

Andhra Pradesh State Council of 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 :	Ceramic Technology 08th May 2024 Shift 1
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No

Show Progress Bar :	No
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	210688150
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	50
Section Marks :	50
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 2106887607 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If each element of a row or column of a determinant is multiplied by a constant K then the value of the determinant is

Options :

1. ✘ Added by k

2. ✔ Multiplied by k

3. ✘ Subtracted by k

4. ✘ Divided by k.

Question Number : 2 Question Id : 2106887608 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $A = \begin{bmatrix} 1 & 2 & 3 \\ -2 & 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 3 & 1 \\ 5 & 4 & 2 \\ 1 & 5 & 3 \end{bmatrix}$ then $AB =$

Options :

1. ✘ $\begin{bmatrix} 15 & 26 & 4 \end{bmatrix}$

2. ✔ $\begin{bmatrix} 15 & 26 & 14 \\ 5 & 18 & 12 \end{bmatrix}$

3. ✘ $\begin{bmatrix} 15 & 5 \\ 26 & 18 \\ 14 & 12 \end{bmatrix}$

4. ✘ BA

Question Number : 3 Question Id : 2106887609 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The elements on the main diagonal of a skew symmetric matrix are all

Options :

1. ✓ zeros

2. ✗ One's

3. ✗ Unequal

4. ✗ >1

Question Number : 4 Question Id : 2106887610 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If ω is one of the imaginary cube roots of unity, find the value of the determinant

$$\begin{vmatrix} 1 & \omega & \omega^2 \\ \omega & \omega^2 & 1 \\ \omega^2 & 1 & \omega \end{vmatrix} =$$

Options :

1. ✓ zero

2. ✗ one

3. ✗ ω^2

4. ✗ ω

Question Number : 5 Question Id : 2106887611 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Every square matrix can be written as the sum of

Options :

1. ✘ Diagonal matrix & square matrix
2. ✘ Two rectangular matrices
3. ✘ Square and non-square matrices
4. ✔ Symmetric and skew symmetric matrix

Question Number : 6 Question Id : 2106887612 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An improper fraction can be reduced to proper fraction by

Options :

1. ✘ Multiplication
2. ✔ Division

3. ✖ subtraction

4. ✖ Addition

Question Number : 7 Question Id : 2106887613 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\frac{x}{(x+2)(x-3)} =$$

Options :

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

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

3. ✔ $\frac{2}{5(x+2)} + \frac{3}{5(x-3)}$

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

Question Number : 8 Question Id : 2106887614 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The value of $\sin 210^\circ$

Options :

1. ✘ $\frac{1}{2}$

2. ✔ $-\frac{1}{2}$

3. ✘ $\frac{1}{\sqrt{2}}$

4. ✘ $-\frac{1}{\sqrt{2}}$

Question Number : 9 Question Id : 2106887615 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\cos n\pi =$$

Options :

1. ✘ -1

2. ✘ $-n$

3. ✔ $(-1)^n$

4. ✘ $(n)^{-1}$

Question Number : 10 Question Id : 2106887616 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$a \neq 0 \neq b, \sin x + \sin y = a, \cos x + \cos y = b$ then $\tan \frac{x+y}{2} =$

Options :

1. ✘ $\frac{b}{a}$

2. ✔ $\frac{a}{b}$

3. ✘ $\frac{a+b}{2}$

4. ✘ $\frac{a-b}{2}$

Question Number : 11 Question Id : 2106887617 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$f(x)$ is a periodic function of period k then the period of periodic function $f(ax+b)$ is

Options :

1. ✘ $\frac{k}{a}, a \neq 0$

2. ✘ $\frac{ak}{|b|}, b \neq 0$

3. ✘ $\frac{k+b}{a}, a \neq 0$

4. ✔ $\frac{k}{|a|}, a \neq 0$

Question Number : 12 Question Id : 2106887618 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $7\sin^2\theta + 3\cos^2\theta = 4$, then $\theta =$

Options :

1. ✘ $\pm \frac{\pi}{3}$

2. ✔ $\pm \frac{\pi}{6}$

3. ✘ $\pm \frac{\pi}{4}$

4. ✘ $\pm \frac{\pi}{2}$

Question Number : 13 Question Id : 2106887619 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The range of $\cos^{-1}x$ is

Options :

1. ✓ $[0, \pi]$

2. ✗ $[-\pi, \pi]$

3. ✗ $[0, -\pi]$

4. ✗ $(0, \pi)$

Question Number : 14 Question Id : 2106887620 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Assume $x > 0, y > 0$. Then which one of the following is true ?

Options :

1. ✓ If $xy < 1$ then $\tan^{-1}x + \tan^{-1}y = \tan^{-1}\left(\frac{x+y}{1-xy}\right)$

2. ✗ If $xy > 1$ then $\tan^{-1}x + \tan^{-1}y = \tan^{-1}\left(\frac{x+y}{1-xy}\right)$

3. ✘ If $xy = 1$ then $\tan^{-1}x + \tan^{-1}y = \tan^{-1}\left(\frac{x+y}{1-xy}\right)$

4. ✘ If $xy = 1$ then $\tan^{-1}x - \tan^{-1}y = \tan^{-1}\left(\frac{x+y}{1-xy}\right)$

Question Number : 15 Question Id : 2106887621 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In ΔABC $(a+b+c)(b+c-a) = 3bc$, then angle A =

Options :

1. ✘ 90^0

2. ✘ 120^0

3. ✔ 60^0

4. ✘ 45^0

Question Number : 16 Question Id : 2106887622 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In ΔABC , $\tan \frac{A}{2} = \frac{5}{6}$, $\tan \frac{C}{2} = \frac{2}{5}$ then a,b,c are in

Options :

1. ✘ Geometric progression
2. ✔ Arithmetic progression
3. ✘ Harmonic progression
4. ✘ Arithmetico – Geometric progression

Question Number : 17 Question Id : 2106887623 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In any ΔABC , $\tan \frac{B-C}{2} =$

Options :

1. ✘ $b \pm c \cot \frac{A}{2}$

2. ✔ $\frac{b-c}{b+c} \cot \frac{A}{2}$

3. ✘ $(b - c) \tan \frac{A}{2}$

4. ✘ $\tan \frac{C}{2}$

Question Number : 18 Question Id : 2106887624 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Conjugate of $\frac{1-i}{1+i}$ is

Options :

1. ✘ $-3i$

2. ✘ $-i$

3. ✔ i

4. ✘ $6i$

Question Number : 19 Question Id : 2106887625 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Standard form of $(-1 + 2i) + \left(\frac{1}{2} - i\right)$ is

Options :

1. ✘ $\frac{1}{2} - i$

2. ✔ $-\frac{1}{2} + i$

3. ✘ $-\frac{1}{2} - i$

4. ✘ $\frac{1}{2} \pm i$

Question Number : 20 Question Id : 2106887626 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the circle is $x^2 + y^2 + 6x - 8y + c = 0$ has radius 6 units, Then value of c is

Options :

1. ✔ -11

2. ✘ 11

3. ✘ 25

4. ✘ 6

Question Number : 21 Question Id : 2106887627 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of the parabola whose focus is (8,0) and the vertex is (0,0) is

Options :

1. ✘ $y^2 = 12x$

2. ✘ $y^2 = x$

3. ✔ $y^2 = 32x$

4. ✘ $y^2 = 16x$

Question Number : 22 Question Id : 2106887628 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The eccentricity of the ellipse $x^2 + 2y^2 = 3$ is

Options :

1. ✘ $e = \frac{3}{\sqrt{2}}$

2. ✘ $e = \frac{1}{\sqrt{3}}$

3. ✘ $e = -\frac{1}{\sqrt{2}}$

4. ✔ $e = \frac{1}{\sqrt{2}}$

Question Number : 23 Question Id : 2106887629 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the Ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, a > b$ the length of the latus rectum is _____

Options :

1. ✘ $\frac{2a^2}{b}$

2. ✔ $\frac{2b^2}{a}$

3. ✘ $\frac{2a^2}{b^2}$

4. ✘ $2ab$

Question Number : 24 Question Id : 2106887630 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of the Hyperbola with foci $(\pm 2, 0)$ and eccentricity $3/2$ is

Options :

1. ✘ $\frac{9x^2}{16^2} + \frac{9y^2}{10^2} = 1$

2. ✔

$$\frac{x^2}{16/9} - \frac{y^2}{20/9} = 1$$

3. ✘ $\frac{x^2}{16^2} - \frac{y^2}{20^2} = 1$

4. ✘ $\frac{x^2}{2^2} - \frac{y^2}{20^2} = 1$

Question Number : 25 Question Id : 2106887631 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the coordinates at one end of a diameter of the circle $x^2 + y^2 - 8x - 4y + c = 0$ are $(-3, 2)$ then the coordinates at the other end are

Options :

1. ✘ $(5, 11)$

2. ✘ $(6, 2)$

3. ✘ $(2, 11)$

4. ✔ $(11, 2)$

Question Number : 26 Question Id : 2106887632 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Time : 0

If $a > 0$, then $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} =$

Options :

1. ✘ $\log x$

2. ✘ 1

3. ✔ $\log a$

4. ✘ $\log\left(\frac{a}{x}\right)$

Question Number : 27 Question Id : 2106887633 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Differentiation of $\sin x^n$ with respect to x .

Options :

1. ✔ $nx^{n-1} \cos x^n$

2. ✘ $x^{n-1} \cos x^n$

3. ✘ $\cos x^n$

4. ✘

$$n \cos x^n$$

Question Number : 28 Question Id : 2106887634 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\frac{d}{dx} \left(\sin^{-1} \frac{x}{a} \right) =$$

Options :

1. ✓ $\frac{1}{\sqrt{a^2 - x^2}}$

2. ✗ $\frac{1}{\sqrt{a^2 + x^2}}$

3. ✗ $\frac{1}{\sqrt{x^2 - a^2}}$

4. ✗ $\frac{-1}{\sqrt{a^2 - x^2}}$

Question Number : 29 Question Id : 2106887635 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\frac{d}{dx} (e^{3 \log x}) =$$

Options :

1. ✘ $3x$

2. ✘ $3\log x$

3. ✘ $\log 3$

4. ✔ $3x^2$

Question Number : 30 Question Id : 2106887636 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\frac{d}{dx}[\log|x|] =$$

Options :

1. ✘ $\frac{1}{|x|}$

2. ✔ $\frac{1}{x}$

3. ✘ $|x|$

4. ✘ x

Question Number : 31 Question Id : 2106887637 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$y = \cos x$ then $\frac{d^2y}{dx^2}$ is

Options :

1. ✘ $\cos x$

2. ✘ $\sin x$

3. ✔ $-\cos x$

4. ✘ $-\sin x$

Question Number : 32 Question Id : 2106887638 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

Options :

1. ✔ $\tan^{-1} 3$

2. ✘ $\cot^{-1} 1$

3. ✘ $\tan^{-1} 4$

4. ✘ $\cot^{-1} 3$

Question Number : 33 Question Id : 2106887639 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The slope of the tangent to the curve $y = \frac{x-1}{x+1}$ at (0,1)

Options :

1. ✘ 4

2. ✘ -2

3. ✘ 5

4. ✔ 2

Question Number : 34 Question Id : 2106887640 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $z = x^2 + y^2$ then $x \frac{\partial z}{\partial y} - y \frac{\partial z}{\partial x} =$

Options :

1. ✘ $2y-2x$

2. ✘ $2x+2y$

3. ✔ 0

4. ✘ $4xy$

Question Number : 35 Question Id : 2106887641 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$z = \frac{x^3+y^3}{x+y}$, is a homogeneous function of degree _____

Options :

1. ✔ 2

2. ✘ 3

3. ✘ 0

4. ✘ 1

Question Number : 36 Question Id : 2106887642 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\int (x^{2/3} + 1) dx =$$

Options :

1. ✓ $\frac{3}{5}x^{5/3} + x + c$

2. ✗ $\frac{5}{3}x^{5/3} + x + c$

3. ✗ $\frac{3}{5}x^{5/3} + c$

4. ✗ $\frac{3}{5}x^{3/5} + x + c$

Question Number : 37 Question Id : 2106887643 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\int \frac{dx}{x^2-16} =$$

Options :

1. ✗ $\frac{1}{16} \log \left| \frac{x-8}{x+4} \right| + c$

2. ✗ $\frac{1}{4} \log \left| \frac{x-4}{x+4} \right| + c$

3. ✓ $\frac{1}{8} \log \left| \frac{x-4}{x+4} \right| + c$

4. ✗ $\frac{1}{16} \log \left| \frac{x-4}{x+4} \right| + c$

Question Number : 38 Question Id : 2106887644 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\int \frac{\sin(\tan^{-1}x)dx}{1+x^2} =$$

Options :

1. ✗ $-\cos x + c$

2. ✓ $-\cos (\tan^{-1}x) + c$

3. ✗ $-\sin (\tan^{-1}x) + c$

4. ✗ $(\tan^{-1}x) + c$

Question Number : 39 Question Id : 2106887645 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\int \cos \frac{x}{2} dx =$$

Options :

1. ✘ $2 \cos \frac{x}{2} + c$

2. ✔ $2 \sin \frac{x}{2} + c$

3. ✘ $2 \sin 2x + c$

4. ✘ $-2 \sin \frac{x}{2} + c$

Question Number : 40 Question Id : 2106887646 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$\int e^x \cos x dx =$$

Options :

1. ✔ $\frac{1}{2} e^x (\cos x + \sin x) + c$

2. ✘ $\frac{1}{2} e^x (\cos x - \sin x) + c$

3. ✘ $\frac{1}{2}e^x \sin x + c$

4. ✘ $\frac{1}{2}(\cos x + \sin x) + c$

Question Number : 41 Question Id : 2106887647 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The area of the region bounded by the curve $y = f(x)$, x - axis and the lines $x = a$ and $x = b$ ($b > a$) is given by

Options :

1. ✘ $\int_b^a y dx$

2. ✘ $-\int_a^b y dx$

3. ✘ $\int_a^b x dy$

4. ✔ $\int_a^b y dx$

Question Number : 42 Question Id : 2106887648 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(x)$ is an even function, then $\int_{-a}^a f(x)dx =$

Options :

1. ✘ $-\int_{-a}^a f(x)dx$

2. ✘ $2\int_{-a}^a f(x)dx$

3. ✔ $2\int_0^a f(x)dx$

4. ✘ $\int_0^a f(x)dx$

Question Number : 43 Question Id : 2106887649 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find maxima (or) minima for the curve $y = 2x^4 - x^2$

Options :

1. ✔ 'y' is minimum at $x = \pm\frac{1}{2}$

2. ✘ 'y' is maximum for $x = -\frac{1}{4}$

3. ✘ 'y' is maximum for $x = \pm \frac{1}{2}$

4. ✘ 'y' is maximum for $x = + \frac{1}{4}$

Question Number : 44 Question Id : 2106887650 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Order of the differential equation $\left[\frac{d^2y}{dx^2} + \left(\frac{dy}{dx} \right)^3 \right]^{6/5} = 6y$ is

Options :

1. ✘ 3

2. ✔ 2

3. ✘ 5

4. ✘ 1

Question Number : 45 Question Id : 2106887651 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

Options :

1. ✓ $\tan^{-1}y - \tan^{-1}x = c$

2. ✘ $\tan^{-1}y + \tan^{-1}x = c$

3. ✘ $\tan^{-1}y = c$

4. ✘ $\tan^{-1}y/x = c$

Question Number : 46 Question Id : 2106887652 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The differential equation representing the family of curves $y = mx$ where, m is arbitrary Constant is

Options :

1. ✘ $\frac{dy}{dx} - y = 0$

2. ✘ $\frac{dy}{dx} + y = 0$

3. ✓ $x \frac{dy}{dx} - y = 0$

4. ✘ $x dx - y dy = y$

Question Number : 47 Question Id : 2106887653 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the statement is true?

Options :

1. ✘ Order of differential equation is the order of the lowest order derivative occurring in the differential equation.

2. ✘ A function which satisfies the given differential equation is not its solution .

3. ✘ An equation involving derivatives of the dependent variable with respect to dependent variable is known as a differential equation.

4. ✔ Degree of a differential equation is defined if it is a polynomial equation in its Derivatives.

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Integrating factor of the differential equation $x \frac{dy}{dx} + 2y = x^2 (x \neq 0)$ is

Options :

1. ✘ x

2. ✘ $\log x$

3. ✘ $x \log x$

4. ✔ x^2

Question Number : 49 Question Id : 2106887655 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The linear form of $x \log x \frac{dy}{dx} + y = 2 \log x$ is

Options :

1. ✘ $\frac{dy}{dx} - \frac{y}{x \log x} = \frac{1}{x}$

2. ✔ $\frac{dy}{dx} + \frac{y}{x \log x} = \frac{2}{x}$

3. ✘ $\frac{dy}{dx} + \frac{y}{x \log x} = \frac{1}{x}$

4. ✘ $\frac{dy}{dx} + \frac{y}{x \log x} = 1$

Question Number : 50 Question Id : 2106887656 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The particular integral of $\frac{d^2y}{dx^2} - 4y = e^{2x}$ is

Options :

1. ✘ $\frac{1}{4} e^{2x}$

2. ✘ $\frac{1}{4x} e^{2x}$

3. ✔ $\frac{1}{4} x e^{2x}$

4. ✘ 0

Physics

Section Id :

210688151

Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 51 Question Id : 2106887657 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

N Kg^{-1} is the unit of

Options :

1. ✘ Velocity
2. ✔ Acceleration
3. ✘ Force
4. ✘ Momentum

Question Number : 52 Question Id : 2106887658 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A system has basic dimensions as density 'D', velocity 'V' and area 'A'. The dimensional representation of force in this system is

Options :

1. ✓ $A V^2 D$

2. ✗ $A V D^2$

3. ✗ $A^2 V D$

4. ✗ $A^0 V^2 D$

Question Number : 53 Question Id : 2106887659 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If The magnitude of vectors **A**, **B** and **C** are 5, 4 and 3 units respectively and $\mathbf{A} = \mathbf{B} + \mathbf{C}$, then the angle between vectors **A** and **C** is

Options :

1. ✗ $\text{Cos}^{-1}(4/5)$

2. ✗ Π

3. ✓ $\text{Cos}^{-1}(3/5)$

4. ✗ $\text{Sin}^{-1}(3/4)$

Question Number : 54 Question Id : 2106887660 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the sum of two unit vectors is also a unit vector, then the magnitude of their difference is

Options :

1. ✘ 1

2. ✘ $\frac{1}{2}$

3. ✘ $\frac{1}{\sqrt{2}}$

4. ✔ $\sqrt{3}$

Question Number : 55 Question Id : 2106887661 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A particle starting from rest moves in a straight line with uniform acceleration a . The average velocity of the particle in first 's' distance is

Options :

1. ✔ $\sqrt{\frac{as}{2}}$

2. ✘ $\sqrt{\frac{3as}{2}}$

3. ✘ $\sqrt{2as}$

4. ✘ *as*

Question Number : 56 Question Id : 2106887662 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A projectile is thrown with speed u making angle θ with the horizontal at $t = 0$. It just crosses two points of equal height at time $t = 1\text{ s}$ and $t = 3\text{ s}$ respectively. The maximum height attained by the projectile is (take $g = 10\text{ ms}^{-2}$)

Options :

1. ✘ 10m

2. ✔ 20m

3. ✘ 15m

4. ✘ 22m

Question Number : 57 Question Id : 2106887663 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A body is falling from height 'H' takes time 'T' seconds to reach the ground. The time taken to cover the first half of height is

Options :

1. ✔

$$\frac{T}{\sqrt{2}}$$

2. ✘ $\sqrt{2} T$

3. ✘ $\sqrt{3} T$

4. ✘ $\frac{T}{\sqrt{3}}$

Question Number : 58 Question Id : 2106887664 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A body sliding on ice with a velocity 8 ms^{-1} comes to rest after travelling 40 m. The coefficient of friction between the body and ice is ($g = 10 \text{ ms}^{-2}$)

Options :

1. ✘ 0.02

2. ✘ 0.05

3. ✔ 0.08

4. ✘ 0.2

Question Number : 59 Question Id : 2106887665 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a body placed on a rough inclined plane of gradient 1 in 4, just begins to slide, then coefficient of friction between the plane and body is

Options :

1. ✘ $\frac{2}{\sqrt{15}}$

2. ✘ $\frac{1}{\sqrt{2}}$

3. ✘ $\frac{1}{\sqrt{5}}$

4. ✔ $\frac{1}{\sqrt{15}}$

Question Number : 60 Question Id : 2106887666 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A cube of 10 N weight rests on a rough inclined plane of slope 3 in 5. If the coefficient of friction between plane and cube is 0.6, then minimum force required to start the cube moving up the plane is

Options :

1. ✘ 2N

2.

✘ 6N

3. ✔ 10.8N

4. ✘ 4.5N

Question Number : 61 Question Id : 2106887667 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A pump can take out 7200 Kg of water per hour from a 100 m deep well. If the efficiency of the pump is 50% then power of the pump is ($g = 10 \text{ ms}^{-2}$)

Options :

1. ✘ 2 KW

2. ✔ 4 KW

3. ✘ 7.2 KW

4. ✘ 3.6 KW

Question Number : 62 Question Id : 2106887668 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a force $\mathbf{F} = \mathbf{i} + 2\mathbf{j} + 3\mathbf{k}$ acts on a body to move it from $\mathbf{r}_1 = \mathbf{i} + \mathbf{j} + \mathbf{k}$ to $\mathbf{r}_2 = \mathbf{i} - \mathbf{j} + 2\mathbf{k}$, then the work done by the force is

Options :

1. ✘ -3 J

2. ✔ -1 J

3. ✘ 2 J

4. ✘ 3 J

Question Number : 63 Question Id : 2106887669 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The K.E. of a body moving with a speed of 10 m/s is 30 J. If its speed becomes 30 m/s, then its K.E. will be

Options :

1. ✘ 10 J

2. ✘ 90 J

3. ✘ 180 J

4. ✔ 270 J

Question Number : 64 Question Id : 2106887670 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum speed of a particle executing SHM is 1 m/s and maximum acceleration is 1.57 m/s^2 . Its time period is

Options :

1. ✓ 4 sec

2. ✗ 1.57 sec

3. ✗ 2 sec

4. ✗ $\frac{1}{1.57}$

Question Number : 65 Question Id : 2106887671 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A girl is swinging on a swing in the sitting position. If the girl stands up, the time period of the string will

Options :

1. ✗ Increase

2. ✓

Decrease

- 3. ✘ Remains same
- 4. ✘ Becomes erratic

Question Number : 66 Question Id : 2106887672 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A light spring supports 200 gm weight at its lower end; it oscillates with a period of 1 sec.
How much weight must be removed from the lower end to reduce the period to 0.5 sec?

Options :

- 1. ✘ 100 gm.
- 2. ✘ 50 gm.
- 3. ✔ 150 gm.
- 4. ✘ 200 gm.

Question Number : 67 Question Id : 2106887673 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The velocity of sound in any medium depends upon

Options :

1. ✘ Intensity and elasticity
2. ✘ Amplitude and density
3. ✔ elasticity and density
4. ✘ Amplitude and elasticity

Question Number : 68 Question Id : 2106887674 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The beat frequency produced by the vibrations of $x_1 = A \sin (320\pi t)$ and $x_2 = A \sin (326\pi t)$ is

Options :

1. ✘ 6
2. ✘ 4
3. ✘ 2
4. ✔ 3

Question Number : 69 Question Id : 2106887675 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Boyle's law is stated by $PV = C$, C depends on

Options :

1. ✘ Nature of gas
2. ✘ Atomic weight of gas
3. ✘ Temperature of gas
4. ✔ Quantity and temperature of gas

Question Number : 70 Question Id : 2106887676 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of state for 5g of oxygen(O_2) at pressure P and temperature T, when occupying a volume V, will be (R is universal gas constant)

Options :

1. ✘ $PV = 5RT$

2. ✘ $PV = \frac{5}{2} RT$

3. ✘

$$PV = \frac{5}{16} RT$$

4. ✓ $PV = \frac{5}{32} RT$

Question Number : 71 Question Id : 2106887677 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The volume of a gas at constant pressure of 10^3 N/m^2 expands by 0.25m^3 . The work done in this process is

Options :

1. ✗ 25J

2. ✗ 50J

3. ✓ 250J

4. ✗ 5J

Question Number : 72 Question Id : 2106887678 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For an adiabatic expansion of a perfect gas the value of $\frac{\Delta P}{P}$ is equal to

Options :

1. ✗

$$\frac{\Delta V}{V}$$

2. ✘ $\gamma \frac{\Delta V}{V}$

3. ✔ $-\gamma \frac{\Delta V}{V}$

4. ✘ $\gamma - \frac{\Delta V}{V}$

Question Number : 73 Question Id : 2106887679 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

First law of Thermodynamics is a special case of

Options :

1. ✘ Boyle's law

2. ✘ Charles law

3. ✘ Law of conservation of mass

4. ✔ Law of conservation of energy

Question Number : 74 Question Id : 2106887680 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the critical angle for total internal reflection from a medium to vacuum is 30° , the velocity of light in the medium is

Options :

1. ✘ $3 \times 10^8 \text{ m/s}$
2. ✔ $1.5 \times 10^8 \text{ m/s}$
3. ✘ $\sqrt{3} \times 10^8 \text{ m/s}$
4. ✘ $2 \times 10^8 \text{ m/s}$

Question Number : 75 Question Id : 2106887681 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Light rays of wave length $4.36 \times 10^{-7} \text{ m}$ incident on a metal surface of work function 1.24 eV. The stopping potential required to stop the emission of photoelectrons is

Options :

1. ✔ 1.6 eV
2. ✘ 1.24 eV

3. ✖ 3.2 eV

4. ✖ 4.8 eV

Chemistry

Section Id :	210688152
Section Number :	3
Mandatory or Optional :	Mandatory
Number of Questions :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 76 Question Id : 2106887682 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to Bohr's theory of hydrogen atom, the angular momentum of electron in fourth orbit of H-atom is equal to

Options :

1. ✖ $\frac{h}{2\pi}$

2. ✓ $\frac{2h}{\pi}$

3. ✗ $\frac{3h}{2\pi}$

4. ✗ $\frac{4h}{\pi}$

Question Number : 77 Question Id : 2106887683 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The quantum number which describes the shape of an atomic orbital is

Options :

1. ✓ Azimuthal Quantum Number

2. ✗ Principal Quantum Number

3. ✗ Spin Quantum Number

4. ✗ Magnetic Quantum Number

Question Number : 78 Question Id : 2106887684 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the element in which the ratio of s-electrons to p-electrons is 3:5

Options :

1. ✘ P

2. ✘ Al

3. ✔ S

4. ✘ K

Question Number : 79 Question Id : 2106887685 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The pair of molecules in which the central atom has octet of electrons is

Options :

1. ✘ $\text{BeCl}_2, \text{BF}_3$

2. ✘ $\text{H}_2\text{O}, \text{BeCl}_2$

3. ✓ $\text{H}_2\text{O}, \text{NH}_3$

4. ✗ NH_3, BF_3

Question Number : 80 Question Id : 2106887686 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The electronic configuration of an element M is $[\text{Ne}]3\text{S}^1$ and that of element X is $[\text{He}]2\text{S}^22\text{P}^5$. The type of bond present between M and X is

Options :

1. ✗ Covalent Bond

2. ✓ Electrovalent Bond

3. ✗ Co-ordinate Covalent Bond

4. ✗ Hydrogen Bond

Question Number : 81 Question Id : 2106887687 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The absolute weight of one molecule of water (in g) is ($N_A=6 \times 10^{23} \text{ mol}^{-1}$)

Options :

1. ✘ 1.5×10^{-23}

2. ✔ 3.0×10^{-23}

3. ✘ 4.5×10^{-23}

4. ✘ 2.0×10^{-23}

Question Number : 82 Question Id : 2106887688 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The weight of sodium sulphate (molar mass 142 g mol^{-1}) required to prepare 500 ml of 0.03 M solution is

Options :

1. ✔ 2.13 g

2. ✘ 4.26 g

3. ✘ 1.065 g

4. ✘ 3.195 g

Question Number : 83 Question Id : 2106887689 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The number of H^+ ions present in 100 ml of 0.05 M H_2SO_4 solution is ($N_A=6 \times 10^{23} \text{ mol}^{-1}$)

Options :

1. ✘ 6.0×10^{24}

2. ✘ 6.0×10^{22}

3. ✔ 6.0×10^{21}

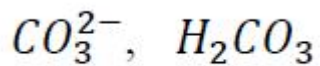
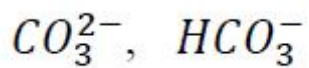
4. ✘ 3.0×10^{23}

Question Number : 84 Question Id : 2106887690 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

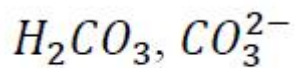
The conjugate acid and conjugate base of HCO_3^- are respectively

Options :

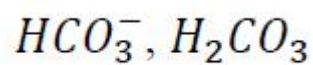
1. ✘



2. ✘



3. ✔



4. ✘

Question Number : 85 Question Id : 2106887691 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The pH of 0.005 M H_2SO_4 solution will be;

Options :

1. ✘ 5

2. ✔ 2

3. ✘ 3

4. ✘ 4

Question Number : 86 Question Id : 2106887692 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In an electrochemical cell, the electrons flow from

Options :

Cathode to Anode

1. ✘

Anode to Cathode

2. ✔

Anode to Solution

3. ✘

Solution to Cathode

4. ✘

Question Number : 87 Question Id : 2106887693 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many faradays are required to reduce 1 mole of MnO_4^- ions to Mn^{2+} ions?

Options :

1. ✔ 5

2. ✘

2

3. ✘ 4

4. ✘ 3

Question Number : 88 Question Id : 2106887694 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

At 298 K, the emf of the cell, $M|M^{2+}(1M) || Cu^{2+}(1M) | Cu$ is 'x' V. If $E_{Cu^{2+}|Cu}^0 = +0.34V$,

then $E_{M^{2+}|M}^0$ (in V) is

Options :

1. ✘ $(x - 0.34)$

2. ✔ $(0.34 - x)$

3. ✘ $(0.34 + x)$

4. ✘ $\frac{0.34}{x}$

Question Number : 89 Question Id : 2106887695 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Identify the strongest reducing agent from the following:

Options :

1. ✓ $E_{K^+|K}^0 = -2.93 \text{ V}$

2. ✗ $E_{Al^{3+}|Al}^0 = -1.66 \text{ V}$

3. ✗ $E_{Zn^{2+}|Zn}^0 = -0.76 \text{ V}$

4. ✗ $E_{Ag^+|Ag}^0 = +0.34 \text{ V}$

Question Number : 90 Question Id : 2106887696 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The formula of Zeolite can be represented as Na_2Z . The metal atom present in Z is

Options :

1. ✗ Zn

2. ✗ Ca

3. ✘ Mg

4. ✔ Al

Question Number : 91 Question Id : 2106887697 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following salts causes maximum hardness to water sample, when they are in equal amounts?

Options :

1. ✘ MgSO_4 (Molecular Weight = 120u)

2. ✔ MgCl_2 (Molecular Weight = 95u)

3. ✘ CaCl_2 (Molecular Weight = 111u)

4. ✘ $\text{Ca}(\text{HCO}_3)_2$ (Molecular Weight = 162u)

Question Number : 92 Question Id : 2106887698 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Permanent hardness of water cannot be removed by

Options :

1. ✓ Boiling the hard water
2. ✗ Treatment with washing soda
3. ✗ Passing through Zeolite
4. ✗ Passing through ion exchange resins

Question Number : 93 Question Id : 2106887699 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following statements is not correct about stress cells?

Options :

1. ✗ They are formed between different parts of the same metal
2. ✓ Stressed part of the metal acts as cathode
3. ✗ Stressed part of the metal acts as anode

4. ✘ Anodic part undergoes corrosion

Question Number : 94 Question Id : 2106887700 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Tarnishing of silver is due to the formation of

Options :

1. ✘ AgCl

2. ✘ Ag_2CO_3

3. ✘ Ag_2O

4. ✔ Ag_2S

Question Number : 95 Question Id : 2106887701 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a natural polymer?

Options :

1. ✘ Wool

2. ✘ Cellulose

3. ✘ Strach

4. ✔ Rayon

Question Number : 96 Question Id : 2106887702 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Neoprene is an example of

Options :

1. ✔ Elastomer

2. ✘ Thermoplastic Polymer

3. ✘ Thermosetting Polymer

4. ✘ Co-Polymer

Question Number : 97 Question Id : 2106887703 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The element that is added to raw rubber vulcanization is

Options :

1. ✓ S

2. ✗ Se

3. ✗ C

4. ✗ B

Question Number : 98 Question Id : 2106887704 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

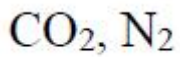
The major components of water gas are

Options :

1. ✓ H_2, CO

2. ✗ H_2, CO_2

3. ✗ CO, N_2



4. ✘

Question Number : 99 Question Id : 2106887705 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a greenhouse gas?

Options :

1. ✘ O_3

2. ✘ CO_2

3. ✘ CH_4

4. ✔ N_2

Question Number : 100 Question Id : 2106887706 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The acid that is believed to be mainly responsible for the damage of Taj mahal is

Options :

1. ✔ H_2SO_4

2. ✖ HF

3. ✖ H₃PO₄

4. ✖ HCl

Ceramic Technology

Section Id :	210688153
Section Number :	4
Mandatory or Optional :	Mandatory
Number of Questions :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 101 Question Id : 2106887707 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total number of Polymorphic forms of Silica is

Options :

1. ✘ 2

2. ✔ 3

3. ✘ 4

4. ✘ 5

Question Number : 102 Question Id : 2106887708 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is an Igneous rock?

Options :

1. ✔ Granite

2. ✘ Marble

3. ✘ Sandstone

4. ✘ Limestone

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Petrology deals with

Options :

1. ✘ Formation of earth
2. ✔ Formation of rocks
3. ✘ Plants
4. ✘ Animals

Question Number : 104 Question Id : 2106887710 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The molten mass inside the earth crust is known as

Options :

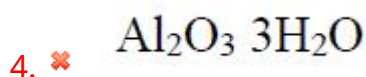
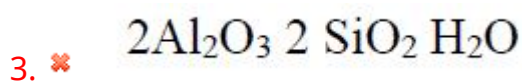
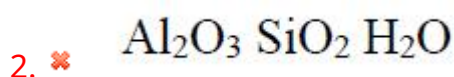
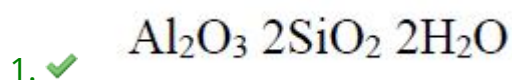
1. ✘ Lava
2. ✔ Magma
3. ✘ Igneous rocks
4. ✘

Metamorphic rocks

Question Number : 105 Question Id : 2106887711 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The chemical formula of Kaolin is

Options :



Question Number : 106 Question Id : 2106887712 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Orthoclase is also known as

Options :

1. ✗ Soda feldspar

2. ✓ Potash feldspar

3. ✘ Lime feldspar

4. ✘ Barium feldspar

Question Number : 107 Question Id : 2106887713 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The chemical formula of Litharge is

Options :

1. ✘ PbO_2

2. ✘ Pb_3O_4

3. ✔ PbO

4. ✘ $\text{Pb}(\text{NO}_3)_2$

Question Number : 108 Question Id : 2106887714 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Vermiculite is

Options :

1. ✘ Kaolinitic
2. ✘ Montmorillonitic
3. ✔ Mica bearing
4. ✘ Sepiolite

Question Number : 109 Question Id : 2106887715 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Biotite is

Options :

1. ✔ Black mica
2. ✘ White mica
3. ✘ Pink mica
4. ✘ Blue mica

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Moh's Hardness of Quartz is

Options :

1. ✘ 6

2. ✘ 8

3. ✘ 10

4. ✔ 7

Question Number : 111 Question Id : 2106887717 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wollastonite is mainly used in

Options :

1. ✘ Insulating bricks

2. ✘ Cement

3. ✔ Wall tiles

4. ✘ Glass

Question Number : 112 Question Id : 2106887718 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Reactive Alumina is used in

Options :

1. ✓ Castable refractories
2. ✗ Glass
3. ✗ Cement
4. ✗ Whiteware

Question Number : 113 Question Id : 2106887719 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The chemical formula of Fluorspar is

Options :

1. ✗ MgF_2
2. ✓ CaF_2
- 3.

✘ TiF_2

4. ✘ SrF_2

Question Number : 114 Question Id : 2106887720 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Oligoclase is a

Options :

1. ✓ Lime-soda feldspar

2. ✘ Lime -potash feldspar

3. ✘ Lime feldspar

4. ✘ Soda feldspar

Question Number : 115 Question Id : 2106887721 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following materials has highest plasticity ?

Options :

1. ✘ Ball clay
2. ✘ China clay
3. ✘ Fire clay
4. ✔ Bentonite

Question Number : 116 Question Id : 2106887722 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the potential on the surface of the charged particle moving through the liquid ?

Options :

1. ✔ Zeta potential
2. ✘ Electrostatic potential
3. ✘ Electric potential
4. ✘ Work potential

Question Number : 117 Question Id : 2106887723 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sanitary wares are produced by

Options :

1. ✘ Pressing
2. ✘ Extrusion
3. ✘ Gel casting
4. ✔ Slip casting

Question Number : 118 Question Id : 2106887724 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In glaze composition, Sum of..... oxides should be equal to

one

Options :

1. ✘ Acidic
2. ✘ Amphoteric
3. ✘

Basic

4. ✓ Acidic & Basic

Question Number : 119 Question Id : 2106887725 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is made of cheaper grade raw materials and salt glazed?

Options :

1. ✘ Porcelain

2. ✓ Stone ware

3. ✘ Earthen ware

4. ✘ Terracotta

Question Number : 120 Question Id : 2106887726 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Hard porcelain is fired at

Options :

1.

❌ 1000°C

2. ❌ 1250°C

3. ✓ 1450°C

4. ❌ 1700°C

Question Number : 121 Question Id : 2106887727 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a Glaze defect?

Options :

1. ❌ Black spots

2. ❌ Specks

3. ❌ Dull color

4. ✓ Peeling

Question Number : 122 Question Id : 2106887728 Display Question Number : Yes Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is a opacifier?

Options :

1. ✘ ZnO

2. ✘ Al₂O₃

3. ✔ CaF₂

4. ✘ MgO

Question Number : 123 Question Id : 2106887729 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is a vitreous, translucent product

Options :

1. ✘ Earthen ware

2. ✔ Bone China

3. ✘ Stone ware

4. ✘ Terracotta

Question Number : 124 Question Id : 2106887730 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which oxide is used to produce green color in Glazes?

Options :

1. ✘ Cobalt oxide
2. ✔ Chromium oxide
3. ✘ Copper oxide
4. ✘ Vanadium oxide

Question Number : 125 Question Id : 2106887731 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ceramic whiteware in which Magnesium metasilicate is the essential crystalline phase is

Options :

1. ✘ Cordierite porcelain
2. ✔ Steatite porcelain

3. ✘ Vitreous china

4. ✘ Titania porcelain

Question Number : 126 Question Id : 2106887732 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is a measure of the energy lost when an insulator transforms part of electrical energy into heat

Options :

1. ✘ Loss factor

2. ✘ Dielectric constant

3. ✘ Specific resistance

4. ✔ Power factor

Question Number : 127 Question Id : 2106887733 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following factors doesn't affect the castability of slip?

Options :

1. ✘ Composition
2. ✘ Viscosity of slip
3. ✘ Specific gravity of slip
4. ✔ Impurities present in slip

Question Number : 128 Question Id : 2106887734 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Mother mold of POP is made by

Options :

1. ✘ Gypsum
2. ✔ Alpha POP
3. ✘ Beta POP
4. ✘ Phosphogypsum

Question Number : 129 Question Id : 2106887735 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Differential rate of loss of water from different parts of the body can cause

Options :

1. ✓ Warpage

2. ✗ Cracks

3. ✗ Crazing

4. ✗ Peeling

Question Number : 130 Question Id : 2106887736 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

.....glazes have high amount of ZnO

Options :

1. ✗ Raw

2. ✓ Bristol

3. ✗ Porcelain

4. ✘ Crystalline

Question Number : 131 Question Id : 2106887737 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is used to measure density of slip

Options :

1. ✘ Andreasen's pipette

2. ✔ Hydrometer

3. ✘ BET apparatus

4. ✘ IR balance

Question Number : 132 Question Id : 2106887738 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following dryers are used for rapid drying of ceramic tiles ?

Options :

1. ✘ Tunnel dryer

2. ✘ Rotary dryer

3. ✘ Chamber dryer

4. ✔ Mangle dryer

Question Number : 133 Question Id : 2106887739 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is added to get blue color in glaze

Options :

1. ✘ NiO

2. ✘ ZnO

3. ✔ CoO

4. ✘ MnO

Question Number : 134 Question Id : 2106887740 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Andreasen's pipette is used to measure

Options :

1. ✘ Density
2. ✔ Particle size
3. ✘ Residue
4. ✘ Thixotropy

Question Number : 135 Question Id : 2106887741 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... process is used to make complex shapes in whiteware production

Options :

1. ✘ Extrusion
2. ✘ Dry pressing
3. ✘ Ram pressing
4. ✔ Slip casting

Question Number : 136 Question Id : 2106887742 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is an Acidic refractory?

Options :

1. ✘ Magnesite
2. ✘ Chromite
3. ✔ Silica
4. ✘ Dolomite

Question Number : 137 Question Id : 2106887743 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is used as bonding agent in Silica refractory

Options :

1. ✘ Zircon flour
2. ✘ Chromia powder
- 3.

✓ Hydrated lime

4. ✘ Hydrated alumina

Question Number : 138 Question Id : 2106887744 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Coke oven walls are constructed with

Options :

1. ✓ Silica refractories

2. ✘ Fire clay refractories

3. ✘ Magnesite refractories

4. ✘ Dolomite refractories

Question Number : 139 Question Id : 2106887745 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hearth of Blast furnace is made of

Options :

Silica Refractories

1. ✘

Carbon refractories

2. ✔

Magnesite refractories

3. ✘

Chromite refractories

4. ✘

Question Number : 140 Question Id : 2106887746 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Dead burning of Magnesite is carried out at

Options :

1200-1350°C

1. ✘

800-950°C

2. ✘

1600-1750°C

3. ✔

1300-1450°C

4. ✘

Question Number : 141 Question Id : 2106887747 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following phases is a high temperature phase in Silica refractories?

Options :

1. ✘ Alpha quartz

2. ✘ Tridymite

3. ✔ Cristobalite

4. ✘ Beta quartz

Question Number : 142 Question Id : 2106887748 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Silica bricks show poor thermal shock resistance below

Options :

1. ✘ 1000°C

2. ✔ 600°C

3. ✘ 1400°C

4. ✘ 800°C

Question Number : 143 Question Id : 2106887749 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The porosity of Carbon refractories varies from

Options :

1. ✘ 5-10%

2. ✘ 10-15%

3. ✔ 20-25%

4. ✘ 35-40%

Question Number : 144 Question Id : 2106887750 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Chrome refractories undergo bursting when they are in contact with

Options :

1. ✔ Iron oxide

2. ✘ Magnesium oxide

3. ✘ Calcium oxide

4. ✘ Gypsum

Question Number : 145 Question Id : 2106887751 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Electrocast AZS refractories contain% of porosity

Options :

1. ✔ <0.5

2. ✘ 5

3. ✘ <2

4. ✘ <10

Question Number : 146 Question Id : 2106887752 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

.....refractories are used in burning zone of Rotary kiln

Options :

1. ✘ Fire clay
2. ✘ SiC
3. ✔ Chrome-Mag
4. ✘ Alumina

Question Number : 147 Question Id : 2106887753 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

.....test is conducted to find refractoriness

Options :

1. ✔ PCE
2. ✘ RUL
3. ✘ Permeability
4. ✘ PLC

Question Number : 148 Question Id : 2106887754 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following polymorphic transformation of Silica has the maximum high volume expansion?

Options :

1. ✘ Beta quartz to beta cristobalite
2. ✔ Alpha quartz to beta cristobalite
3. ✘ Beta quartz to beta tridymite
4. ✘ Alpha cristobalite to beta cristobalite

Question Number : 149 Question Id : 2106887755 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Plumbago refractories are made of

Options :

1. ✘ SiC
2. ✘ Si₃N₄

3. ✓ Graphite

4. ✘ Zirconia

Question Number : 150 Question Id : 2106887756 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The crystal structure of Kyanite is

Options :

1. ✘ Cubic

2. ✘ Monoclinic

3. ✓ Triclinic

4. ✘ Orthorhombic

Question Number : 151 Question Id : 2106887757 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following refractory bricks has high percentage of Alumina?

Options :

1. ✘ Kyanite

2. ✘ Mullite

3. ✘ Andalusite

4. ✔ Bauxite

Question Number : 152 Question Id : 2106887758 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Cohort standard Electrocast refractory bricks contain

Options :

1. ✔ Mullite only

2. ✘ Mullite + Zirconia

3. ✘ Mullite + Cristobalite

4. ✘ Zirconia + Cristobalite

Question Number : 153 Question Id : 2106887759 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... refractories have close value of PCE & RUL

Options :

1. ✓ Silica
2. ✗ High Alumina
3. ✗ Dolomite
4. ✗ Fireclay

Question Number : 154 Question Id : 2106887760 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a neutral refractory?

Options :

1. ✗ SiC
2. ✗ Chromite
3. ✗ Graphite

4. ✓ Magnesite

Question Number : 155 Question Id : 2106887761 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Highest melting point oxide refractory is

Options :

1. ✘ Alumina

2. ✓ Thoria

3. ✘ Zirconia

4. ✘ Magnesia

Question Number : 156 Question Id : 2106887762 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Viscosity of glass at Annealing temperature is

Options :

1. ✘ 10^4 Pa

2. ✘ $10^{7.6}$ Pa

3. ✔ 10^{13} Pa

4. ✘ $10^{14.4}$ Pa

Question Number : 157 Question Id : 2106887763 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The presence of following ion has large effect on the color of glass

Options :

1. ✘ Na^+ ions

2. ✔ Fe^{2+} ions

3. ✘ Ca^{2+} ions

4. ✘ K^+ ions

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a sheet glass manufacturing process?

Options :

1. ✘ Pittsburgh process
2. ✘ Fourcault process
3. ✘ Colburn process
4. ✔ Drawing

Question Number : 159 Question Id : 2106887765 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Marvel glass is called

Options :

1. ✘ Parison
2. ✔ Crany
3. ✘ Puffed glass

4. ✘ Preform

Question Number : 160 Question Id : 2106887766 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Alternate layer of glass and..... is present in laminated glass

Options :

1. ✘ PVA

2. ✘ PEG

3. ✔ PVB

4. ✘ PVC

Question Number : 161 Question Id : 2106887767 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The temperature at which supercooled substance transformed into glass is called

Options :

1. ✘ Melting temperature

2. ✘ Boiling temperature
3. ✔ Glass transition temperature
4. ✘ Softening temperature

Question Number : 162 Question Id : 2106887768 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is used to remove the green tint of molten glass?

Options :

1. ✔ Manganese dioxide
2. ✘ Chromium oxide
3. ✘ Ferric oxide
4. ✘ Cobalt oxide

Question Number : 163 Question Id : 2106887769 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The Jena glass contains

Options :

1. ✘ Lead and bismuth oxide
2. ✔ Zinc and barium borosilicate
3. ✘ Beryllium and magnesium oxide
4. ✘ Aluminum and vanadium oxide

Question Number : 164 Question Id : 2106887770 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The E- glass, S-glass and Z-glasses are

Options :

1. ✔ Fiber glass
2. ✘ Optical glass
3. ✘ Sheet glass

4. ✘ Toughened glass

Question Number : 165 Question Id : 2106887771 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

.....stress is created on surface of glass in tempering

Options :

- 1. ✘ Tensile
- 2. ✔ Compressive
- 3. ✘ Shear
- 4. ✘ Torsion

Question Number : 166 Question Id : 2106887772 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which sequence of steps are correct for glass manufacturing process ?

Options :

- 1. ✘ Batch, shaping, melting, annealing
- 2.

✓ Batch, melting, shaping, annealing

3. ✘ Annealing, Batch, Melting, shaping

4. ✘ Shaping, annealing, batch, melting

Question Number : 167 Question Id : 2106887773 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is an example of Hard glass ?

Options :

1. ✘ Lead glass

2. ✘ Soda lime silica glass

3. ✓ Alumina silicate glass

4. ✘ Sodium silicate glass

Question Number : 168 Question Id : 2106887774 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not a Zachariasen rule ?

Options :

1. ✘ Oxygen polyhedral share only corners
2. ✔ The oxygen should link more than 4 glass forming atoms
3. ✘ Three dimensional network should form
4. ✘ Co-ordination number of glass forming atom should be small

Question Number : 169 Question Id : 2106887775 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of removal of gases from the glass surface is known as

Options :

1. ✘ Vaporization
2. ✔ Refining
3. ✘ Heat conditioning
4. ✘ Homogenizing

Question Number : 170 Question Id : 2106887776 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following acid attacks the glass

Options :

1. ✘ HCL

2. ✘ H_2SO_4

3. ✘ Nitric acid

4. ✔ HF

Question Number : 171 Question Id : 2106887777 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For boosting of glass batches by electrical heating which electrode is normally used ?

Options :

1. ✔ Mo Electrode

2. ✘ Ag electrode

3. ✘ Pt electrode

4. ✘ C electrode

Question Number : 172 Question Id : 2106887778 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is not a network former

Options :

1. ✘ SiO_2

2. ✘ B_2O_3

3. ✔ CaO

4. ✘ P_2O_5

Question Number : 173 Question Id : 2106887779 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is used to impart yellow color in Glass ?

Options :

1.

1. ✘ ZnS

2. ✘ FeS

3. ✘ CuS

4. ✔ CdS

Question Number : 174 Question Id : 2106887780 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is used as nucleating agent in Glass Ceramics

Options :

1. ✘ Al₂O₃

2. ✘ SiO₂

3. ✔ ZrO₂

4. ✘ ZnO

Question Number : 175 Question Id : 2106887781 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The Pyrex glass contains

Options :

1. ✓ Boron trioxide

2. ✗ Aluminium oxide

3. ✗ Lead oxide

4. ✗ Zinc oxide

Question Number : 176 Question Id : 2106887782 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

The Atomic packing factor of FCC is

Options :

1. ✗ 0.52

2. ✗ 0.68

3. ✓ 0.74

4. ✗ 0.82

Question Number : 177 Question Id : 2106887783 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The missing of Anion and Cation from its regular lattice point is called

Options :

1. ✘ Frenkel defect
2. ✔ Schottky defect
3. ✘ Vacancy
4. ✘ Edge dislocation

Question Number : 178 Question Id : 2106887784 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The lowest eutectic temperature in Al_2O_3 - SiO_2 phase diagram is

Options :

1. ✔ 1580°C
2. ✘ 1480°C

3. ✘ 1680°C

4. ✘ 1780°C

Question Number : 179 Question Id : 2106887785 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The units of diffusivity D are

Options :

1. ✔ $\text{m}^2 \text{Sec}^{-1}$

2. ✘ $\text{m}^2 \text{sec}^1$

3. ✘ $\text{m}^{-2} \text{sec}^{-1}$

4. ✘ $\text{m}^{-2} \text{sec}^1$

Question Number : 180 Question Id : 2106887786 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The reaction that yields two solid phases on cooling a single liquid phase is called

Options :

1. ✘ Eutectoid
2. ✘ Peritectoid
3. ✔ Eutectic
4. ✘ Congruent

Question Number : 181 Question Id : 2106887787 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Le Chatelier apparatus is used for

Options :

1. ✘ Compressive strength test
2. ✘ Initial setting time test
3. ✘ Fineness test
4. ✔ Soundness test

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

As per IS 269-1975, minimum initial setting time of ordinary Portland cement is

Options :

1. ✘ 15 min

2. ✘ 60min

3. ✔ 30min

4. ✘ 75min

Question Number : 183 Question Id : 2106887789 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is used as retarder in cement

Options :

1. ✔ Gypsum

2. ✘ Limestone

3. ✘ Magnesite

4. ✘ Calcite

Question Number : 184 Question Id : 2106887790 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which is the major constituent in Portland cement?

Options :

1. ✔ C_3S

2. ✘ C_2S

3. ✘ C_3A

4. ✘ C_4AF

Question Number : 185 Question Id : 2106887791 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is not Pozzolanic material ?

Options :

1. ✘ Fly ash

2. ✘ Silica fume

3. ✓ Cinder

4. ✘ Slag

Question Number : 186 Question Id : 2106887792 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The crown of Glass tank furnace is constructed with

Options :

1. ✓ Silica refractories

2. ✘ Fireclay refractories

3. ✘ Magnesite refractories

4. ✘ Chromite refractories

Question Number : 187 Question Id : 2106887793 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following type of coal is the best quality of coal?

Options :

1.

- ✘ Peat
- 2. ✘ Sub-bituminous
- 3. ✘ Lignite
- 4. ✔ Bituminous

Question Number : 188 Question Id : 2106887794 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is a continuous kiln

Options :

- 1. ✘ Downdraft kiln
- 2. ✔ Tunnel kiln
- 3. ✘ Updraft kiln
- 4. ✘ Shuttle kiln

Question Number : 189 Question Id : 2106887795 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

.....is used for firing of Tiles

Options :

1. ✘ Rotary kiln
2. ✘ Shaft kiln
3. ✔ Roller hearth kiln
4. ✘ Updraft kiln

Question Number : 190 Question Id : 2106887796 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which is the major constituent in Natural gas ?

Options :

1. ✔ Methane
2. ✘ Ethane
3. ✘

Propane

4. ✖ Butane

Question Number : 191 Question Id : 2106887797 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following oxides has high dielectric constant ?

Options :

1. ✖ SiO_2

2. ✖ FeTiO_3

3. ✔ BaTiO_3

4. ✖ SrTiO_3

Question Number : 192 Question Id : 2106887798 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following can be either an n-type or p-type extrinsic semiconductor depending on the dopant?

Options :

1. ✘ ZnO

2. ✔ SiC

3. ✘ Cu₂O

4. ✘ Fe₃O₄

Question Number : 193 Question Id : 2106887799 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following exhibits Meissner effect?

Options :

1. ✘ Insulator

2. ✘ Conductor

3. ✔ Semiconductor

4.

Superconductor



Question Number : 194 Question Id : 2106887800 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which ion has the potential to produce highest magnetic moment?

Options :

1. ✘ Co^{2+}

2. ✘ Fe^{2+}

3. ✔ Fe^{3+}

4. ✘ Mn^{3+}

Question Number : 195 Question Id : 2106887801 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is characterized by spontaneous polarization, reversal of polarization by application of an electric field and presence of a hysteresis loop?

Options :

1. ✘

Phosphorescence

2. ✘ Piezoelectricity

3. ✔ Ferroelectricity

4. ✘ Pyroelectricity

Question Number : 196 Question Id : 2106887802 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of thickness decrease to the length increase is referred to as

Options :

1. ✔ Poisson's ratio

2. ✘ Young's modulus

3. ✘ Tensile strength

4. ✘ Compressive strength

Question Number : 197 Question Id : 2106887803 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following processes would most likely result in the lowest pickup of impurities?

Options :

1. ✘ Ball milling
2. ✘ Vibratory milling
3. ✔ Sol-gel process
4. ✘ Attrition milling

Question Number : 198 Question Id : 2106887804 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is a high temperature form of SiC?

Options :

1. ✔ α
2. ✘ β
3. ✘ γ

4. ✘ δ

Question Number : 199 Question Id : 2106887805 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

..... is used as densification aid in BeO

Options :

1. ✘ FeO

2. ✘ CoO

3. ✔ Li_2O

4. ✘ Y_2O_3

Question Number : 200 Question Id : 2106887806 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following has zero electrical resistance?

Options :

1. ✘ Insulator

2. ✘ Conductor

3. ✘ Semiconductor

4. ✔ Superconductor