

Telangana State Council of Higher Education

TS ECET [FDH & B.Sc. (Mathematics)] - 2018

Date of Examination: 09-05-2018

Time of Examination: 10.00 A.M. to 1.00 P.M.

Master Question Paper Copy

Metallurgical Engineering

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Number : 1 Question Id : 5105296813 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If A is square matrix of order 3 and if the matrix obtained by replacing the elements of A with

their corresponding cofactors is $\begin{bmatrix} 1 & -2 & 1 \\ 4 & -5 & -2 \\ -2 & 4 & 1 \end{bmatrix}$ then determinant of A is _____

Options :

1. ✗ 9
2. ✗ 16
3. ✓ 3
4. ✗ 4

Question Number : 2 Question Id : 5105296814 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The system of equations $x + y + z = 6$, $x + 2y + 3z = 10$, $x + 2y + \lambda z = K$ is

inconsistent for $\lambda = l$ and $K \neq m$, then $(l, m) =$

Options :

1. ✘ (3, 7)
2. ✔ (3, 10)
3. ✘ (7, 10)
4. ✘ (10, 4)

Question Number : 3 Question Id : 5105296815 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If A is a square matrix of order n and $A = P + Q$, where P is symmetric and Q is non symmetric

matrices, then $P - Q =$

Options :

1. ✘ A
2. ✔ A^T
3. ✘ $A + A^T$
4. ✘ $A - A^T$

Question Number : 4 Question Id : 5105296816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & x \\ -2 & y & -1 \end{bmatrix}$ is orthogonal then _____

Options :

1. ✔ $x = -2, y = 2$

2. ✘ $x = -2, y = -2$

3. ✘ $x = 2, y = 2$

4. ✘ $x = 2, y = -2$

Question Number : 5 Question Id : 5105296817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $X = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & 3 & k \end{bmatrix}$ is singular matrix then $k =$

Options :

1. ✘ 2

2. ✘ 3

3. ✘ 4

4. ✔ 5

Question Number : 6 Question Id : 5105296818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $\frac{7x-17}{(x-1)(x-3)} = \frac{m}{x-1} + \frac{k}{x-3}$, then $m - k - 1 =$

Options :

1. ✘ 1

2. ✔ 2

3. ✘ 3

4. ✘ -2

Question Number : 7 Question Id : 5105296819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A complex number 'z' having least modulus value and satisfying $|z - 2 + 2i| = 1$ is _____

Options :

$$\left(2 - \frac{1}{\sqrt{2}}\right)(1+i)$$

1. ✘

$$\left(2 + \frac{1}{\sqrt{2}}\right)(1+i)$$

2. ✘

$$\left(2 - \frac{1}{\sqrt{2}}\right)(1-i)$$

3. ✔

$$\left(2 + \frac{1}{\sqrt{2}}\right)(1-i)$$

4. ✘

Question Number : 8 Question Id : 5105296820 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The solution of the simultaneous equations $x + y = \frac{2\pi}{3}$ and $\cos x + \cos y = \frac{3}{2}$ where x and y

are real is _____

Options :

$$x = \frac{\pi}{3}, y = \pi$$

1. ✘

$$x = \pi, y = \frac{\pi}{3}$$

2. ✘

$$x = \pi, y = \frac{\pi}{2}$$

3. ✘

does not exist.

4. ✔

Question Number : 9 Question Id : 5105296821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If both the distinct roots of the equation $|\sin x|^2 + |\sin x| + b = 0$ in $[0, \pi]$ are real then all the values of b lie in the interval _____

Options :

1. ✘ $[-2, 0]$
2. ✘ $(-2, 0)$
3. ✘ $[-2, 0)$
4. ✔ $(-2, 0]$

Question Number : 10 Question Id : 5105296822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\frac{a \cos A + b \cos B + c \cos C}{2s} =$$

Options :

1. ✘ Δ
2. ✘ $\frac{1}{R}$
3. ✔ $\frac{r}{R}$
4. ✘ $\frac{\Delta}{R}$

Question Number : 11 Question Id : 5105296823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\cos A = \frac{3}{4}$, then the value of $32 \sin \frac{A}{2} \cdot \sin \frac{5A}{2}$

Options :

1. ✔ 11

2. ✘ 36

3. ✘ 27

4. ✘ 10

Question Number : 12 Question Id : 5105296824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $z_1 = 3 (\cos 15^\circ + i \sin 15^\circ)$ and $z_2 = 5 (\cos 63^\circ + i \sin 63^\circ)$ then $\frac{z_1}{z_2} =$

Options :

1. ✘ $\frac{3}{5} [\cos 48^\circ + i \sin 48^\circ]$

2. ✔ $\frac{3}{5} [\cos 48^\circ - i \sin 48^\circ]$

3. ✘ $\frac{3}{5} [\cos 78^\circ + i \sin 78^\circ]$

4. ✘ $\frac{5}{3} [\cos 78^\circ - i \sin 78^\circ]$

Question Number : 13 Question Id : 5105296825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$2 \tan^{-1} \frac{1}{7} + \tan^{-1} \frac{1}{13} =$

Options :

1. ✔ $\tan^{-1} \frac{23}{61}$

2. ✘ $\tan^{-1} \frac{14}{61}$

3. ✘ $\tan^{-1} \frac{32}{61}$

4. ✘ $\tan^{-1} \frac{3}{51}$

Question Number : 14 Question Id : 5105296826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\text{If } \cos 20^\circ \cos 40^\circ \cos 80^\circ = p, \text{ then } p =$$

Options :

1. ✘ $\frac{1}{2}$

2. ✘ $\frac{1}{4}$

3. ✔ $\frac{1}{8}$

4. ✘ 1

Question Number : 15 Question Id : 5105296827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\sin A \sin (120^\circ - A) \sin (120^\circ + A) =$$

Options :

1. ✘ $\frac{1}{4} \sin A$

2. ✔ $\frac{1}{4} \sin 3A$

3. ✘ $\frac{1}{4} \cos A$

4. ✘ $\frac{1}{4} \cos 3A$

Question Number : 16 Question Id : 5105296828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\cos 5^\circ - \sin 25^\circ =$$

Options :

1. ✘ $\sin 30^\circ$

2. ✓ $\sin 35^\circ$

3. ✗ $\sin 45^\circ$

4. ✗ $\sin 55^\circ$

Question Number : 17 Question Id : 5105296829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If n is the length of perpendicular from the point $(3, -2)$ to the straight line

$L \equiv 12x - 5y + 6 = 0$ and m is distance of that line $L=0$ from $12x - 5y - 7 = 0$, then _____

Options :

1. ✗ $n + m = 2$

2. ✗ $n = m$

3. ✗ $n = 2m$

4. ✓ $n = 4m$

Question Number : 18 Question Id : 5105296830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The equation of the straight line passing through $(2, 3)$ and perpendicular to the line

$4x - 3y = 10$ is _____

Options :

1. ✗ $3x + 4y + 18 = 0$

2. ✓ $3x + 4y - 18 = 0$

3. ✗ $3x - 4y - 18 = 0$

4. ✗ $3x - 4y + 18 = 0$

Question Number : 19 Question Id : 5105296831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

L is a straight line passing through the point P(1, 2) such that P bisects the portion of the line intercepted between the coordinate axes, then the perpendicular distance of line L from the origin is _____

Options :

1. ✘ $\frac{1}{\sqrt{5}}$

2. ✘ $\frac{2}{\sqrt{5}}$

3. ✘ $\frac{3}{\sqrt{5}}$

4. ✔ $\frac{4}{\sqrt{5}}$

Question Number : 20 Question Id : 5105296832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If the focus of the parabola $(y-2)^2 = 4(x-1)$ is (a, b), then a+b =

Options :

1. ✘ (-1, -2)

2. ✘ (1, 2)

3. ✘ (2, 1)

4. ✔ (2, 2)

Question Number : 21 Question Id : 5105296833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The function $y = |x|$ $-\infty < x < \infty$ is _____

Options :

1. ✘ Differentiable at x=0

2. ✘ not continuous at $x=0$
3. ✔ continuous and differentiable at $x \neq 0$
4. ✘ continuous but not differentiable at $x \neq 0$

Question Number : 22 Question Id : 5105296834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x \rightarrow 0} \left(\frac{\sqrt{1 - \cos 2x}}{x} \right)$$

Options :

1. ✔ Does not exist
2. ✘ 1
3. ✘ -1
4. ✘ 0

Question Number : 23 Question Id : 5105296835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $f(x) = |x^2 - 3x + 2|$ then $\frac{df}{dx} =$

Options :

1. ✔ $2x-3$ when $x > 2$
2. ✘ $3-2x$, when $x < 1$
3. ✘ $3-2x$ when $x > 2$
4. ✘ $2x+3$, when $1 < x < 2$

Question Number : 24 Question Id : 5105296836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $Z = \text{Log}_e\left(\frac{xy}{x+y}\right)$, then $x\frac{\partial Z}{\partial x} + y\frac{\partial Z}{\partial y} =$

Options :

1. ✘ 0

2. ✘ $2Z$

3. ✔ 1

4. ✘ $\frac{Z}{2}$

Question Number : 25 Question Id : 5105296837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Two cars with equal speed V started from a place are such that one is moving towards East and the other is moving towards North. The rate at which they are separated from each other when they travel same distance is _____

Options :

1. ✔ $V\sqrt{2}$

2. ✘ $\frac{V}{\sqrt{2}}$

3. ✘ $\frac{\sqrt{2}}{V}$

4. ✘ $2V^2$

Question Number : 26 Question Id : 5105296838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The derivative of $\sin x^2$ with respect to x^5 is _____

Options :

1. ✘ $\frac{\cos x^2}{5x^4}$

2. ✘ $\frac{2 \cos x^2}{5x^4}$

3. ✔ $\frac{2 \cos x^2}{5x^3}$

4. ✘ $\frac{2 \sin x^2}{5x^4}$

Question Number : 27 Question Id : 5105296839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $y = x^y$ then $\frac{dy}{dx} =$

Options :

1. ✘ $\frac{y}{x(1-y \log x)}$

2. ✔ $\frac{y^2}{x(1-y \log x)}$

3. ✘ $\frac{y^2}{x(1+y \log x)}$

4. ✘ $\frac{y}{(1-y \log x)}$

Question Number : 28 Question Id : 5105296840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $x = at^2, y = 2at$, then $\frac{d^2y}{dx^2} =$

Options :

1. ✘ $-\frac{1}{t^2}$

2. ✘ $-\frac{1}{2at}$

3. ✔ $-\frac{1}{2at^2}$

4. ✘ $-\frac{1}{2at^4}$

Question Number : 29 Question Id : 5105296841 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $I_1 = \int_0^{\infty} e^{-x} x^n dx$, then $\int_0^{\infty} e^{-x^2} x^{2n+1} dx =$

Options :

1. ✘ 0

2. ✔ $\frac{I_1}{2}$

3. ✘ $\frac{I_1}{3}$

4. ✘ $2I_1$

Question Number : 30 Question Id : 5105296842 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $\int \frac{\sin 2x}{\sin 5x \sin 3x} dx = A \log \sin 3x + B \log \sin 5x + C$, then $A + B =$

Options :

1. ✘ $2/7$

2. ✘ $1/3$

3. ✘ $-2/5$

4. ✔ $2/15$

Question Number : 31 Question Id : 5105296843 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The area of the region bounded by the curve $y = x^2 - x$, x-axis and the line $x=2$ is _____

Options :

1. ✘ $\frac{5}{4}$

2. ✘ $\frac{5}{3}$

3. ✔ $\frac{5}{6}$

4. ✘ $\frac{5}{2}$

Question Number : 32 Question Id : 5105296844 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $0 < x < \frac{\pi}{2}$, then $\int \frac{\sin x + \cos x}{\sqrt{1 + \sin 2x}} dx =$

Options :

1. ✘ $\frac{1}{x} + c$

2. ✔ $x + c$

3. ✘ $2x + c$

4. ✘ $\frac{2}{x} + c$

Question Number : 33 Question Id : 5105296845 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$\int \frac{x^4 + 1}{x^2 + 1} dx =$

Options :

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

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

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

4. ✘ $\frac{x^3}{3} - x + \tan^{-1}x + c$

Question Number : 34 Question Id : 5105296846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\int \frac{e^x(1-x)}{x^2} dx =$$

Options :

1. ✘ $-\frac{1}{xe^x} + C$

2. ✘ $\frac{1}{xe^x} + C$

3. ✔ $-\frac{1}{x}e^x + C$

4. ✘ $xe^x + C$

Question Number : 35 Question Id : 5105296847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/2} \frac{\sin x}{\sin x + \cos x} dx =$$

Options :

1. ✔ $\frac{\pi}{4}$

2. ✘ $\frac{\pi}{6}$

3. ✘ $\frac{\pi}{8}$

4. ✘ π

Question Number : 36 Question Id : 5105296848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/2} \sin^4 x \cos^2 x \, dx =$$

Options :

1. ✘ $\frac{\pi}{12}$

2. ✔ $\frac{\pi}{32}$

3. ✘ $\frac{\pi}{42}$

4. ✘ $\frac{\pi}{2}$

Question Number : 37 Question Id : 5105296849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The solution of $(x + 2y^3) \frac{dy}{dx} = y$

Options :

1. ✘ $y = x^3 + cx$

2. ✔ $x = y^3 + cy$

3. ✘ $x = y^2 + cy$

4. ✘ $y = x^3 + cy^2$

Question Number : 38 Question Id : 5105296850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The general solution of $\frac{dy}{dx} = \frac{x^2 + 4x - 9}{x + 2}$ is _____

Options :

1. ✘ $y = (x + 2)^2 - 13 \log|x + 2| + c$

2. ✘ $y = (x + 2)^2 - 5 \log|x + 2| + c$

3. ✘ $y = \frac{x^2}{2} + 2x + 13 \log|x + 2| + c$

4. ✔ $y = \frac{x^2}{2} + 2x - 13 \log|x + 2| + c$

Question Number : 39 Question Id : 5105296851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The differential equation representing the family of curves $y^2 = 2c(x + \sqrt{c})$, where c being a positive parameter is of _____

Options :

1. ✘ Order 3

2. ✘ Order 2

3. ✔ degree 3

4. ✘ degree 1

Question Number : 40 Question Id : 5105296852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The differential equation formed by eliminating the arbitrary constants a and b from the

Equation $\frac{x}{a} + \frac{y}{b} = 1$ is _____

Options :

1. ✘ $x y' = 1$

2. ✘ $x y'' = 0$

3. ✔ $y'' = 0$

4. ✘ $y'' = 1$

Question Number : 41 Question Id : 5105296853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $\frac{dy}{dx} = (1+x^2)(1+y^2)$ is _____

Options :

1. ✔ $\tan^{-1}y = x + \frac{x^3}{3} + c$

2. ✘ $\tan^{-1}y = x - \frac{x^3}{3} + c$

3. ✘ $\cot^{-1}y = x + \frac{x^3}{3} + c$

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

Question Number : 42 Question Id : 5105296854 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $y dx - x dy + \log x dx$ is _____

Options :

1. ✘ $c x + y + (1 - \log x) = 0$

2. ✔ $c x - y - (1 + \log x) = 0$

3. ✘ $c y + x + \log x - 1 = 0$

4. ✘ $c x - y + (1 + \log x) = 0$

Question Number : 43 Question Id : 5105296855 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The general solution of the equation $(D^2 - D - 2)y = \sin 2x$, $(D = \frac{d}{dx})$ is _____

Options :

1. ✓ $y = c_1 e^{-x} + c_2 e^{2x} + \frac{1}{20}(\cos 2x - 3\sin 2x)$
2. ✗ $y = c_1 e^{-x} + c_2 e^{-2x} + \frac{1}{20}(\cos 2x + 3\sin 2x)$
3. ✗ $y = c_1 e^{-x} + c_2 e^{2x} + \frac{1}{20}(\cos 2x - 3\sin 3x)$
4. ✗ $y = c_1 e^x + c_2 e^{-2x} + \frac{1}{20}(\cos 2x + 3\sin 2x)$

Question Number : 44 Question Id : 5105296856 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^2 - 5D + 6)y = e^{4x}$ is _____

Options :

1. ✗ e^{4x}
2. ✗ $-e^{4x}$
3. ✓ $\frac{1}{2}e^{4x}$
4. ✗ $\frac{1}{4}e^{4x}$

Question Number : 45 Question Id : 5105296857 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If $L[f(t)]$ denotes the Laplace Transform of $f(t)$, then $L[t^2 e^{-2t}] =$

Options :

1. ✗ $\frac{1}{(s+2)^3}$

2. ✓ $\frac{2}{(s+2)^3}$

3. ✗ $\frac{1}{(s+2)^2}$

4. ✗ $\frac{2}{(s+2)^2}$

Question Number : 46 Question Id : 5105296858 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$f : \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = x^2$, $-\pi \leq x \leq \pi$ and $f(x+2\pi) = f(x)$, $\forall x \in \mathbb{R}$. If the Fourier series of

$f(x)$ is represented as $f(x) = \sum_{n=0}^{\infty} a_n \cos nx$, then $a_0 =$ _____

Options :

1. ✗ $\frac{2\pi^2}{3}$

2. ✓ $\frac{\pi^2}{3}$

3. ✗ $\frac{4\pi^2}{3}$

4. ✗ $\frac{5\pi^2}{3}$

Question Number : 47 Question Id : 5105296859 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

$f(t) = 2t^2 - 5$, $-2 \leq t \leq 2$ and $f(t+4) = f(t)$. If $2t^2 - 5 = \sum_{n=0}^{\infty} A_n \cos\left(\frac{n\pi t}{2}\right)$, then $A_1 =$

Options :

1. ✗ 0

2. ✓ $\frac{-32}{\pi^2}$

3. ✗ $\frac{1-(-1)^n}{n} \frac{2}{\pi^2}$

4. ✗ $\frac{16}{\pi^2}$

Question Number : 48 Question Id : 5105296860 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If the Laplace transform of a function $f(t)$ is $F(S)$, then $\int_0^{\infty} f(t)dt =$

Options :

1. ✗ $F(1)$

2. ✗ $F(\infty)$

3. ✓ $F(0)$

4. ✗ $F(S-1)$

Question Number : 49 Question Id : 5105296861 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Mean deviation from median for the data 340, 150, 210, 240, 300, 310, 320

is approximately equal to _____

Options :

1. ✓ 52.8

2. ✗ 54.8

3. ✗ 53.8

4. ✗ 51.8

Question Number : 50 Question Id : 5105296862 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Two numbers are chosen at random from $\{1, 2, 3, 4, 5, 6, 7, 8\}$ at a time. The probability that smaller of the two numbers is not more than 3 is

Options :

1. ✘ $\frac{7}{14}$

2. ✔ $\frac{9}{14}$

3. ✘ $\frac{8}{14}$

4. ✘ $\frac{10}{14}$

Display Number Panel:

Yes

Group All Questions:

No

Question Number : 51 Question Id : 5105296863 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The dimensional formula for angular momentum is _____

Options :

1. ✘ $M L T^{-1}$

2. ✘ $M L^{-1} T^{-1}$

3. ✔ $M L^2 T^{-1}$

4. ✘ $M^1 L^2 T^{-2}$

Question Number : 52 Question Id : 5105296864 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following has not been expressed in proper unit?

Options :

1. ✘ stress/strain = N/m^2
2. ✘ surface tension = N/m
3. ✔ energy = $\text{Kg} \times \text{m/s}$
4. ✘ pressure = N/m^2

Question Number : 53 Question Id : 5105296865 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Two adjacent sides of a parallelogram are represented by the two vectors $\mathbf{I}+2\mathbf{J}+3\mathbf{K}$ and $3\mathbf{I}-2\mathbf{J}+\mathbf{K}$. What is the area of the parallelogram?

Options :

1. ✘ 8
2. ✔ $8\sqrt{3}$
3. ✘ $3\sqrt{8}$
4. ✘ 192

Question Number : 54 Question Id : 5105296866 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Given the points $A = (0, a)$ and $B = (1, 2)$, what is the value of a if the magnitude of the vector \overline{AB} is 1?

Options :

1. ✘ 3
2. ✔ 1
3. ✘ 4
4. ✘ 2

Question Number : 55 Question Id : 5105296867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If A and B are perpendicular, vector $A = 5i+7j-3k$ and $B = 2i+2j-ak$. What is the value of a?

Options :

1. ✘ -2

2. ✘ 8

3. ✘ -7

4. ✔ -8

Question Number : 56 Question Id : 5105296868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A block of mass 2 Kg rests on a rough inclined plane making an angle of 30° with the horizontal. The coefficient of static friction between the block and plane is 0.7. The frictional force on the block is _____

Options :

1. ✘ 9.8 N

2. ✔ $0.7 \times 9.8 \times \sqrt{3}$ N

3. ✘ $9.8 \times \sqrt{3}$ N

4. ✘ 0.7×0.9 N

Question Number : 57 Question Id : 5105296869 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A body sliding on a smooth inclined plane required 4 seconds to reach the bottom starting from rest at the top. How much time does it take to cover one-fourth the distance starting from rest at top?

Options :

1. ✘ 1 second

2. ✓ 2 seconds
3. ✗ 4 seconds
4. ✗ 16 seconds

Question Number : 58 Question Id : 5105296870 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A body of mass 2 Kg is hung on a spring balance mounted vertically in a lift. If the lift descends with an acceleration equal to the acceleration due to gravity g , the reading on the spring balance will be changed by _____

Options :

1. ✗ 2 Kg
2. ✗ 4 Kg
3. ✗ $2/g$ Kg
4. ✓ zero

Question Number : 59 Question Id : 5105296871 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If g is the acceleration due to gravity at the earth surface, the gain in the potential energy of an object of mass m is raised, then the surface of the earth to a height equal to the radius R of earth is _____

Options :

1. ✓ $(\frac{1}{2})mgR$
2. ✗ $2mgR$
3. ✗ mgR
4. ✗ $(\frac{1}{4})mgR$

Question Number : 60 Question Id : 5105296872 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A ship of mass $3 \times 10^7 \text{ Kg}$ initially at rest is pulled by a force of $5 \times 10^4 \text{ N}$ through a distance of 3 m. Assume that the resistance due to water is negligible, the speed of the ship is _____

Options :

1. ✘ 1.5 m/s
2. ✘ 60m/s
3. ✔ 0.1 m/s
4. ✘ 5 m/s

Question Number : 61 Question Id : 5105296873 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Clock A is based on oscillations of a spring and clock B is based on pendulum motion. Both clocks run at the same rate on earth. On a planet having the same density as earth but twice the radius, _____

Options :

1. ✘ A will run faster than B
2. ✔ B will run faster than A
3. ✘ both run at the same rate as on earth
4. ✘ both run at equal rates but not the same as on earth

Question Number : 62 Question Id : 5105296874 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The potential energy at a point r when a particle is moving under the central force

$F = -Kr^2$ is _____

Options :

1. ✘ K^2/r

2. ✘ K/r
3. ✘ K/r^2
4. ✔ $-K/r$

Question Number : 63 Question Id : 5105296875 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

When the body is acted upon by a resultant force, then work done by the resultant force is equal to _____

Options :

1. ✘ its initial kinetic energy
2. ✘ its initial potential energy
3. ✘ change in the kinetic energy
4. ✔ change in momentum

Question Number : 64 Question Id : 5105296876 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A Jet engine works on the principle of _____

Options :

1. ✘ conservation of energy
2. ✘ conservation of mass
3. ✔ conservation of linear momentum
4. ✘ conservation of angular momentum

Question Number : 65 Question Id : 5105296877 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A Particle is vibrating in simple harmonic motion with an 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 : 66 Question Id : 5105296878 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The walls of Hall built for music concerns should _____

Options :

1. ✘ amplify sound
2. ✘ reflect sound
3. ✘ transmit sound
4. ✔ absorb sound

Question Number : 67 Question Id : 5105296879 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

When a surrounding body and listener approach each other the pitch appears to rise and when they move away from each other pitch appears to decrease. This is known as _____

Options :

1. ✔ Doppler's principle
2. ✘ Newton's formula
3. ✘ Interference
4. ✘ Sabine's formula

Question Number : 68 Question Id : 5105296880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

An engine driver moving towards a wall with a velocity of 50 m/sec., emits a note of 1.2 KHz. Speed of sound in air is 350 m/sec. The frequency of the note after reflection from the wall as heard by the engine driver is _____

Options :

1. ✘ 1.2 KHz
2. ✔ 1.6 KHz
3. ✘ 0.24 KHz
4. ✘ 2.4 KHz

Question Number : 69 Question Id : 5105296881 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

What is the maximum number of syllables a person can speak in one second?

Options :

1. ✘ 1
2. ✘ 3
3. ✘ 4
4. ✔ 5

Question Number : 70 Question Id : 5105296882 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The speed of sound in air at NTP is 300m/s, if the air pressure becomes four times then the speed of sound will be _____

Options :

1. ✘ 150 m/s
2. ✘ 300 m/s
3. ✔ 600 m/s
4. ✘ 1200 m/s

Question Number : 71 Question Id : 5105296883 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

For the efficiency of the Carnot cycle to be maximum, _____

Options :

1. ✓ the temperature of the source should be infinity
2. ✗ the temperature of the sink should be infinity
3. ✗ the temperature of the source should be zero
4. ✗ both should be infinity

Question Number : 72 Question Id : 5105296884 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Specific heat of a gas at constant volume C_v and at constant pressure C_p are related as

Options :

1. ✗ $C_p/C_v = 1-R/J$
2. ✓ $C_p - C_v = R/J$
3. ✗ $C_p - C_v = J/R$
4. ✗ $C_p + C_v = R/J$

Question Number : 73 Question Id : 5105296885 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

If the pressure remains constant the volume of the gas will _____

Options :

1. ✓ increase with the increase in temperature
2. ✗ decrease with the increase in temperature
3. ✗ not change with the temperature
4. ✗ become zero

Question Number : 74 Question Id : 5105296886 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A super conducting material when placed in a magnetic field will _____

Options :

1. ✘ attract the magnetic field towards its centre
2. ✘ attract the magnetic field but transfer it into a concentrated zone
3. ✔ repel all the magnetic lines of force passing through it
4. ✘ not influence the magnetic field

Question Number : 75 Question Id : 5105296887 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

For long distance communication _____

Options :

1. ✘ grand index fibers are more suitable
2. ✔ single mode step index fibers are more suitable
3. ✘ step index fibers are more suitable
4. ✘ silica fibers are more suitable

Display Number Panel:

Yes

Group All Questions:

No

Question Number : 76 Question Id : 5105296888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The set of quantum number for the 19th electron in chromium is _____

Options :

1. ✔ $n=4, l=0, m=0, S=+1/2$ or $-1/2$
2. ✘ $n=3, l=2, m=1, S=+1/2$ or $-1/2$

3. ✘ $n=3, l=2, m = -1, S=+1/2$ or $-1/2$

4. ✘ $n=4, l=1, m = 0, S=+1/2$ or $-1/2$

Question Number : 77 Question Id : 5105296889 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In which of the following compounds, is coordinate covalent bond present?

Options :

1. ✘ PH_3

2. ✘ H_2O

3. ✔ NH_4OH

4. ✘ HBr

Question Number : 78 Question Id : 5105296890 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Variable valency is shown by _____

Options :

1. ✘ N and O

2. ✔ P and S

3. ✘ F and Cl

4. ✘ N and S

Question Number : 79 Question Id : 5105296891 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In the following balanced equation



The values of x, Y, Z would be _____

Options :

1. ✘ $x=4, Y=8, Z=5$
2. ✘ $x=6, Y=3, Z=4$
3. ✔ $x=8, Y=4, Z=4$
4. ✘ $x=3, Y=5, Z=4$

Question Number : 80 Question Id : 5105296892 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

50cc of decinormal NaOH solution will be completely neutralised by 'x' ml of
decimolar H_2SO_4 solution. The value of 'x' is _____

Options :

1. ✘ 10
2. ✔ 25
3. ✘ 50
4. ✘ 1

Question Number : 81 Question Id : 5105296893 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Arrange the following in the decreasing order of acidity:

I) H_2SO_3 II) H_3PO_4 III) $HClO_3$

Options :

1. ✘ I > II > III
2. ✘ II > III > I
3. ✔ III > II > I

4. ✘ I > III > II

Question Number : 82 Question Id : 5105296894 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which anion is the weakest conjugate base?

Options :

1. ✘ $\text{C}_2\text{H}_5\text{O}^\ominus$

2. ✘ F^\ominus

3. ✘ $\text{CH}_3\text{COO}^\ominus$

4. ✔ NO_3^\ominus

Question Number : 83 Question Id : 5105296895 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In the preparation of wrought iron from cast iron, the furnace employed is _____

Options :

1. ✘ Electrical

2. ✘ Open hearth

3. ✔ Reverberatory

4. ✘ Blast

Question Number : 84 Question Id : 5105296896 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Number of coulombs of current required to convert completely one mole of MnO_4^\ominus ions in acid medium to one mole of Mn^{+2} ions electrically _____

Options :

1. ✘ 96500
2. ✘ 96500 x 2
3. ✘ 96500 x 6
4. ✔ 5 x 96500

Question Number : 85 Question Id : 5105296897 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following elements has the highest value of the electrochemical equivalent?

Options :

1. ✘ Mg
2. ✘ Ca
3. ✔ K
4. ✘ Na

Question Number : 86 Question Id : 5105296898 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The standard reduction potential for Zn^{+2}/Zn and Cu^{+2}/Cu electrodes are

-0.76 V and +0.34 V respectively. For the cell reaction $Zn + Cu^{+2} \rightarrow Zn^{+2} + Cu$ the

standard e.m.f is _____

Options :

1. ✔ +1.10 V
2. ✘ -0.42 V

3. ✘ +0.42 V

4. ✘ -1.10 V

Question Number : 87 Question Id : 5105296899 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The type of protection against corrosion applied to marine piers and water box coolers

is _____

Options :

1. ✔ Impressed current cathodic protection

2. ✘ Metal rusting

3. ✘ Tinning

4. ✘ Metal painting

Question Number : 88 Question Id : 5105296900 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A metal is dipped separately in different pH solutions of 1, 2, 3 and 4. In which pH solution is the metal easily corroded?

Options :

1. ✔ 1

2. ✘ 2

3. ✘ 3

4. ✘ 4

Question Number : 89 Question Id : 5105296901 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A raw water sample has 300 ppm calcium ions and its CaCO_3 equivalent in ppm

is ____

Options :

1. ✘ 625

2. ✔ 750

3. ✘ 1500

4. ✘ 25

Question Number : 90 Question Id : 5105296902 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A Process which removes ionic, non ionic, colloidal and organic matter from water

is _____

Options :

1. ✘ Ion exchange process

2. ✘ Permutit process

3. ✘ Zeolite process

4. ✔ Reverse osmosis

Question Number : 91 Question Id : 5105296903 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The exhausted anion exchange column in the demineralization process is regenerated

by passing a solution of _____

Options :

1. ✘ dil H₂SO₄

2. ✘ dil HCl

3. ✔ dil NaOH

4. ✘ dil NH₄OH

Question Number : 92 Question Id : 5105296904 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which one of the following is not an example of addition polymer?

Options :

1. ✘ Polythene

2. ✔ Terylene

3. ✘ Neoprene

4. ✘ Polystyrene

Question Number : 93 Question Id : 5105296905 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following is an example of fibre polymer?

Options :

1. ✘ Rubber

2. ✘ PVC

3. ✘ Bakelite

4. ✔ Nylon-66

Question Number : 94 Question Id : 5105296906 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following can enhance the Physical properties of rubber?

Options :

1. ✘ ZnO
2. ✘ Zn stearate
3. ✔ Sulphur
4. ✘ SiO₂

Question Number : 95 Question Id : 5105296907 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The basic component of the smog may be _____

Options :

1. ✘ O₃
2. ✔ O₃ + PAN
3. ✘ PAN + SO₂
4. ✘ O₃ + PAN + SO₃

Question Number : 96 Question Id : 5105296908 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In Antarctica, Ozone depletion is due to the formation of the following

Compound(s) _____

Options :

1. ✘ Chlorine nitrate

2. ✘ PAN
3. ✔ Acrolein
4. ✘ SO₂ and SO₃

Question Number : 97 Question Id : 5105296909 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The pollutant responsible for smog formation and acid rain is _____

Options :

1. ✔ SO₂
2. ✘ CH₄
3. ✘ He
4. ✘ SO₂Cl₂

Question Number : 98 Question Id : 5105296910 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The normality of 26% (Wt/Vol) solution of ammonia (d=0.55) is approximately ____

Options :

1. ✘ 1.5
2. ✔ 15.3
3. ✘ 0.4
4. ✘ 4

Question Number : 99 Question Id : 5105296911 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Wolframite impurity in Cassiterite is removed by _____

Options :

1. ✘ Liqutation
2. ✘ Froth flotation
3. ✔ Electromagnetic separation
4. ✘ Hand picking

Question Number : 100 Question Id : 5105296912 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The highest ranking coal is _____

Options :

1. ✔ Anthracite
2. ✘ Lignite
3. ✘ Bituminous
4. ✘ Peat

Display Number Panel:
Group All Questions:

Yes
No

Question Number : 101 Question Id : 5105296913 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The free settling ratio of slate (specific gravity:2.7) and anthracite (specific gravity:1.7) under
Newtonian conditions is

Options :

1. ✘ 2.43

2. ✓ 1.56

3. ✗ 9.70

4. ✗ 3.11

Question Number : 102 Question Id : 5105296914 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Thickening is done to _____

Options :

1. ✗ concentrate the ores

2. ✗ separate the ore particles in different sizes

3. ✗ separate ore particles of suitable size from the pulp

4. ✓ dewater the concentrated ore

Question Number : 103 Question Id : 5105296915 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The _____ is not the part of blake jaw crusher

Options :

1. ✗ crush shaft

2. ✗ pitman

3. ✗ toggles

4. ✓ hanger

Question Number : 104 Question Id : 5105296916 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In pneumatic classifier, suspension of solid is made in _____

Options :

1. ✗ water

2. ✘ vapour
3. ✔ air
4. ✘ a mixture of air and steam

Question Number : 105 Question Id : 5105296917 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ is/are fixed in every type of jigging machine

Options :

1. ✘ Cone crushers
2. ✘ rolls
3. ✔ sieve screen
4. ✘ Wilfey table

Question Number : 106 Question Id : 5105296918 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In trommels, _____ is provided for screening

Options :

1. ✘ woven wire screen
2. ✘ grizzly
3. ✔ punched plate
4. ✘ thin screening cloth

Question Number : 107 Question Id : 5105296919 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

To get ultrafine particles, the equipment used is the _____

Options :

1. ✘ ball mill

2. ✘ rod mill
3. ✘ hammer crusher
4. ✔ fluid energy mill

Question Number : 108 Question Id : 5105296920 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following is used in CO₂ process?

Options :

1. ✔ sodium silicate, CO₂ gas, silica sand
2. ✘ silica sand, water, bentonite
3. ✘ silica sand, CO₂ gas, bentonite
4. ✘ sodium silicate, bentonite, water

Question Number : 109 Question Id : 5105296921 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

For the beneficiation of iron ore, the most commonly used method is _____

Options :

1. ✘ flocculation
2. ✘ froth flotation
3. ✔ jigging and tabling
4. ✘ classification

Question Number : 110 Question Id : 5105296922 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In froth floatation, chemical agent added to cause air adherence is called the _____

Options :

1. ✔ collector

2. ✘ frother
3. ✘ modifier
4. ✘ activator

Question Number : 111 Question Id : 5105296923 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Washing of coal decreases

Options :

1. ✔ ash content
2. ✘ carbon
3. ✘ mineral matter
4. ✘ caking index

Question Number : 112 Question Id : 5105296924 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The reaction $C + CO_2 = 2CO$ taking place during coal gasification is called the _____
reaction

Options :

1. ✘ neumann reversal
2. ✘ shift conversion
3. ✔ boudourd
4. ✘ reduction

Question Number : 113 Question Id : 5105296925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Ammonia content of raw coke oven gas is about _____ gm/Nm³

Options :

1. ✘ 1
2. ✔ 15
3. ✘ 150
4. ✘ 1500

Question Number : 114 Question Id : 5105296926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following fuel gases is heavier than air?

Options :

1. ✘ coke oven gas
2. ✔ blast furnace gas
3. ✘ producer gas
4. ✘ water gas

Question Number : 115 Question Id : 5105296927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Mullite is represented as _____

Options :

1. ✘ $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$
2. ✘ $\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$
3. ✘ $2\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$
4. ✔ $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$

Question Number : 116 Question Id : 5105296928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Lower part of the hot metal mixer is lined with the _____ bricks

Options :

1. ✘ superduty fireclay
2. ✘ high alumina
3. ✘ silica
4. ✔ carborundum

Question Number : 117 Question Id : 5105296929 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Spalling tendency of refractories is reduced by increasing its _____

Options :

1. ✔ porosity
2. ✘ specific gravity
3. ✘ thermal conductivity
4. ✘ strength

Question Number : 118 Question Id : 5105296930 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ is used as binding material for the dead burnt dolomite or magnesite brick.

Options :

1. ✘ naphthelene
2. ✘ silica flour
3. ✘ ball clay
4. ✔ tar

Question Number : 119 Question Id : 5105296931 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The property dilation deals with _____ of any material.

Options :

1. ✘ refractoriness
2. ✔ thermal expansion
3. ✘ compressive strength
4. ✘ bulk density

Question Number : 120 Question Id : 5105296932 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In _____ Furnace, the charge is protected from products of combustion.

Options :

1. ✘ crucible
2. ✘ induction
3. ✘ rotary kiln
4. ✔ muffle

Question Number : 121 Question Id : 5105296933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

According to Dulong and Petit's law

Options :

1. ✘ at low temperature C_V approaches $2R$
2. ✘ at low temperature C_V approaches $3R$
3. ✔ at high temperature C_V approaches $2R$
4. ✘ at high temperature C_V approaches $3R$

Question Number : 122 Question Id : 5105296934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In an isothermal system, the temperature of the system _____.

Options :

1. remains constant
2. increases rapidly
3. decreases rapidly
4. of initial and final stage is equal

Question Number : 123 Question Id : 5105296935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The pressure exerted by a mixture of gases is _____ the sum of the individual pressures which each gas would exert, if it alone occupies the whole volume.

Options :

1. either greater than or smaller than
2. less than
3. equal to
4. greater than

Question Number : 124 Question Id : 5105296936 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In a reversible cycle, the sum of change in q/T (where q is heat absorbed and T is absolute temperature) is _____.

Options :

1. five
2. two
3. infinity
4. zero

Question Number : 125 Question Id : 5105296937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Internal energy represents _____ of all atoms in a system.

Options :

1. ✘ total kinetic energy
2. ✘ potential energy
3. ✔ total kinetic and potential energy
4. ✘ gravitational force

Question Number : 126 Question Id : 5105296938 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The rate law $dx/dt = k(a - x)(b - x)$ represents _____ order reaction.

Options :

1. ✘ first
2. ✘ zero
3. ✘ third
4. ✔ second

Question Number : 127 Question Id : 5105296939 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ is concerned with the vapour pressure of the solute.

Options :

1. ✔ Henry's law
2. ✘ Raoult's law
3. ✘ Hess's law
4. ✘ Sievert's law

Question Number : 128 Question Id : 5105296940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ is the extensive property.

Options :

1. ✓ free energy
2. ✗ surface tension
3. ✗ specific heat
4. ✗ refractory index

Question Number : 129 Question Id : 5105296941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The quantitative effect of temperature on chemical equilibrium is given by _____

Options :

1. ✗ Antonie's equation
2. ✗ Arrhenius equation
3. ✓ Vant-Hoffequation
4. ✗ Le-Chatelier's principle

Question Number : 130 Question Id : 5105296942 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In case of _____ reactions, the reaction rate does not decrease appreciably as the reaction proceeds.

Options :

1. ✗ catalytic
2. ✗ parallel
3. ✓ autocatalytic

4. ✘ series

Question Number : 131 Question Id : 5105296943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In pig iron production, residual manganese is high if _____

Options :

1. ✘ temperature is low
2. ✘ P in metal is less
3. ✘ Si in metal is high
4. ✔ Basicity is less

Question Number : 132 Question Id : 5105296944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Magnetic oxygen removed in blast furnace is approximately ____%

Options :

1. ✘ 11.1
2. ✘ 66.6
3. ✔ 22.2
4. ✘ 44.4

Question Number : 133 Question Id : 5105296945 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Acid burdening of blast furnace may necessitate _____

Options :

1. ✘ external desiliconisation
2. ✔ external desulphurization
3. ✘ external dephosphorisation

4. ✘ external decarburisation

Question Number : 134 Question Id : 5105296946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Steels containing approximately 0.3% C are generally _____

Options :

1. ✔ killed
2. ✘ semi-killed
3. ✘ capped
4. ✘ rimmed

Question Number : 135 Question Id : 5105296947 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

At the tuyere level of blast furnace, the gas pressure is _____ Atmospheric pressure.

Options :

1. ✘ nearly equal to
2. ✘ half of
3. ✔ one and half times of
4. ✘ nearly three times of

Question Number : 136 Question Id : 5105296948 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Limonite is the _____ ore of iron.

Options :

1. ✘ sulphide
2. ✔ hydrous oxide
3. ✘ carbonate

4. ✘ silicate

Question Number : 137 Question Id : 5105296949 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In continuous casting of steel, _____

Options :

1. ✘ use of additional rolling mill and ingot stripping is avoided
2. ✘ water cooled ladle is used
3. ✔ teeming of steel in ingot mould is avoided
4. ✘ teeming of steel in teeming ladle is avoided

Question Number : 138 Question Id : 5105296950 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Non metallic inclusions present in molten steel are _____

Options :

1. ✘ SiO_2 and P_2O_5
2. ✔ CaO , FeO and CaSiO_3
3. ✘ FeO , MnO and MnS
4. ✘ CaO , FeO and P

Question Number : 139 Question Id : 5105296951 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Calcium is used as deoxidizing agent in the form of _____

Options :

1. ✘ calcined limestone
2. ✘ flourspar

3. ✘ calcium phosphate

4. ✔ silico calcium

Question Number : 140 Question Id : 5105296952 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

During solidification of killed steel ingots _____

Options :

1. ✘ only hydrogen gas is evolved

2. ✔ no gas evolution takes place

3. ✘ little gas is evolved

4. ✘ more gas is evolved

Question Number : 141 Question Id : 5105296953 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Cathode current efficiencies (%) in electro-winning plants vary from _____

Options :

1. ✘ 90 to 100

2. ✔ 76 to 90

3. ✘ 26 to 40

4. ✘ 12 to 30

Question Number : 142 Question Id : 5105296954 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The solutions (Cu) from heap and dump leaching processes have the following

composition (g/m^3) _____

Options :

1. ✔ 1-5

2. ✘ 30-50

3. ✘ 6-10

4. ✘ 10-20

Question Number : 143 Question Id : 5105296955 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In Bayer's process, Bauxite is leached by _____ solution.

Options :

1. ✔ conc. NaOH

2. ✘ conc. HCl

3. ✘ ammonia

4. ✘ H₂SO₄

Question Number : 144 Question Id : 5105296956 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Effect of temperature on leaching rates is usually expressed as _____

Options :

1. ✔ arrhenius equation

2. ✘ nernst equation

3. ✘ diffusion equation

4. ✘ Jander's equation

Question Number : 145 Question Id : 5105296957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Solvent extraction is _____ extraction.

Options :

1. ✘ solid-gas

2. ✘ solid-liquid
3. ✔ liquid-liquid
4. ✘ Solid-solid

Question Number : 146 Question Id : 5105296958 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

For an ideal hexagonal-closed packed structure, the c/a ratio and packing efficiency respectively are _____

Options :

1. ✘ 1.633 and 52%
2. ✔ 1.633 and 74%
3. ✘ 1.733 and 68%
4. ✘ 1.733 and 74%

Question Number : 147 Question Id : 5105296959 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following has a FCC lattice structure?

Options :

1. ✘ zinc
2. ✘ magnesium
3. ✔ copper
4. ✘ sodium

Question Number : 148 Question Id : 5105296960 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Crystal structure of Austenite is _____.

Options :

1. ✘ SC
2. ✘ BCC
3. ✔ FCC
4. ✘ HCP

Question Number : 149 Question Id : 5105296961 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The preferred slip plane for BCC is _____

Options :

1. ✘ (111)
2. ✔ (110)
3. ✘ (100)
4. ✘ (000)

Question Number : 150 Question Id : 5105296962 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Coordination number of BCC is _____.

Options :

1. ✘ 10
2. ✔ 8
3. ✘ 12
4. ✘ 14

Question Number : 151 Question Id : 5105296963 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Bronze is an alloy of copper and _____.

Options :

1. ✘ lead
2. ✔ tin
3. ✘ nickel
4. ✘ zinc

Question Number : 152 Question Id : 5105296964 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

What is the percentage of chromium in 18-4-1 high speed steel?

Options :

1. ✘ 1
2. ✘ 4
3. ✔ 18
4. ✘ 8

Question Number : 153 Question Id : 5105296965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In a FCC cell, an atom at the face centre is shared by _____ unit cells.

Options :

1. ✘ 8
2. ✘ 4
3. ✘ 6
4. ✔ 2

Question Number : 154 Question Id : 5105296966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following properties of a material is a structure-insensitive property?

Options :

1. ✘ hardness
2. ✘ yield strength
3. ✘ impact strength
4. ✔ melting point

Question Number : 155 Question Id : 5105296967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following alloying components is absent in maraging steels?

Options :

1. ✘ nickel
2. ✔ aluminum
3. ✘ cobalt
4. ✘ molybdenum

Question Number : 156 Question Id : 5105296968 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Percentage of silver in German silver is _____

Options :

1. ✘ 5
2. ✘ 10
3. ✘ 20
4. ✔ 0

Question Number : 157 Question Id : 5105296969 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following is an amorphous material?

Options :

1. glass
2. mica
3. brass
4. cast iron

Question Number : 158 Question Id : 5105296970 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following expands upon solidification?

Options :

1. low carbon steel
2. high carbon steel
3. white cast iron
4. gray cast iron

Question Number : 159 Question Id : 5105296971 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following surface hardening methods does not change the composition of the surface of a steel?

Options :

1. carburizing
2. boronizing
3. laser hardening
4. nitriding

Question Number : 160 Question Id : 5105296972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which is the softest structure that appears on iron-carbon equilibrium diagram?

Options :

1. ✘ cementite
2. ✔ ferrite
3. ✘ pearlite
4. ✘ austenite

Question Number : 161 Question Id : 5105296973 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In iron-carbon equilibrium diagram, the eutectic point is at _____ percent carbon.

Options :

1. ✘ 0.8
2. ✘ 2.5
3. ✔ 4.3
4. ✘ 1.6

Question Number : 162 Question Id : 5105296974 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ steel is normally subjected to tempering.

Options :

1. ✘ Annealed
2. ✔ Quenched
3. ✘ Normalized
4. ✘ Plastically deformed

Question Number : 163 Question Id : 5105296975 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

_____ is a thermo-mechanical treatment of metal.

Options :

1. ✘ Annealing
2. ✘ Martempering
3. ✔ Ausforming
4. ✘ Austempering

Question Number : 164 Question Id : 5105296976 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Stacking sequence in HCP is _____

Options :

1. ✔ ...ABABABAB...
2. ✘ ...ABCABCABC...
3. ✘ ...ABABCBCBC...
4. ✘ ...ACCBCABCABC...

Question Number : 165 Question Id : 5105296977 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following alloy systems exhibits complete solid solubility?

Options :

1. ✔ Cu-Ni
2. ✘ Fe-Cu
3. ✘ Pb-Sn
4. ✘ Cu-Zn

Question Number : 166 Question Id : 5105296978 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following refers to the ability of a material to absorb energy when deformed elastically?

Options :

1. ✘ toughness
2. ✘ fracture toughness
3. ✔ resilience
4. ✘ hardness

Question Number : 167 Question Id : 5105296979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a non-destructive test?

Options :

1. ✘ penetrating liquid test
2. ✘ magnaflux method
3. ✘ ultrasonic testing
4. ✔ creep test

Question Number : 168 Question Id : 5105296980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following metal working operations can be categorized as an indirect compression process?

Options :

1. ✘ forging
2. ✘ wire drawing
3. ✔ extrusion

4. ✘ stretch forming

Question Number : 169 Question Id : 5105296981 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The ultimate tensile strength of low carbon steel by working at a high strain rate will _____

Options :

1. ✘ remain constant
2. ✔ increase
3. ✘ decrease
4. ✘ first increase and then decrease

Question Number : 170 Question Id : 5105296982 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Slow plastic deformation of metals under constant stress at high temperature is known as _____

Options :

1. ✔ creep
2. ✘ plastic deformation
3. ✘ fatigue
4. ✘ endurance

Question Number : 171 Question Id : 5105296983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Creep resistance decreases due to _____

Options :

1. ✔ small grain size
2. ✘ fine dispersoid size

3. ✘ low stacking fault energy

4. ✘ high melting point

Question Number : 172 Question Id : 5105296984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Yield strength of a polycrystalline metal with an average grain size, d , is proportional to _____

Options :

1. ✘ $d^{1/2}$

2. ✔ $d^{-1/2}$

3. ✘ d

4. ✘ d^1

Question Number : 173 Question Id : 5105296985 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A property that cannot be obtained from a tensile test is _____

Options :

1. ✘ young's modulus

2. ✘ yield strength

3. ✘ ultimate tensile strength

4. ✔ endurance limit

Question Number : 174 Question Id : 5105296986 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In a tensile test of a ductile material, necking starts at _____

Options :

1. ✘ lower yield stress

2. ✘ upper yield stress
3. ✔ ultimate tensile strength
4. ✘ just before fracture

Question Number : 175 Question Id : 5105296987 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Dislocation is _____ imperfection.

Options :

1. ✔ line
2. ✘ point
3. ✘ volume
4. ✘ surface

Question Number : 176 Question Id : 5105296988 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A test used to determine the Young's modulus of a metal is known as _____.

Options :

1. ✘ hardness test
2. ✘ creep test
3. ✘ fatigue test
4. ✔ tensile test

Question Number : 177 Question Id : 5105296989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

A defect that is bounded by two mirror planes is _____

Options :

1. ✓ twin
2. ✗ stacking fault
3. ✗ grain boundary
4. ✗ edge dislocation

Question Number : 178 Question Id : 5105296990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Stress causing a deformation of _____ percent is called the yield strength.

Options :

1. ✗ 0.01
2. ✓ 0.2
3. ✗ 0.5
4. ✗ 1

Question Number : 179 Question Id : 5105296991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

In Impact testing, Charpy specimen has a _____ cross section.

Options :

1. ✗ circular
2. ✗ rectangular
3. ✗ conical
4. ✓ square

Question Number : 180 Question Id : 5105296992 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The important property of a material in all metal forming processes is _____.

Options :

1. ✘ elasticity
2. ✔ plasticity
3. ✘ toughness
4. ✘ brittleness

Question Number : 181 Question Id : 5105296993 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following has maximum strength?

Options :

1. ✘ austenite
2. ✘ ferrite
3. ✔ martensite
4. ✘ pearlite

Question Number : 182 Question Id : 5105296994 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The yield-point phenomenon observed in annealed low carbon steel is due to the presence of
which of the following elements?

Options :

1. ✘ silicon
2. ✔ carbon
3. ✘ phosphorous
4. ✘ chromium

Question Number : 183 Question Id : 5105296995 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

On decreasing the grain size of polycrystalline material, the property most likely to deteriorate

is _____.

Options :

1. ✘ fatigue
2. ✘ yield strength
3. ✘ tensile strength
4. ✔ creep

Question Number : 184 Question Id : 5105296996 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Graphite moulds are used for continuous casting process in order to impart _____

Options :

1. ✘ non wetting characteristic
2. ✘ chilling effect
3. ✔ self lubricating quality
4. ✘ quick solidifying property

Question Number : 185 Question Id : 5105296997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Carbon is present in the form of cementite in the _____ cast iron.

Options :

1. ✘ grey
2. ✔ white

3. ✘ nodular

4. ✘ malleable

Question Number : 186 Question Id : 5105296998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Casting process used for ornaments is _____

Options :

1. ✔ slush casting

2. ✘ die casting

3. ✘ pressed casting

4. ✘ investment casting

Question Number : 187 Question Id : 5105296999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Surfaces to be machined are marked on the pattern by which of the following colours?

Options :

1. ✘ black

2. ✘ yellow

3. ✔ red

4. ✘ blue

Question Number : 188 Question Id : 5105297000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Temperature generated in arc welding is of the order _____

Options :

1. ✘ 1500°C

2. ✘ 2500°C

3. ✔ 5500°C

4. ✘ 8500°C

Question Number : 189 Question Id : 5105297001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Welding process using a pool of molten metal is _____

Options :

1. ✘ carbon arc welding

2. ✔ submerged arc welding

3. ✘ TIG welding

4. ✘ MIG welding

Question Number : 190 Question Id : 5105297002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following NDT techniques cannot be used to detect an internal crack?

Options :

1. ✔ liquid penetrant inspection

2. ✘ radiography

3. ✘ ultrasonic testing

4. ✘ x-ray tomography

Question Number : 191 Question Id : 5105297003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a fusion welding process?

Options :

1. ✘ arc welding
2. ✘ gas welding
3. ✘ resistance welding
4. ✔ friction stir welding

Question Number : 192 Question Id : 5105297004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Alternating current is preferred in tungsten inert gas welding of aluminum alloys, because

_____.

Options :

1. ✔ it helps removing aluminum oxide
2. ✘ direct current results in erratic arc
3. ✘ it helps improving ductility of welds
4. ✘ it reduces cost

Question Number : 193 Question Id : 5105297005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Cold working metals reduces its _____.

Options :

1. ✔ ductility and plasticity
2. ✘ hardness
3. ✘ yield strength and ultimate strength

4. ✘ electrical resistance

Question Number : 194 Question Id : 5105297006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Cold forming of a part has the advantage of _____.

Options :

1. ✔ close tolerance as no shrinkage occurs
2. ✘ application of lower deformation force
3. ✘ grain refinement
4. ✘ elimination of post heat treatment requirement

Question Number : 195 Question Id : 5105297007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The engineering stress-strain curve for a ceramic material is _____.

Options :

1. ✘ parabolic
2. ✘ exponential
3. ✘ logarithmic
4. ✔ linear

Question Number : 196 Question Id : 5105297008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

With roll diameter, rolling load _____.

Options :

1. ✔ increases

- 2. ✘ decreases
- 3. ✘ remains constant
- 4. ✘ is uncertain

Question Number : 197 Question Id : 5105297009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

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

Options :

- 1. ✘ runner
- 2. ✔ riser
- 3. ✘ gate
- 4. ✘ vent

Question Number : 198 Question Id : 5105297010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

For obtaining 100% theoretical density, which of the following compaction processes is used in powder metallurgy?

Options :

- 1. ✘ double ended compaction
- 2. ✘ hot isostatic pressing
- 3. ✘ cold isostatic pressing
- 4. ✔ powder extrusion

Question Number : 199 Question Id : 5105297011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

The ASTM grain size number of a material which shows 256 grains per square inch at a magnification of 100X is _____.

Options :

1. ✘ 5

2. ✘ 6

3. ✔ 9

4. ✘ 8

Question Number : 200 Question Id : 5105297012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Fatigue resistance of a steel is reduced by _____.

Options :

1. ✔ decarburization

2. ✘ polishing the surface

3. ✘ reducing the grain size

4. ✘ shot peening