Telangana State Council Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name:	Metallurgical Engineering 11th May 2019 Shift1
Subject Name:	Metallurgical Engineering
Creation Date:	2019-05-11 13:35:20
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?:	No

Metallurgical Engineering

Group Number :	1
Group Id :	89465823
Group Maximum Duration :	0
Group Minimum Duration :	180
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	200

Mathematics

Section Id :	89465887
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	50
Number of Questions to be attempted:	50
Section Marks:	50
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	89465897
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 8946584409 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✖ 1

3. ✔ -1

4. ✖ 11

Question Number : 2 Question Id : 8946584410 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ AB

2. ✖ $A-B$

3. ✖ 0

4. ✔ $A+B$

Question Number : 3 Question Id : 8946584411 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ -5

2. ✖ 5

3. ✖ 3

4. ✖ 1

Question Number : 4 Question Id : 8946584412 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $A(\alpha,\beta)$

2. ✖ $A(\alpha,-\beta)$

3. ✔ $A(-\alpha,-\beta)$

4. ✖ $A(-\alpha,\beta)$

Question Number : 5 Question Id : 8946584413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 6 Question Id : 8946584414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\frac{1-2ac}{2c+abc+1}$

2. ✖ $\frac{1-2ac}{2c-abc-1}$

3. ✖ $\frac{1+2ac}{2c-abc-1}$

4. ✔ $\frac{1+2ac}{2c+abc+1}$

Question Number : 7 Question Id : 8946584415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 1

2. ✖ $\frac{1}{2}$

3. ✔ $\frac{-1}{2}$

4. ✖ 0

Question Number : 8 Question Id : 8946584416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\sqrt{3}$

2. ✖ $\frac{\sqrt{3}}{2}$

3. ✖ 1

4. ✖ $\frac{1}{2}$

Question Number : 9 Question Id : 8946584417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\frac{7}{24}$

2. ✖ $\frac{24}{7}$

3. ✖ $\frac{3}{4}$

4. ✖ 1

Question Number : 10 Question Id : 8946584418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 50°

2. ✖ 30°

3. ✖ 16°

4. ✔ 8°

Question Number : 11 Question Id : 8946584419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\left(\frac{63}{16}, 15\right)$

2. ✖ $\left(\frac{16}{63}, 15\right)$

3. ✖ $\left(\frac{63}{16}, 5\right)$

4. ✖ $\left(\frac{16}{63}, 5\right)$

Question Number : 12 Question Id : 8946584420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ unique solution $x=2$

2. ✖ two solutions $x=1,2$

3. ✖ no solution

4. ✖ infinite number of solutions

Question Number : 13 Question Id : 8946584421 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 30°

2. ✖ 90°

3. ✔ 60°

4. ✖ 45°

Question Number : 14 Question Id : 8946584422 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\log(3+\sqrt{10})$

2. ✖ $\log(3-\sqrt{10})$

3. ✖ $\log(6+\sqrt{10})$

4. ✖ 1

Question Number : 15 Question Id : 8946584423 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

2. ✖ $|z_1+z_2|\le|z_1|+|z_2|$

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

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

Question Number : 16 Question Id : 8946584424 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $2\sqrt{2}+2i$

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

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

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

Question Number : 17 Question Id : 8946584425 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 11

2. ✖ 5

3. ✖ -7

4. ✔ -1

Question Number : 18 Question Id : 8946584426 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $5(a^2+b^2)=1$

2. ✖ $a^2+b^2=\sqrt{5}$

3. ✔ $a^2+b^2=1$

4. ✖ $\sqrt{a^2+b^2}=5$

Question Number : 19 Question Id : 8946584427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ 14 cm

2. ✖ $\sqrt{304}$ cm

3. ✖ 4 cm

4. ✖ $\sqrt{124}$ cm

Question Number : 20 Question Id : 8946584428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\frac{x-2019}{e^x}$

2. ✖ $\frac{2019-x}{e^x}$

3. ✖ $\frac{x-2020}{e^x}$

4. ✔ $\frac{2020-x}{e^x}$

Question Number : 21 Question Id : 8946584429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 22 Question Id : 8946584430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✖ U

3. ✔ $-U$

4. ✖ $2U$

Question Number : 23 Question Id : 8946584431 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 3

2. ✔ 75

3. ✖ $\frac{1}{3}$

4. ✖ $\frac{1}{75}$

Question Number : 24 Question Id : 8946584432 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $1<x<2$

2. ✖ all $x\in\mathbb{R}$

3. ✔ $\mathbb{R}-[1, 2]$

4. ✖ $x\geq 2$

Question Number : 25 Question Id : 8946584433 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ e^2

2. ✖ ∞

3. ✖ 1

4. ✔ 2

Question Number : 26 Question Id : 8946584434 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 2

2. ✖ 4

3. ✖ e

4. ✔ 3

Question Number : 27 Question Id : 8946584435 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ 5100

2. ✖ 1

3. ✖ 5050

4. ✖ $\frac{1}{2}$

Question Number : 28 Question Id : 8946584436 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✖ $\frac{1}{2}$

3. ✔ $\frac{9}{16}$

4. ✖ $\frac{9}{8}$

Question Number : 29 Question Id : 8946584437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\frac{1}{6}$

2. ✖ $\frac{1}{5}$

3. ✖ 1

4. ✖ 6

Question Number : 30 Question Id : 8946584438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✔ $\frac{22}{7} - \pi$

3. ✖ $\frac{2}{105}$

4. ✖ $\frac{71}{15} - \frac{3\pi}{4}$

Question Number : 31 Question Id : 8946584439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 1

2. ✖ $\frac{8}{19}$

3. ✖ $\frac{35}{4}$

4. ✔ $\frac{27}{6}$

Question Number : 32 Question Id : 8946584440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\frac{96}{5}$

2. ✔ $\frac{96\pi}{5}$

3. ✖ $\frac{32\pi}{5}$

4. ✖ $\frac{32}{5}$

Question Number : 33 Question Id : 8946584441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $\frac{\pi^2}{32}$

2. ✖ $\frac{\pi}{32}$

3. ✖ $\frac{\pi^2}{16}$

4. ✖ $\frac{\pi}{16}$

Question Number : 34 Question Id : 8946584442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 5

2. ✖ $\frac{20}{3}$

3. ✔ $\frac{5}{3}$

4. ✖ 1

Question Number : 35 Question Id : 8946584443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ infinitely many solutions

2. ✖ no solution

3. ✖ a unique solution

4. ✖ exactly two solutions

Question Number : 36 Question Id : 8946584444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $a = 1,\ b = \frac{3}{2}$

2. ✖ $a = \frac{3}{2},\ b = 1$

3. ✔ $a = \frac{2}{3},\ b = 1$

4. ✖ $a = 1,\ b = \frac{2}{3}$

Question Number : 37 Question Id : 8946584445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

3. ✖ $y = c_1\sin x + c_2\cos x + c_3e^{-3x} + c_4e^{-2x}$

4. ✖ $y = c_1\sin x + c_2\cos x + c_3e^{3x} + c_4e^{2x}$

Question Number : 38 Question Id : 8946584446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $-xe^{2x} \cos 3x$

2. ✖ $xe^{2x} \cos 3x$

3. ✖ $-xe^{2x} \sin 3x$

4. ✖ $xe^{2x} \sin 3x$

Question Number : 39 Question Id : 8946584447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 40 Question Id : 8946584448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Then, y(1) is equal to _____.

Options :

1. ✖ $\frac{2}{e}-\frac{2}{e^2}$

2. ✔ $2e^{-2}$

3. ✖ $2-\frac{2}{e}$

4. ✖ $2-2e$

Question Number : 41 Question Id : 8946584449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 42 Question Id : 8946584450 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $y=\frac{1}{ce^{x}-\sin x}$

2. ✖ $y=ce^{-x}-e^{x}\sin x$

3. ✖ $y=ce^{-x}-\sin x$

4. ✔ $y=\frac{1}{ce^{-x}-\sin x}$

Question Number : 43 Question Id : 8946584451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

is _____.

Options :

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

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

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

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

Question Number : 44 Question Id : 8946584452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 45 Question Id : 8946584453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

_____.

Options :

1. ✔ 0

2. ✖ 3

3. ✖ ∞

4. ✖ $\dfrac{1}{2}$

Question Number : 46 Question Id : 8946584454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 47 Question Id : 8946584455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Question Number : 48 Question Id : 8946584456 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0

2. ✖ $\frac{\pi}{2x}$

3. ✖ $\frac{1}{x}$

4. ✔ $\frac{\pi}{2}$

Question Number : 49 Question Id : 8946584457 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

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

Options :

1. ✖ $a_n = 0$, for all $n \ge 0$

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

3. ✖ $b_n \ne 0$, for all $n \ge 1$

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

Question Number : 50 Question Id : 8946584458 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

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

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

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

Physics

Section Id :	89465888
Section Number :	2
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	25
Number of Questions to be attempted:	25
Section Marks:	25
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	89465898
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 8946584459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dimensional formula for gravitational constant is_____.

Options :

1. ✔ $L^3T^{-2}M^{-1}$

2. ✖ $L^3T^2M^{-1}$

3. ✖ $L^2T^3M^{-2}$

4. ✖ $L^3T^1M^{-3}$

Question Number : 52 Question Id : 8946584460 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ torque and work

2. ✖ angular momentum and work

3. ✖ energy and Young's modules

4. ✔ light year and wavelength

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

Question Number : 53 Question Id : 8946584461 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not correct?

Options :

1. ✖ $j \times i = -k$

2. ✖ $k \times j = -i$

3. ✖ $i \times k = -j$

4. ✔ $k \times i = -j$

Question Number : 54 Question Id : 8946584462 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $\sqrt{0.89}$

2. ✖ 0.2

3. ✖ 0.3

4. ✔ $\sqrt{0.11}$

Question Number : 55 Question Id : 8946584463 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct?

Options :

1. ✖ $A.B \neq B.A$

2. ✔ $A.(B+C) = A.B + C.A$

3. ✖ $A.B = A.B - A.C$

4. ✖ $A.B = -B.A$

Question Number : 56 Question Id : 8946584464 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ G

2. ✔ GM/R^2

3. ✖ GM/R

4. ✖ GM

Question Number : 57 Question Id : 8946584465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of g is maximum at_____.

Options :

1. ✖ equator

2. ✔ Pole

3. ✖ higher altitudes

4. ✖ at the centre of the earth

Question Number : 58 Question Id : 8946584466 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When the speed of rotation of earth increases your weight_____

Options :

1. ✖ increases

2. ✔ decreases

3. ✖ remains constant

4. ✖ becomes zero

Question Number : 59 Question Id : 8946584467 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The value of G is zero at_____

Options :

1. ✔ nowhere

2. ✖ the centre of the earth

3. ✖ surface of the earth

4. ✖ pole

Question Number : 60 Question Id : 8946584468 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 50%

2. ✖ 100%

3. ✔ 125%

4. ✖ 25%

Question Number : 61 Question Id : 8946584469 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

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

2. ✖ both will reach the ground together

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

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

Question Number : 62 Question Id : 8946584470 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ u/24

2. ✖ u/5

3. ✖ 5u

4. ✔ 25u

Question Number : 63 Question Id : 8946584471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 4:1

2. ✖ $\sqrt{2}$:1

3. ✔ 1:2

4. ✖ 1:16

Question Number : 64 Question Id : 8946584472 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 7 m/s

2. ✖ 9.8 m/s

3. ✖ 4.9 m/s

4. ✔ $\sqrt{9.8}$ m/s

Question Number : 65 Question Id : 8946584473 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

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

Options :

1. $2\Pi b$

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

3. $2\Pi/b$

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

Question Number : 66 Question Id : 8946584474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 1 cm

2. ✖ $\sqrt{2}$ cm

3. ✖ 2 cm

4. ✔ $2\sqrt{2}$ cm

Question Number : 67 Question Id : 8946584475 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ green colour

2. ✖ yellow colour

3. ✔ blue end

4. ✖ red end

Question Number : 68 Question Id : 8946584476 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ 100

2. ✖ 90

3. ✖ 80

4. ✖ 900

Question Number : 69 Question Id : 8946584477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ quality

2. ✖ pitch

3. ✖ intensity

4. ✖ quality, pitch and intensity

Question Number : 70 Question Id : 8946584478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The quality of tone_____

Options :

1. ✖ decreases with loudness

2. ✖ varies inversely as amplitude

3. ✖ varies directly as pitch

4. ✔ depends on the overtones present

Question Number : 71 Question Id : 8946584479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ reversible process

2. ✔ irreversible process

3. ✖ isothermal process

4. ✖ isobaric process

Question Number : 72 Question Id : 8946584480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ CO_2 is a perfect gas

2. ✔ there is continuity of state

3. ✖ there is discontinuity of state

4. ✖ gases like CO_2 and H_2 cannot be liquefied

Question Number : 73 Question Id : 8946584481 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A diesel cycle works at_____

Options :

1. ✖ constant volume

2. ✔ constant pressure

3. ✖ constant temperature

4. ✖ both constant volume and constant temperature

Question Number : 74 Question Id : 8946584482 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ zero to 10 k

2. ✖ 10 k to 20 k

3. ✖ 20 k to 50 k

4. ✖ 50 k alone

Question Number : 75 Question Id : 8946584483 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Propagation of light through fiber core is due to_____

Options :

1. ✖ diffraction

2. ✖ interference

3. ✔ total internal reflection

4. ✖ reflection

	Chemistry
Section Id :	89465889
Section Number :	3
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	25
Number of Questions to be attempted:	25

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

Sub-Section Number: 1
Sub-Section Id: 89465899
Question Shuffling Allowed : Yes

Question Number : 76 Question Id : 8946584484 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following energy orders is correct?

Options :

1. ✔ 6s<4f<5d<6p

2. ✖ 4f<5d<6s<6p

3. ✖ 4f<6s<6p<5d

4. ✖ 6s<6p<5d<4f

Question Number : 77 Question Id : 8946584485 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ Covalent AB

2. ✔ Ionic AB

3. ✖ Covalent AB_2

4. ✖ Ionic AB_2

Question Number : 78 Question Id : 8946584486 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ 0, +1 and -2

2. ✖ +2, +1 and-2

3. ✖ 0, +1 and +2

4. ✖ -2, +1 and -2

Question Number : 79 Question Id : 8946584487 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

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

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

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

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

The elements that belong to same group are _____.

Options :

1. ✖ A and C

2. ✖ C and D

3. ✖ A and D

4. ✔ A and B

Question Number : 80 Question Id : 8946584488 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 0.1 M

2. ✔ 0.025 M

3. ✖ 0.25 M

4. ✖ 0.01 M

Question Number : 81 Question Id : 8946584489 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

.

Options :

1. ✖ 98

2. ✖ 49

3. ✔ 32.66

4. ✖ 24.5

Question Number : 82 Question Id : 8946584490 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the Bronsted acid?

Options :

1. ✖ Cl^-

2. ✖ NH_2^-

3. ✖ CH_3COO^-

4. ✔ NH_4^+

Question Number : 83 Question Id : 8946584491 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The pH of 1 M KOH is ____.

Options :

1. ✖ 12

2. ✖ 11

3. ✔ 14

4. ✖ 13

Question Number : 84 Question Id : 8946584492 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Froth floatation process is used for the _____.

Options :

1. ✖ Oxide ores

2. ✔ Sulphide ores

3. ✖ Chloride ores

4. ✖ Oxide ores and Chloride ores

Question Number : 85 Question Id : 8946584493 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The composition of brass is _____.

Options :

1. ✔ Cu and Zn

2. ✖ Cu and Ni

3. ✖ Cu and Mn

4. ✖ Cu and Fe

Question Number : 86 Question Id : 8946584494 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is correct?

Options :

1. ✖ Cathode is positive terminal in an electrolytic cell

2. ✖ Cathode is negative terminal in a galvanic cell

3. ✔ Reduction occurs at cathode in either of cells

4. ✖ Oxidation occurs at cathode in either of cells

Question Number : 87 Question Id : 8946584495 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ 890 mL of Cl_2 at STP is liberated

2. ✖ 445 mL of O_2 at STP is liberated

3. ✖ 2.5 gm of copper is deposited

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

Question Number : 88 Question Id : 8946584496 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The unit of resistivity is _____.

Options :

1. ✖ Ω

2. ✔ Ω m

3. ✖ Ω /m

4. ✖ $\Omega\ m^2$

Question Number : 89 Question Id : 8946584497 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following metals provide cathodic protection to iron?

Options :

1. ✖ Cu and Ni

2. ✔ Al and Zn

3. ✖ Al and Cu

4. ✖ Co and Ni

Question Number : 90 Question Id : 8946584498 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The chemical composition of rust is _____.

Options :

1. ✖ Fe_3O_4

2. ✖ Fe_3O_3

3. ✔ $Fe_2O_3.\ nH_2O$

4. ✖ $Fe_3O_3.\ xH_2O$

Question Number : 91 Question Id : 8946584499 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

1 ppm of hardness of water is equal to _____.

Options :

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

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

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

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

Question Number : 92 Question Id : 8946584500 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✖ $MgCl_2$ and $CaCl_2$

2. ✖ $Ca(NO_3)_2$ and $Mg(NO_3)_2$

3. ✖ $CaSO_4$ and $MgSO_4$

4. ✔ $Ca(HCO_3)_2$ and $Mg(HCO_3)_2$

Question Number : 93 Question Id : 8946584501 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The basic buffer solution is a mixture of _____.

Options :

1. ✔ $NH_3 + NH_4Cl$

2. ✖ $HCl + NH_4Cl$

3. ✖ $NaCl + NH_4Cl$

4. ✖ $KOH + NH_4Cl$

Question Number : 94 Question Id : 8946584502 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following polymers has amide linkage?

Options :

1. ✖ Terylene

2. ✖ Bakelite

3. ✔ Nylon

4. ✖ PVC

Question Number : 95 Question Id : 8946584503 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The monomer of natural rubber is _____.

Options :

1. ✖ Butadiene

2. ✖ Chloroprene

3. ✖ 2-methyl 1,2 butadiene

4. ✔ 2-methyl 1,3 butadiene

Question Number : 96 Question Id : 8946584504 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a thermo setting?

Options :

1. ✔ Bakelite

2. ✖ Polyethylene

3. ✖ Nylon-6

4. ✖ Natural rubber

Question Number : 97 Question Id : 8946584505 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The composition of water gas is _____.

Options :

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

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

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

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

Question Number : 98 Question Id : 8946584506 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Earth is protected from UV radiation by _____.

Options :

1. ✖ Nitrogen layer

2. ✔ Ozone layer

3. ✖ Carbon dioxide layer

4. ✖ Oxygen layer

Question Number : 99 Question Id : 8946584507 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of following statements is not correct?

Options :

1. ✖ CO is the main air pollutant

2. ✖ All pollutants are not wastes

3. ✔ Water is polluted by dissolved Oxygen

4. ✖ Lichens are pollution indicators

Question Number : 100 Question Id : 8946584508 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Minamata disease is caused due to the presence of _____.

Options :

1. ✖ Cd

2. ✖ Pb

3. ✖ As

4. ✔ Hg

Metallurgical Engineering

Section Id :	89465890
Section Number :	4
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	100
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	894658100
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 8946584509 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following minerals of metal is adequately available in India?

Options :

1. ✔ Aluminium

2. ✖ Copper

3. ✖ Graphite

4. ✖ Uranium

Question Number : 102 Question Id : 8946584510 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ method is one of the principal mineral exploration methods.

Options :

1. ✖ Radioactive

2. ✖ Seismic

3. ✔ Magnetic

4. ✖ Gravitational

Question Number : 103 Question Id : 8946584511 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	**Group B**
a. Collector	I. Pine oil
b. Regulator	II. Copper sulphate
c. Activator	III. Sodium ethyl xanthate
d. Frother	IV. Lime

Options :

1. ✖ a-II, b-III, c-IV, d-I

2. ✖ a-IV, b-II, c-III, d-I

3. ✔ a-III, b-IV, c-II, d-I

4. ✖ a-I, b-III, c-II, d-IV

Question Number : 104 Question Id : 8946584512 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the metals listed in Group A with the corresponding ores given in Group B and find the correct answer.

Group A	Group B
a. Lead	I. Columbite
b. Zinc	II. Casseterite
c. Uranium	III. Galena
d. Niobium	IV. Pitchblende
	V. Sphalerite

Options :

1. ✖ a-III, b-V, c-II, d-IV

2. ✖ a-III, b-II, c-V, d-IV

3. ✔ a-III, b-V, c-IV, d-I

4. ✖ a-III, b-IV, c-V, d-II

Question Number : 105 Question Id : 8946584513 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____metallurgical extraction methods are advantageous for lean and complex ores.

Options :

1. ✖ Pyro

2. ✖ Electro

3. ✖ Powder

4. ✔ Hydro

Question Number : 106 Question Id : 8946584514 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the extraction methods listed in Group A with the metals given in Group B and find the correct answer.

Group A	Group B
a. Roasting followed by carbothermic reduction	I. Ti
b. Electrolysis of fused salt	II. Pb
c. Roasting followed by controlled oxidation	III. Al
d. Halide process	IV. Cu
	V. Au

Options :

1. ✔ a-II, b-III, c-IV, d-I

2. ✖ a-V, b-IV, c-III, d-I

3. ✖ a-II, b-V, c-I, d-IV

4. ✖ a-III, b-II, c-V, d-I

Question Number : 107 Question Id : 8946584515 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Cyclones are primarily used for _____

Options :

1. ✖ Comminution

2. ✖ Dewatering

3. ✖ Concentration

4. ✔ Classification

Question Number : 108 Question Id : 8946584516 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Chalcopyrite is an ore of _____.

Options :

1. ✖ Iron

2. ✖ Zinc

3. ✔ Copper

4. ✖ Titanium

Question Number : 109 Question Id : 8946584517 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Heating of coal in absence of air at high temperature is called as _____

Options :

1. ✖ Gasification

2. ✖ Coalification

3. ✖ Run-of-mine

4. ✔ Carbonization

Question Number : 110 Question Id : 8946584518 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following fuels has high calorific value?

Options :

1. ✔ Carbureted water gas

2. ✖ Water gas

3. ✖ Producer gas

4. ✖ Blast furnace gas

Question Number : 111 Question Id : 8946584519 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match Group A with Group B and find the correct answer

Group A	Group B
a. Dulong formula	I. Ultimate analysis
b. Carbon	II. Gray body
c. Dwight-Lloyd machine	III. Sintering
d. Radiation	IV. Refractory

Options :

1. ✖ a-I, b-II, c-III, d-IV

2. ✖ a-II, b-IV, c-III, d-I

3. ✔ a-I, b-IV, c-III, d-II

4. ✖ a-III, b-I, c-IV, d-II

Question Number : 112 Question Id : 8946584520 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An example for basic refractory is _____

Options :

1. ✖ Quartz

2. ✔ Dolomite

3. ✖ Silica

4. ✖ Fire clay

Question Number : 113 Question Id : 8946584521 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fire clay refractory contains _____ .

Options :

1. ✖ Al_2O_3

2. ✖ SiO_2

3. ✔ Al_2O_3 and SiO_2

4. ✖ MgO

Question Number : 114 Question Id : 8946584522 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For blast furnace hearth walls_____ refractories are used.

Options :

1. ✖ Silica

2. ✔ Carbon

3. ✖ Magnesite

4. ✖ SiC

Question Number : 115 Question Id : 8946584523 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which thermocouple of the following is used for temperature measurement of 1100 °C in a furnace?

Options :

1. ✔ Chromel-Alumel

2. ✖ Copper-Constantan

3. ✖ Iron-Constantan

4. ✖ Chromel-Constantan

Question Number : 116 Question Id : 8946584524 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

IR pyrometers are very advantageous to measure the temperatures of _____ and above.

Options :

1. ✖ 150 $^{\circ}$C

2. ✖ -200 $^{\circ}$C

3. ✖ 450 °C

4. ✔ 1300 °C

Question Number : 117 Question Id : 8946584525 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the properties given in Group A with the units given in Group B and find the correct answer

Group A	Group B
a. Thermal conductivity	I. J/m^2 -s-K
b. Heat transfer coefficient	II. J/m -s-K
c. Specific heat	III. m^2/s
d. Diffusivity	IV. J/mol-K

Options :

1. ✖ a-I, b-II, c-IV, d-III

2. ✖ a-II, b-III, c-I, d-IV

3. ✔ a-II, b-I, c-IV, d-III

4. ✖ a-II, b-IV, c-III, d-I

Question Number : 118 Question Id : 8946584526 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Critical value of the Gibb's energy of nucleation at equilibrium temperature is _____.

Options :

1. ✔ Infinite

2. ✖ Zero

3. ✖ Positive

4. ✖ Negative

Question Number : 119 Question Id : 8946584527 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following can give information about the corrosion rate?

Options :

1. ✖ Ellingham diagram

2. ✖ Pourbaix diagram

3. ✔ Tafel extrapolation

4. ✖ EMF series

Question Number : 120 Question Id : 8946584528 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following metals cannot be electroplated from aqueous electrolyte?

Options :

1. ✔ Al

2. ✖ Cu

3. ✖ Ni

4. ✖ Zn

Question Number : 121 Question Id : 8946584529 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following partial derivatives is equal to $\left(\frac{\partial S}{\partial V}\right)_T$?

Options :

1. ✖ $-\left(\frac{\partial S}{\partial V}\right)_T$

2. ✔ $-\left(\frac{\partial V}{\partial T}\right)_P$

3. ✖ $\left(\frac{\partial S}{\partial V}\right)_P$

4. ✖ $-\left(\frac{\partial V}{\partial T}\right)_S$

Question Number : 122 Question Id : 8946584530 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

One mole of element P is mixed with one mole of element Q. The entropy of mixing at 0 Kelvin temperature is _____

Options :

1. ✔ – R ln0.5

2. ✖ Infinity

3. ✖ Zero

4. ✖ – R ln2

Question Number : 123 Question Id : 8946584531 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In Ellingham diagram, the slope of the line represent is _____

Options :

1. ✔ $-\Delta S^\circ$

2. ✖ $-\Delta H^\circ$

3. ✖ ΔS°

4. ✖ ΔH°

Question Number : 124 Question Id : 8946584532 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

During the paramagnetic to ferromagnetic transition of iron, which property does abruptly change?

Options :

1. ✖ Entropy

2. ✖ Enthalpy

3. ✔ Heat capacity

4. ✖ Free energy

Question Number : 125 Question Id : 8946584533 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Driving force for grain growth after completion of recrystallization is _____.

Options :

1. ✔ Grain boundary energy

2. ✖ Dislocation density

3. ✖ Vacancy concentration

4. ✖ Stored energy

Question Number : 126 Question Id : 8946584534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Iron-silicon alloy	I. Heating element
b. Ga, As	II. Ultrasonic generator
c. Nichrome	III. Transformer core
d. Quartz crystals	IV. Light emitting diode

Options :

1. ✔ a-III, b-IV, c-I, d-II

2. ✖ a-II, b-IV, c-I, d-III

3. ✖ a-I, b-III, c-IV, d-II

4. ✖ a-III, b-II, c-IV, d-I

Question Number : 127 Question Id : 8946584535 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Miller indices of the common direction to (111) and (110) planes for a cubic system is _____

Options :

1. ✔ $[\bar{1}10]$

2. ✖ [110]

3. ✖ [101]

4. ✖ [111]

Question Number : 128 Question Id : 8946584536 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In continuous cooling of eutectoid steel, which phase of the following does not form?

Options :

1. ✖ Fully bainitic

2. ✖ Fully Pearlitic

3. ✖ Pearlitic and bainitic

4. ✔ Martensitic

Question Number : 129 Question Id : 8946584537 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the alloy names listed in Group A with the main elements present in them listed in Group B and find the correct answer

Group A	Group B
a. Babbit	I. Fe-Ni
b. Muntz metal	II. Ni-Cr-Fe
c. Invar	III. Cu-Zn
d. Inconel	IV. Sn-Sb-Cu

Options :

1. ✖ a-III, b-I, c-IV, d-II

2. ✖ a-III, b-IV, c-I, d-II

3. ✖ a-IV, b-I, c-II, d-III

4. ✔ a-IV, b-III, c-I, d-II

Question Number : 130 Question Id : 8946584538 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In heterogeneous nucleation, the critical radius of the nucleus does not depend on _____.

Options :

1. ✖ Under cooling

2. ✖ Enthalpy change of product

3. ✖ Surface energy

4. ✔ Contact angle

Question Number : 131 Question Id : 8946584539 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For which of the following, the complete solid solubility is possible for the alloy system?

Options :

1. ✖ Cu-Zn

2. ✔ Cu-Ni

3. ✖ Fe-Cr

4. ✖ Pb-Sn

Question Number : 132 Question Id : 8946584540 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The self-diffusion in FCC metals occurs by one of the following mechanisms.

Options :

1. ✖ Interstitial

2. ✖ Substitutional

3. ✖ Interstitialcy

4. ✔ Vacancy

Question Number : 133 Question Id : 8946584541 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The eutectic reaction in a binary system is represented by_____

Options :

1. ✔ Liquid = Solid1 + Solid2

2. ✖ Liquid + Solid1 = Solid2

3. ✖ Solid = Solid1 + Solid2

4. ✖ Liquid1 + Liquid2 = Solid

Question Number : 134 Question Id : 8946584542 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For which unit cell of a crystal, $a = b \neq c$ and $\alpha = \beta = \gamma = 90°$?

Options :

1. ✖ Cubic

2. ✖ Rhombohedral

3. ✔ Tetragonal

4. ✖ Orthorhombic

Question Number : 135 Question Id : 8946584543 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Nitriding is carried out in the region of _____

Options :

1. ✔ Ferrite

2. ✖ Ferrite and austenite

3. ✖ Austenite

4. ✖ Liquid

Question Number : 136 Question Id : 8946584544 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Normalizing is carried out to obtain _____ steels.

Options :

1. ✖ Soft

2. ✖ Brittle

3. ✔ Strong

4. ✖ Coarse grained

Question Number : 137 Question Id : 8946584545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Quenching	I. Bainite
b. Maraging	II. Martensite
c. Tempering	III. Intermetallic precipitates
d. Austempering	IV. Epsilon carbide

Options :

1. ✖ a-II, b-III, c-I, d-IV

2. ✖ a-I, b-III, c-II, d-IV

3. ✔ a-II, b-III, c-IV, d-I

4. ✖ a-III, b-II, c-I, d-IV

Question Number : 138 Question Id : 8946584546 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which coolant of the following is used in laser surface hardening?

Options :

1. ✖ Water medium

2. ✖ Oil medium

3. ✖ Air medium

4. ✔ No medium

Question Number : 139 Question Id : 8946584547 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For wire drawing of medium carbon steels, _____ heat treatment is adopted.

Options :

1. ✖ Quenching

2. ✖ Austempering

3. ✖ Quenching and tempering

4. ✔ Patenting

Question Number : 140 Question Id : 8946584548 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Agehardenable or precipitation hardenable alloys can be used _____

Options :

1. ✔ Below ageing temperature

2. ✖ Above ageing temperature

3. ✖ At solutionizing temperature

4. ✖ Upto melting point

Question Number : 141 Question Id : 8946584549 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following heat treatments is given to overcome stress corrosion cracking of brass?

Options :

1. ✖ Tempering

2. ✖ Thermo-mechanical treatment

3. ✔ Annealing

4. ✖ Normalizing

Question Number : 142 Question Id : 8946584550 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Decarburization can be avoided in high speed steels by _____.

Options :

1. ✖ Single stage heating

2. ✔ Two stage heating

3. ✖ Single stage quenching

4. ✖ Two stage quenching

Question Number : 143 Question Id : 8946584551 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following stainless steels cannot be heat treated?

Options :

1. ✔ Ferritic

2. ✖ Austenitic

3. ✖ Martensitic

4. ✖ Precipitation-hardened

Question Number : 144 Question Id : 8946584552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Temper brittleness occurs during tempering in the range of _____

Options :

1. ✔ 350-550 °C

2. ✖ 150-250 °C

3. ✖ 0-150 °C

4. ✖ Sub-zero temperature

Question Number : 145 Question Id : 8946584553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the facilities in a steel plant listed in Group A with the associated terms in Group B and find the correct answer

Group A	Group B
a. Electric arc furnace	I. High top pressure
b. LD convertor	II. Dummy bar
c. Continuous caster	III. Slag splashing
d. Blast furnace	IV. Eccentric bottom tapping

Options :

1. ✖ a-IV, b-I, c-II, d-III

2. ✖ a-II, b-IV, c-I, d-III

3. ✔ a-IV, b-III, c-II, d-I

4. ✖ a-I, b-III, c-II, d-IV

Question Number : 146 Question Id : 8946584554 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Blast furnace is a _____

Options :

1. ✔ Counter-current reactor

2. ✖ Co-current reactor

3. ✖ Cross-current reactor

4. ✖ No-current reactor

Question Number : 147 Question Id : 8946584555 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The driving force for sintering of a powder compact is _____

Options :

1. ✖ Volume energy

2. ✖ Strain energy

3. ✖ Stacking fault energy

4. ✔ Surface energy

Question Number : 148 Question Id : 8946584556 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In continuous casting of liquid steel, the mould is made of _____

Options :

1. ✖ Refractory oxide

2. ✖ Silicon carbide

3. ✔ Water cooled copper

4. ✖ Water cooled steel

Question Number : 149 Question Id : 8946584557 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For efficient performance of blast furnace, the extent of reduction of Wustite should be _____

Options :

1. ✔ 50-60% indirect reduction

2. ✖ 100% indirect reduction

3. ✖ 100% direct reduction

4. ✖ 50-60% direct reduction

Question Number : 150 Question Id : 8946584558 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In the acid Bessemer steel process, the hot metal should have the following composition

(Where S is Sulphur and P is Phosphorus)

Options :

1. ✖ $S < 0.05\%$ and $P < 1.5\%$

2. ✔ $S < 0.05\%$ and $P < 0.05\%$

3. ✖ $S < 0.05\%$ and $P > 1.5\%$

4. ✖ $S > 1.5\%$ and $P < 0.05\%$

Question Number : 151 Question Id : 8946584559 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Pellets are not as popular in burden as sinter in the iron blast furnace because of their _____

Options :

1. ✖ Poor reducibility

2. ✖ Low mechanical strength

3. ✔ Swelling tendency

4. ✖ Shape

Question Number : 152 Question Id : 8946584560 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following factors is not desirable for effective phosphorus removal in BOF steel making process?

Options :

1. ✔ Higher temperature

2. ✖ Lower temperature

3. ✖ Higher basicity

4. ✖ Higher FeO level in slag

Question Number : 153 Question Id : 8946584561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ process is performed for inclusion modification in ladle metallurgy of steel making.

Options :

1. ✖ Oxygen top blowing

2. ✖ Oxygen bottom blowing

3. ✖ Aluminium wire injection

4. ✔ Calcium wire injection

Question Number : 154 Question Id : 8946584562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In steel making, the addition of bauxite is done to _____

Options :

1. ✔ improve Phosphorus distribution ratio

2. ✖ decrease viscosity of slag

3. ✖ increase the activity of FeO in slag

4. ✖ improve Sulphur distribution ratio

Question Number : 155 Question Id : 8946584563 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements regarding Kroll's process is not correct?

Options :

1. ✖ Pure metal chlorides serve as raw material

2. ✖ Reduction chamber should be free of oxygen

3. ✖ Useful for the extraction of Ti and Zr

4. ✔ Reduction is done by Al

Question Number : 156 Question Id : 8946584564 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the metals listed in Group A with the process in Group B and find the correct answer

Group A	Group B
a. Nickel refining	I. Poling
b. Copper	II. Carbonyl process
c. Zinc	III. Rotary kiln process
d. Iron sponge	IV. Distillation

Options :

1. ✖ a-I, b-II, c-III, d-IV

2. ✔ a-II, b-I, c-IV, d-III

3. ✖ a-IV, b-II, c-I, d-III

4. ✖ a-III, b-IV, c-II, d-I

Question Number : 157 Question Id : 8946584565 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A conventional copper converter is blown from _____

Options :

1. ✖ top

2. ✖ bottom

3. ✔ side

4. ✖ top and bottom

Question Number : 158 Question Id : 8946584566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which reducing agent is used in the extraction of magnesium from calcinated dolomite via Pidgeon process?

Options :

1. ✖ Carbon

2. ✔ Ferrosilicon

3. ✖ Silicon

4. ✖ Sodium

Question Number : 159 Question Id : 8946584567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Al_2O_3 content of cryolite in Hall-Heroult's cell is maintained between _____.

Options :

1. ✔ 6 – 12 %

2. ✖ 18 – 20 %

3. ✖ 2 – 5 %

4. ✖ 12 – 15 %

Question Number : 160 Question Id : 8946584568 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In imperial smelting process for extraction of zinc, zinc vapor is quenched in the external condenser by _____

Options :

1. ✖ Jet of water

2. ✖ Blast of air

3. ✖ Mix of water and air

4. ✔ Molten lead

Question Number : 161 Question Id : 8946584569 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Monazite deposits constitute an important source for _____.

Options :

1. ✖ Titanium

2. ✔ Thorium

3. ✖ Molybdenum

4. ✖ Niobium

Question Number : 162 Question Id : 8946584570 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Copper can be reduced from copper sulphate solution by _____.

Options :

1. ✔ Iron

2. ✖ Silver

3. ✖ Lead

4. ✖ Carbon

Question Number : 163 Question Id : 8946584571 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Penetrameter	I. Ultrasonic test
b. Differential coil probe	II. Dye-penetrant test
c. Piezo-electric probe	III. X-ray radiography
d. Developer	IV. Acoustic emission test

Options :

1. ✔ a-III, b-IV, c-I, d-II

2. ✖ a-II, b-I, c-III, d-IV

3. ✖ a-I, b-II, c-IV, d-III

4. ✖ a-IV, b-III, c-II, d-I

Question Number : 164 Question Id : 8946584572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Subsurface defects and its location can be found by the following test _____

Options :

1. ✔ Ultrasonic pulse echo

2. ✖ Penetrant

3. ✖ Eddy current

4. ✖ Magnetic particle

Question Number : 165 Question Id : 8946584573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Generally brittle materials have % of elongation below _____.

Options :

1. ✔ 5

2. ✖ 10

3. ✖ 20

4. ✖ 40

Question Number : 166 Question Id : 8946584574 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Tensile	I. Barreling
b. Compressive	II. Intergranular cracking
c. Fatigue	III. Striations
d. Creep	IV. Cup and cone
	V. Earing

Options :

1. ✖ a-IV, b-V, c-III, d-I

2. ✔ a-IV, b-I, c-III, d-II

3. ✖ a-V, b-I, c-IV, d-II

4. ✖ a-III, b-II, c-I, d-IV

Question Number : 167 Question Id : 8946584575 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which test is commonly used to understand high temperature deformation behavior of materials?

Options :

1. ✖ Impact

2. ✖ Fatigue

3. ✔ Creep

4. ✖ Compression

Question Number : 168 Question Id : 8946584576 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fatigue resistance of a steel is reduced by _____.

Options :

1. ✔ Decarburization

2. ✖ Polishing of surface

3. ✖ Fine grain size

4. ✖ Shot peening

Question Number : 169 Question Id : 8946584577 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Low cycle fatigue	I. Charpy test
b. Creep	II. Portevin-Le Chatlier effect
c. Impact toughness	III. Coffin-Manson equation
d. Stretcher strain	IV. Larson-Miller parameter
	V. Jominy end Quench test

Options :

1. ✖ a-II, b-IV, c-I, d-V

2. ✖ a-II, b-I, c-V, d-III

3. ✔ a-III, b-IV, c-I, d-II

4. ✖ a-III, b-I, c-IV, d-V

Question Number : 170 Question Id : 8946584578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The fracture toughness of lower strength ductile material is best measured by _____.

Options :

1. ✔ J–integral method

2. ✖ K_{IC} evaluation

3. ✖ Impact test

4. ✖ Flexural test

Question Number : 171 Question Id : 8946584579 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Tungsten filament for lamp is commonly produced by _____.

Options :

1. ✔ Powder metallurgy and metal forming

2. ✖ Powder metallurgy and welding

3. ✖ Casting and metal forming

4. ✖ Casting and welding

Question Number : 172 Question Id : 8946584580 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Drawing	I. Large curved disc
b. Forging	II. Tube
c. Rolling	III. Crank shaft
d. Stretch forming	IV. Plate

Options :

1. ✔ a-II, b-III, c-IV, d-I

2. ✖ a-I, b-IV, c-III, d-II

3. ✖ a-III, b-II, c-I, d-IV

4. ✖ a-IV, b-I, c-II, d-III

Question Number : 173 Question Id : 8946584581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In metal forming, hot working and cold working is defined based on _____.

Options :

1. ✖ Solidus temperature

2. ✔ Recrystallization temperature

3. ✖ Transformation temperature

4. ✖ Eutectic temperature

Question Number : 174 Question Id : 8946584582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Thin foils of aluminium is produced by _____

Options :

1. ✖ 2-High roll mill

2. ✖ 4-High roll mill

3. ✖ Planetary mill

4. ✔ Cluster/Sendzimir mill

Question Number : 175 Question Id : 8946584583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In sheet metal forming, stretcher strains occur in _____.

Options :

1. ✔ Low carbon steel

2. ✖ Duralumin

3. ✖ Austenitic stainless steels

4. ✖ Ni-base alloy

Question Number : 176 Question Id : 8946584584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The respective units for dislocation density and stress intensity factor are _____.

Options :

1. ✖ m^2 and MPa.m

2. ✖ m^2 and MPa.$m^{1/2}$

3. ✔ m^{-2} and MPa.$m^{1/2}$

4. ✖ m^{-2} and MPa.m

Question Number : 177 Question Id : 8946584585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Number of slip systems in close packed hexagonal metal is_____.

Options :

1. ✔ 3

2. ✖ 12

3. ✖ 24

4. ✖ 48

Question Number : 178 Question Id : 8946584586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A defect that is bounded by two mirror planes is_____.

Options :

1. ✖ Stacking fault

2. ✖ Grain boundary

3. ✖ Edge dislocation

4. ✔ Twin

Question Number : 179 Question Id : 8946584587 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Forging	I. Alligator
b. Rolling	II. Cold shut
c. Deep drawing	III. Chevron cracks
d. Extrusion	IV. Wrinkles

Options :

1. ✖ a-I, b-II, c-III, d-IV

2. ✔ a-II, b-I, c-III, d-IV

3. ✖ a-I, b-II, c-IV, d-III

4. ✖ a -IV, b-III, c-II, d-I

Question Number : 180 Question Id : 8946584588 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Movement of jogs can produce _____.

Options :

1. ✔ Vacancies

2. ✖ Grain boundary sliding

3. ✖ Screw dislocation

4. ✖ Twin

Question Number : 181 Question Id : 8946584589 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Low melting point metals/alloys are generally casted by _____

Options :

1. ✖ Sand casting

2. ✖ Investment casting

3. ✔ Die casting

4. ✖ Centrifugal casting

Question Number : 182 Question Id : 8946584590 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Hot tear	I. Insufficient melt super heat
b. Misrun	II. High residual stresses
c. Blister	III. Improper venting
d. Rat tail	IV. Expansion of sand

Options :

1. ✖ a-I, b-II, c-III, d-IV

2. ✖ a-III, b-IV, c-I, d-II

3. ✖ a-IV, b-III, c-II, d-I

4. ✔ a-II, b-I, c-III, d-IV

Question Number : 183 Question Id : 8946584591 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Riser is not required for the casting of _____

Options :

1. ✖ White cast iron

2. ✔ Grey cast iron

3. ✖ Al alloys

4. ✖ Steel

Question Number : 184 Question Id : 8946584592 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a sound casting, the last liquid to solidify is in the _____.

Options :

1. ✔ Riser

2. ✖ Gate

3. ✖ Runner

4. ✖ Vent

Question Number : 185 Question Id : 8946584593 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Draft allowance is given to patterns for _____

Options :

1. ✖ Compensating liquid state shrinkage

2. ✔ Easy removal of pattern from the mould

3. ✖ Providing support for core

4. ✖ Compensating solid state shrinkage

Question Number : 186 Question Id : 8946584594 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Macro-segregation	I. Inoculation
b. Fine grained structure	II. Gas evolution and shrinkage
c. Porosity	III. Temperature gradient and super cooling
d. Dendrites	IV. Density difference and convection currents

Options :

1. ✖ a-I, b-III, c-II, d-IV

2. ✔ a-IV, b-I, c-II, d-III

3. ✖ a-II, b-IV, c-I, d-III

4. ✖ a-IV, b-I, c-III, d-II

Question Number : 187 Question Id : 8946584595 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which casting technique is used for obtaining close dimensional accuracy?

Options :

1. ✖ Centrifugal casting

2. ✖ Sand casting

3. ✖ Die casting

4. ✔ Investment casting

Question Number : 188 Question Id : 8946584596 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Mould coating material that helps in grain refinement of metal casting is _____.

Options :

1. ✖ Cobalt aluminide

2. ✖ Zinc

3. ✖ Tellurium

4. ✔ Boron

Question Number : 189 Question Id : 8946584597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For casting of cast iron, generally melting is done by using _____.

Options :

1. ✔ Cupola

2. ✖ Muffle furnace

3. ✖ Blast furnace

4. ✖ Convertor

Question Number : 190 Question Id : 8946584598 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Directional solidification is preferred for applications such as _____.

Options :

1. ✖ Engine blocks

2. ✖ Connecting rods

3. ✔ Permanent magnets

4. ✖ Gears

Question Number : 191 Question Id : 8946584599 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a brazing process, the liquid metal fills the gap by _____ infiltration

Options :

1. ✔ Capillary

2. ✖ Gravity

3. ✖ Pressure

4. ✖ Vacuum

Question Number : 192 Question Id : 8946584600 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The nature of submerged arc welding flux with basicity index of 0.5 is_____

Options :

1. ✖ Neutral

2. ✔ Acidic

3. ✖ Basic

4. ✖ Semi basic

Question Number : 193 Question Id : 8946584601 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a solid state welding process?

Options :

1. ✖ Friction stir welding

2. ✖ Ultrasonic welding

3. ✔ Flux cored arc welding

4. ✖ Explosive welding

Question Number : 194 Question Id : 8946584602 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How much carbon equivalent in steel is considered to be good for weldability?

Options :

1. ✖ 1.0

2. ✖ 0.8

3. ✖ 0.6

4. ✔ 0.4

Question Number : 195 Question Id : 8946584603 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The weld structure of a metal has similarity to that of the metal produced via _____.

Options :

1. ✔ Casting

2. ✖ Powder metallurgy

3. ✖ Rolling

4. ✖ Forging

Question Number : 196 Question Id : 8946584604 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Ultrasonic welding	I. Thermochemical
b. Spot welding	II. Electrical resistance
c. SMAW	III. Friction
d. Thermit welding	IV. Electrical arc

Options :

1. ✖ a-III, b-II, c-I, d-IV

2. ✖ a-IV, b-III, c-II, d-I

3. ✖ a-I, b-III, c-IV, d-II

4. ✔ a-III, b-II, c-IV, d-I

Question Number : 197 Question Id : 8946584605 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Weld decay in austenitic stainless steels can be avoided by _____.

Options :

1. ✔ Reducing carbon content

2. ✖ Increasing carbon content

3. ✖ Eliminating strong carbide formers

4. ✖ Decreasing chromium content

Question Number : 198 Question Id : 8946584606 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Non consumable electrode is used in _____ process.

Options :

1. ✖ Gas metal arc welding

2. ✔ Gas tungsten arc welding

3. ✖ Submerged arc welding

4. ✖ Laser welding

Question Number : 199 Question Id : 8946584607 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the list in Group A with Group B and find the correct answer

Group A	Group B
a. Soldering	I. Silver-Titanium alloy
b. Welding	II. Silver-Tin alloy
c. Brazing	III. Mild steel
	IV. Lead flouride

Options :

1. ✔ a-II, b-III, c-I

2. ✖ a-I, b-II, c-III

3. ✖ a-III, b-I, c-IV

4. ✖ a-II, b-IV, c-I

Question Number : 200 Question Id : 8946584608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which region of weld does undergo heat treatment effect?

Options :

1. ✖ Base metal

2. ✖ Weld metal

3. ✔ HAZ

4. ✖ Centre of the weld