖ 3,4-Polyisoprene

Question Number : 123 Question Id : 76439010547 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which polymers occur naturally?

Options :

76439042089. ✔ Starch and Cellulose

76439042090. ✖ Starch and Nylon

76439042091. ✖ Proteins and Nylon

76439042092. ✖ Proteins and PVC

Question Number : 124 Question Id : 76439010548 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In desalination of water by reverse osmosis, the external pressure used

Options :

76439042093. ✖ Shall be less than osmotic pressure

76439042094. ✔ Should be more than osmotic pressure

76439042095. ✖ Should be equal to osmotic pressure

76439042096. ✖ Is not related to osmotic pressure

Question Number : 125 Question Id : 76439010549 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Zeolite used in water softening process is regenerated by washing with

Options :

76439042097. ✔ Brine

76439042098. ✖ Chloramines

76439042099. ✖ Sodium bisulphate

76439042100. ✖ Liquid chloramines

Question Number : 126 Question Id : 76439010550 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Lime - Soda treatment of hard water

Options :

76439042101. ✖ Removes on temporary hardness

76439042102. ✖ Removes only permanent hardness

76439042103. ✔ Removes both temporary and permanent hardness

76439042104. ✖ Adjusts pH but does not remove either temporary or permanent hardness

Question Number : 127 Question Id : 76439010551 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Principle raw materials for the manufacture of urea are

Options :

76439042105. ✔ CO_2 and NH_3

76439042106. ✖ CO_2 and HNO_3

76439042107. ✖ CO and NH_3

76439042108. ✖ CO_2 and N_2

Question Number : 128 Question Id : 76439010552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Producer gas mainly consists of

Options :

76439042109. ✖ CO, H_2

76439042110. ✔ CO, CO_2, N_2

76439042111. ✖ H_2, CH_4

76439042112. ✖ C_2H_2, CO_2, H_2

Question Number : 129 Question Id : 76439010553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the process in Group I, with the products in Group II

Group I	Group II
P-DCDA process Q-Mercury cell	i. Sodium Hydroxide ii. Sulphuric acid iii. Sodium carbonate iv. Nitric acid

Options :

76439042113. ✖ P- (i), Q- (iv)

76439042114. ✖ P- (i), Q- (iii)

76439042115. ✖ P- (ii), Q- (iii)

76439042116. ✔ P- (ii), Q- (i)

Question Number : 130 Question Id : 76439010554 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Raw materials for the manufacture of calcium carbide are

Options :

76439042117. ✔ Lime stone and coke

76439042118. ✖ Lime stone and slaked lime

76439042119. ✖ Lime stone and sand

76439042120. ✖ Lime stone and caustic soda

Question Number : 131 Question Id : 76439010555 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

5-10-5 mixed fertilizer contains

Options :

76439042121. ✖ 5 wt%, P_2O_5,10% N_2, 5% K_2O

76439042122. ✔ 5 wt%, N_2, 10% P_2O_5,5%K_2O

76439042123. ✖ 5 wt%, N_2, 10% P_2O_5,85%K_2O

76439042124. ✖ 10 wt%, N_2, 10% P_2O_5, 5%K_2O

Question Number : 132 Question Id : 76439010556 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Cement mainly consists of

Options :

76439042125. ✔ Cao, SiO_2, Al_2O_3

76439042126. ✖ Mgo, SiO_2, K_2O

76439042127. ✖ Al_2O_3, Mgo, Fe_2O_3

76439042128. ✖ Cao, Mgo, K_2O

Question Number : 133 Question Id : 76439010557 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Oil preferred for paint manufacture is

Options :

76439042129. ✔ Drying Oil

76439042130. ✖ Non drying oil

76439042131. ✖ Semi drying oil

76439042132. ✖ Saturated oil

Question Number : 134 Question Id : 76439010558 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

At low Reynolds number

Options :

76439042133. ✖ Viscous forces are unimportant and gravity forces control

76439042134. ✖ Viscous forces control and gravity forces are unimportant

76439042135. ✔ Viscous forces control and internal forces are unimportant

76439042136. ✖ Gravity forces control and viscos forces are unimportant

Question Number : 135 Question Id : 76439010559 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the ratio of the velocity at the axis of the pipe to the average velocity of flow in case

of pipe flow under viscous condition?

Options :

76439042137. ✖ 0.5

76439042138. ✖ 0.67

76439042139. ✖ 1

76439042140. ✔ 2

Question Number : 136 Question Id : 76439010560 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The head loss in a turbulent flow in a pipe varies

Options :

76439042141. ✖ as velocity

76439042142. ✖ as $(\text{velocity})^2$

76439042143. ✔ Inversely as the square of diameter

76439042144. ✖ Inversely as the velocity

Question Number : 137 Question Id : 76439010561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Friction factor for the hydraulically smooth pipe at N_{Re}=2100 is f_1. If the pipe is further smoothened (i.e. roughness is reduced), the friction factor at the same value of N_{Re}, will

Options :

76439042145. ✔ Increase

76439042146. ✖ Decrease

76439042147. ✖ Remain uncharged

76439042148. ✖ Increase or decrease depending on the pipe diameter

Question Number : 138 Question Id : 76439010562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following flow measuring devices is an area meter?

Options :

76439042149. ✖ Venturi meter

76439042150. ✖ Orifice meter

76439042151. ✖ Anemometer

76439042152. ✔ Rotameter

Question Number : 139 Question Id : 76439010563 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Cavitation occurs in a centrifugal pump when the suction pressure is

Options :

76439042153. ✔ less than the vapour pressure of the liquid at that temperature

76439042154. ✖ greater than the vapour pressure of the liquid at that temperature

76439042155. ✖ equal to the vapour pressure of the liquid at that temperature

76439042156. ✖ equal to the developed heat at that temperature

Question Number : 140 Question Id : 76439010564 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Purpose of relief in a reciprocating pump is to

Options :

76439042157. ✔ protect the pump against developing excessive pressure

76439042158. ✖ facilitate unidirectional flow of liquid

76439042159. ✖ reduce the discharge pressure

76439042160. ✖ control the rate of discharge

Question Number : 141 Question Id : 76439010565 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The ratio of the wall drag to the form drag in the Stoke's law range (for motion of spherical particles in a stationary fluid) is

Options :

76439042161. ✖ 0.5

76439042162. ✖ 1

76439042163. ✔ 2

76439042164. ✖ 0.33

Question Number : 142 Question Id : 76439010566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Bed pressure drop in an air fluidised bed catalyst particle (ρ_p= 200kg/m^3.D_p =0.05cm) of 60cm bed depth and bed porosity of 0.5 expressed in cm of water (manometer) is

Options :

76439042165. ✖ 90

76439042166. ✖ 60

76439042167. ✔ 45

76439042168. ✖ 30

Question Number : 143 Question Id : 76439010567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The ratio of kinematic viscosity to thermal diffusivity is called the _____ number

Options :

76439042169. ✖ Peclet

76439042170. ✔ Prandtl

76439042171. ✖ Stanton

76439042172. ✖ Nusselt

Question Number : 144 Question Id : 76439010568 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the thermal conductivity of a wall material is independent of temperature, the steady state temperature distribution in the very large thin plane wall having steady, uniform surface temperature follows ____law

Options :

76439042173. ✖ Hyperbolic

76439042174. ✖ Parabolic

76439042175. ✔ Linear

76439042176. ✖ Logarithmic

Question Number : 145 Question Id : 76439010569 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

if ΔT_1 and ΔT_2 are temperature approaches of a heat exchanger, logarithmic mean temperature difference (LMTD) is given by the following relation

Options :

76439042177. ✔ $\frac{\Delta T_1 - \Delta T_2}{ln\left(\frac{\Delta T_1}{\Delta T_2}\right)}$

76439042178. ✖ $\frac{\Delta T_1 - \Delta T_2}{ln\left(\frac{\Delta T_2}{\Delta T_1}\right)}$

76439042179. ✖ $\frac{\Delta T_1 + \Delta T_2}{ln\left(\frac{\Delta T_1}{\Delta T_2}\right)}$

76439042180. ✖ $\frac{\Delta T_2 - \Delta T_1}{ln\left(\frac{\Delta T_1}{\Delta T_2}\right)}$

Question Number : 146 Question Id : 76439010570 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Nusselt number is the ratio of

Options :

76439042181. ✖ Temperature gradient at the wall to heat flux at the wall

76439042182. ✖ Heat flux at the wall to that across the entire pipe

76439042183. ✔ Temperature gradient at the wall to that across the entire pipe

76439042184. ✖ Difference of the temperature to the temperature gradient at the wall

Question Number : 147 Question Id : 76439010571 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Heat transfer coefficient equation for forced convection, $Nu= 0.023\ (Re)^{0.8}\ (Pr)^{n}$

is not valid if the value of

Options :

76439042185. ✖ n=0.4 is used for heating

76439042186. ✖ n=0.3 is used for cooling

76439042187. ✖ Reynolds number for the flow involved is > 10000

76439042188. ✔ Reynolds number for the flow involved is < 2100

Question Number : 148 Question Id : 76439010572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The thermal radioactive flux from a surface of emissivity =0.4 is 22.68 KW/m^2. The approximate surface temperature (k) is

(Stefan- Boltzman constant =$5.67x10^{-8}\ W/m^2.k^4$)

Options :

76439042189. ✔ 1000

76439042190. ✖ 727

76439042191. ✖ 800

76439042192. ✖ 1200

Question Number : 149 Question Id : 76439010573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In a multipass shell and tube heat exchanger, tube side return pressure loss is equal to _____ the velocity head.

Options :

76439042193. ✖ Twice

76439042194. ✔ Four times

76439042195. ✖ Square root of

76439042196. ✖ Square of

Question Number : 150 Question Id : 76439010574 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Liquid entrainer in evaporators are caused due to

Options :

76439042197. ✖ High rate of evaporation

76439042198. ✖ High rate of heat transfer

76439042199. ✔ Foaming of the solution

76439042200. ✖ Low pressure in the evaporator

Question Number : 151 Question Id : 76439010575 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Economy of a multiple effect of evaporator is not influenced much by the

Options :

76439042201. ✔ Boiling point elevations

76439042202. ✖ Temperature of the feed

76439042203. ✖ Rate of heat transfer

76439042204. ✖ Ratio of the weight of the thin liquor to thick liquor

Question Number : 152 Question Id : 76439010576 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Rittinger's law states that the work required in crushing is proportional to

Options :

76439042205. ✖ The number of particles obtained in product

76439042206. ✔ The new surface created

76439042207. ✖ The surface area of the feed particle

76439042208. ✖ The number of particles crushed

Question Number : 153 Question Id : 76439010577 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In fluid -energy mill most of the reduction is caused by

Options :

76439042209. ✔ Interparticle attrition

76439042210. ✖ Compression

76439042211. ✖ Impact

76439042212. ✖ Cutting

Question Number : 154 Question Id : 76439010578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Ribbon blenders are used for the mixing of

Options :

76439042213. ✖ Heavy liquids

76439042214. ✔ Dry powers

76439042215. ✖ Thick pastes

76439042216. ✖ Liquid and solids

Question Number : 155 Question Id : 76439010579 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The screen effectiveness

Options :

76439042217. ✖ Increase with increase in the capacity of the screen

76439042218. ✔ Decrease with increase in the capacity of the screen

76439042219. ✖ Increase linearly with increase in the size of the screen

76439042220. ✖ Remains unaffected with change in the capacity of the screen

Question Number : 156 Question Id : 76439010580 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Sauter mean diameter is nothing but the

Options :

76439042221. ✖ Mass mean diameters

76439042222. ✖ Density mean diameter

76439042223. ✔ Volume mean diameter

76439042224. ✖ Arithmetic mean diameter

Question Number : 157 Question Id : 76439010581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following conveyors cannot be recommended for transportation of abrasive materials?

Options :

76439042225. ✗ Belt conveyor

76439042226. ✗ Apron conveyor

76439042227. ✓ Flight conveyor

76439042228. ✗ Chain conveyor

Question Number : 158 Question Id : 76439010582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identity the correct statement regarding the electrostatic precipitator

Options :

76439042229. ✗ Minimum particle size removal is <0.5µm

76439042230. ✓ It can be operated at high temperature

76439042231. ✗ It has low maintenance cost

76439042232. ✗ It does not cause any fouling problem

Question Number : 159 Question Id : 76439010583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Pine oil used in froth floatation technique acts as_____

Options :

76439042233. ✗ Collector

76439042234. ✗ Modifies

76439042235. ✓ Frother

76439042236. ✗ Activator

Question Number : 160 Question Id : 76439010584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Addition of filter aid to the slurry before filtration is done to _____ of the cake

Options :

76439042237. ✖ Increase the compressibility coefficient

76439042238. ✔ Increase the porosity

76439042239. ✖ Decrease the compressibility coefficient

76439042240. ✖ Decrease the porosity

Question Number : 161 Question Id : 76439010585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A gas performs the maximum work, when it expands

Options :

76439042241. ✖ Isothermally

76439042242. ✔ Isobarically

76439042243. ✖ Adiabatically

76439042244. ✖ Non-uniformly

Question Number : 162 Question Id : 76439010586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A closed system is cooled reversibly from 100^{o} C to 50^{o} C. if no work is done on the system

Options :

76439042245. ✖ The internal energy decreases and its entropy increases

76439042246. ✖ It's internal energy increases and its entropy decreases

76439042247. ✖ It's internal energy and its entropy both increases

76439042248. ✔ Its internal energy and its entropy both decreases

Question Number : 163 Question Id : 76439010587 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The internal energy of an ideal gas does not change is

Options :

76439042249. ✖ A reversible isometric process

76439042250. ✖ A reversible isobaric process

76439042251. ✖ A reversible adiabatic process

76439042252. ✔ A reversible isothermal process

Question Number : 164 Question Id : 76439010588 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A system is said to be at equilibrium, if the entropy of the system has reached to

Options :

76439042253. ✖ Minimum value

76439042254. ✖ Zero value

76439042255. ✔ Maximum value

76439042256. ✖ Negative value

Question Number : 165 Question Id : 76439010589 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

If the door of an operating refrigerator in a room is opened

Options :

76439042257. ✖ The temperature of the room will be lowered

76439042258. ✔ The temperature of the room will be raised

76439042259. ✖ The temperature of the room will not be affected

76439042260. ✖ The temperature will go up is the winter and it will go down is summer

Question Number : 166 Question Id : 76439010590 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Pick the wrong statement

Options :

76439042261. ✖ The equilibrium constant of a reaction is dimensionless

76439042262. ✖ The equilibrium constant of an exothermic reaction decrease with increase in temperature

76439042263. ✖ The equilibrium constant of an endothermic reaction increase with increase in temperature

76439042264. ✔ The equilibrium constant of a reaction depends on temperature as well as pressure

Question Number : 167 Question Id : 76439010591 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The catalyst in a first order chemical reaction changes the

Options :

76439042265. ✖ Equilibrium constant

76439042266. ✔ Activation energy

76439042267. ✖ Heat of formation of the product

76439042268. ✖ Heat of reaction

Question Number : 168 Question Id : 76439010592 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A first order reaction requires two equal sized CSTR. The conversion is

Options :

76439042269. ✖ Less when they are connected in series

76439042270. ✔ More when they are connected in series

76439042271. ✖ More when they are connected in parallel

76439042272. ✖ Same whether they are connected in series or in parallel

Question Number : 169 Question Id : 76439010593 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Pick out the wrong statement

Options :

76439042273. ✖ The integral method of analysing kinetic data is used when the data is scattered

76439042274. ✖ The differential method of analysing kinetic data requires more accurate or larger amounts of data

76439042275. ✔ When the reaction rate is independent of temperature, the reaction is said to be zero order

76439042276. ✖ The ratio of volumes of plug flow reactor to that of mixed reactor is always less than one for identical feed composition, flow rate, conversion and for all positive reaction orders

Question Number : 170 Question Id : 76439010594 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Knowledge of wet bulb and dry bulb temperature is needed for_____ operation.

Options :

76439042277. ✖ Distillation

76439042278. ✖ Filtration

76439042279. ✔ Humidification

76439042280. ✖ Leaching

Question Number : 171 Question Id : 76439010595 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Interphase mass transfer is not present in_____

Options :

76439042281. ✖ Distillation

76439042282. ✖ Extraction

76439042283. ✖ Humidification

76439042284. ✔ Homogeneous chemical reaction

Question Number : 172 Question Id : 76439010596 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Wilke-chang equation is used to predict_____

Options :

76439042285. ✖ Diffusivity of binary gas mixtures

76439042286. ✔ Liquid diffusivity

76439042287. ✖ Reaction rate constant

76439042288. ✖ Thermal conductivity of metals

Question Number : 173 Question Id : 76439010597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

At minimum reflux ratio, the number plates needed for a given separation is_____

Options :

76439042289. ✖ Zero

76439042290. ✖ Minimum

76439042291. ✖ Optimum

76439042292. ✔ Infinity

Question Number : 174 Question Id : 76439010598 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Rayleigh's equation is applicable for_____

Options :

76439042293. ✖ Continuous fraction

76439042294. ✔ Simple distillation

76439042295. ✖ Flash vaporization

76439042296. ✖ Steam distillation

Question Number : 175 Question Id : 76439010599 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Structured packing can be arranged by using_____

Options :

76439042297. ✖ Rasching rings

76439042298. ✖ Berl saddles

76439042299. ✖ Pall rings

76439042300. ✔ Perforated corrugated metal sheets

Question Number : 176 Question Id : 76439010600 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The Principal operation carried out in cooling towers is_____

Options :

76439042301. ✖ Absorption

76439042302. ✖ Extraction

76439042303. ✖ Adsorption

76439042304. ✔ Humidification

Question Number : 177 Question Id : 76439010601 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Dryer used for evaporating solutions entirely to dryness is_____

Options :

76439042305. ✖ Fluid bed dryer

76439042306. ✖ Tray dryer

76439042307. ✔ Spray dryer

76439042308. ✖ Screw conveyer dryer

Question Number : 178 Question Id : 76439010602 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Pressure measurement in corrosive fluids can be made using_____

Options :

76439042309. ✖ McLeod gage

76439042310. ✔ Diaphragm seal

76439042311. ✖ Thermionic gage

76439042312. ✖ Bourdon spring

Question Number : 179 Question Id : 76439010603 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Meassurement of liquid density is possible by__

Options :

76439042313. ✔ Hydrometer

76439042314. ✖ Hygrometer

76439042315. ✖ Wheatstone bridge

76439042316. ✖ Bimetal element

Question Number : 180 Question Id : 76439010604 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A thermopile contains_____

Options :

76439042317. ✖ Platinum resistance element

76439042318. ✔ Thermocouples

76439042319. ✖ Pressure springs in series

76439042320. ✖ Bimetal element

Question Number : 181 Question Id : 76439010605 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Pressure difference between two-point can be measured using_____

Options :

76439042321. ✖ Pirani gage

76439042322. ✖ Bubbler system

76439042323. ✔ Manometer

76439042324. ✖ Purge system

Question Number : 182 Question Id : 76439010606 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Lead wires that can be used with copper-constantan thermocouple are_____

Options :

76439042325. ✔ Copper-constantan

76439042326. ✖ Iron-constantan

76439042327. ✖ Chromel-alumel

76439042328. ✖ Platinum-rhodium

Question Number : 183 Question Id : 76439010607 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The symbol ~~XXX~~ is used to represent _____ in the instrumentation diagram.

Options :

76439042329. ✖ Process-connecting line

76439042330. ✖ Pneumatic line

76439042331. ✔ Capillary line

76439042332. ✖ Electric line

Question Number : 184 Question Id : 76439010608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Operation of pneumatic controls possible by manipulating_____

Options :

76439042333. ✔ Compressed air

76439042334. ✖ Electrical current

76439042335. ✖ Electronic circuit

76439042336. ✖ Oil pressure

Question Number : 185 Question Id : 76439010609 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which control action minimizes oscillations and eliminates offset?

Options :

76439042337. ✖ Proportional

76439042338. ✖ PI

76439042339. ✖ PD

76439042340. ✔ PID

Question Number : 186 Question Id : 76439010610 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Global biodiversity hotspot in India is_____

Options :

76439042341. ✖ Mamallapuram

76439042342. ✖ Pulicat lake

76439042343. ✔ Western ghats

76439042344. ✖ Nalgonda

Question Number : 187 Question Id : 76439010611 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Effective control of particulate matter in air can be done by using_____

Options :

76439042345. ✗ sedimentation

76439042346. ✓ electrostatic precipitation

76439042347. ✗ flocculation

76439042348. ✗ coagulation

Question Number : 188 Question Id : 76439010612 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The addition of domestic sewage in water bodies result in_____

Options :

76439042349. ✗ smog formation

76439042350. ✓ eutrophication

76439042351. ✗ thermal pollution

76439042352. ✗ acid rain

Question Number : 189 Question Id : 76439010613 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Landfills are used for the disposal of_____

Options :

76439042353. ✗ waste water

76439042354. ✓ solid waste

76439042355. ✗ costlier metal

76439042356. ✗ unused hydrocarbons

Question Number : 190 Question Id : 76439010614 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a constituent step in integrated solid waste management?

Options :

76439042357. ✖ Collection of solid waste

76439042358. ✖ Disposal of solid waste

76439042359. ✔ Cooling tower

76439042360. ✖ Waste utilization and recycling

Question Number : 191 Question Id : 76439010615 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Molasses, being a waste product from sugar industries, is used as a raw material in the production of _____

Options :

76439042361. ✖ formalin

76439042362. ✔ ethyl alcohol

76439042363. ✖ vinegar

76439042364. ✖ acetic acid

Question Number : 192 Question Id : 76439010616 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Central Pollution Control Board was constituted under the_____

Options :

76439042365. ✖ Air (prevention and control of pollution) Act of 1981

76439042366. ✔ Water (prevention and control of pollution) Act of 1974

76439042367. ✖ Wild life protection Act of 1972

76439042368. ✖ National water policy, 2002

Question Number : 193 Question Id : 76439010617 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Solid fuel is_____

Options :

76439042369. ✖ Naphtha

76439042370. ✔ Coal

76439042371. ✖ Coke oven gas

76439042372. ✖ Diesel

Question Number : 194 Question Id : 76439010618 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Fuel used in thermal power plants is_____

Options :

76439042373. ✖ Thoria

76439042374. ✔ Coal

76439042375. ✖ Natural gas

76439042376. ✖ Fire wood

Question Number : 195 Question Id : 76439010619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Blast furnace is used in_____

Options :

76439042377. ✖ Thermal power plants

76439042378. ✔ Steel plants

76439042379. ✖ Oxygen production

76439042380. ✖ Nuclear power plants

Question Number : 196 Question Id : 76439010620 Question Type : MCQ Option Shuffling : Yes Display Question Number

: Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Combustion products of natural gas are____

Options :

76439042381. ✔ Carbon dioxide and water vapour

76439042382. ✖ Nitrogen oxide and water vapour

76439042383. ✖ Sulphur dioxide and water vapour

76439042384. ✖ Water vapour and liquid water

Question Number : 197 Question Id : 76439010621 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Material useful constructing furnaces is_____

Options :

76439042385. ✖ Coal tar

76439042386. ✔ Dolomite

76439042387. ✖ Copper

76439042388. ✖ Nitrogen

Question Number : 198 Question Id : 76439010622 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Renewable energy source is_____

Options :

76439042389. ✖ Energy from natural gas

76439042390. ✔ Tidal energy

76439042391. ✖ Petroleum energy

76439042392. ✖ Energy from coal

Question Number : 199 Question Id : 76439010623 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Obtaining electricity from Srisailam dam is an example of_____

Options :

76439042393. ✖ Ocean energy

76439042394. ✖ Tidal energy

76439042395. ✔ Hydel energy

76439042396. ✖ Wave energy

Question Number : 200 Question Id : 76439010624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Energy conservation can be accomplished_____

Options :

76439042397. ✔ By insulating all steam lines

76439042398. ✖ By increasing leakage of cold gases

76439042399. ✖ By enhancing friction in piping network

76439042400. ✖ By allowing steam to escape into surroundings