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 marices

3. ✖ Square ad 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 $\sin 210^0$

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 $7sin^2\theta + 3cos^2\theta = 4$, 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 $\Delta ABC, \tan\frac{B-C}{2} =$

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

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

Options :

1. ✖ $logx$

2. ✖ 1

3. ✔ $loga$

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. ✔ $nx^{n-1}cosx^n$

2. ✖ $x^{n-1}cosx^n$

3. ✖ $cosx^n$

4. ✖

$ncosx^n$

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

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

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. ✔ $\text{Tan}^{-1}3$

2. ✖ $\cot^{-1} 1$

3. ✖ $\text{Tan}^{-1}4$

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. ✔ $\frac{3}{5}x^{\frac{5}{3}} + x + c$

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

3. ✖ $\frac{3}{5}x^{\frac{5}{3}} + c$

4. ✖ $\frac{3}{5}x^{\frac{3}{5}} + x + c$

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

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

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. ✖ xdx-ydy =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.

Question Number : 48 Question Id : 2106887654 Display Question Number : Yes Is Question

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. ✔ $\frac{1}{4}xe^{2x}$

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 **A** = **B** + **C**, then the angle between vectors **A** and **C** is

Options :

1. ✖ $Cos^{-1}(4/5)$

2. ✖ Π

3. ✔ $Cos^{-1}(3/5)$

4. ✖ $Sin^{-1}(3/4)$

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. ✖ $1/2$

3. ✖ $1/\sqrt{2}$

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 = 1s and t = 3s respectively. The maximum height attained by the projectile is (take $g = 10\ ms^{-2}$)

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 ($g = 10\ ms^{-2}$)

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 ($g = 10\ ms^{-2}$)

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. ✖ 3×10^8 m/s

2. ✔ 1.5×10^8 m/s

3. ✖ $\sqrt{3} \times 10^8$ m/s

4. ✖ 2×10^8 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 4.36×10^{-7} 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. ✖ $BeCl_2$, BF_3

2. ✖ H_2O, $BeCl_2$

3. ✔ H_2O, 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 $[Ne]3S^1$ and that of element X is $[He]2S^22P^5$. 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=6x10^{23} 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=6x10^{23} 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. ✖

CO_3^{2-}, HCO_3^-

2. ✖ CO_3^{2-}, H_2CO_3

3. ✔ H_2CO_3, CO_3^{2-}

4. ✖ HCO_3^-, H_2CO_3

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 :

1. ✖ Cathode to Anode

2. ✔ Anode to Cathode

3. ✖ Anode to Solution

4. ✖ Solution to Cathode

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 $E^0_{Cu^{2+}|Cu} = +0.34V$, then $E^0_{M^{2+}|M,}$ (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. ✔ $E^0_{K^+|K} = -2.93$ v

2. ✖ $E^0_{Al^{3+}|Al} = -1.66$ v

3. ✖ $E^0_{Zn^{2+}|Zn} = -0.76$ v

4. ✖ $E^0_{Ag^+|Ag} = +0.34$ 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

Mg

3. ✖

Al

4. ✔

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 :

$MgSO_4$ (Molecular Weight = 120u)

1. ✖

$MgCl_2$ (Molecular Weight = 95u)

2. ✔

$CaCl_2$ (Molecular Weight = 111u)

3. ✖

$Ca(HCO_3)_2$ (Molecular Weight = 162u)

4. ✖

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

CO_2, 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. ✖ H_3PO_4

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

Question Number : 103 Question Id : 2106887709 Display Question Number : Yes Is Question

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 :

1. ✔ $Al_2O_3\ 2SiO_2\ 2H_2O$

2. ✖ $Al_2O_3\ SiO_2\ H_2O$

3. ✖ $2Al_2O_3\ 2\ SiO_2\ H_2O$

4. ✖ $Al_2O_3\ 3H_2O$

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. ✖ $Pb\ (NO_3)_2$

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

Question Number : 110 Question Id : 2106887716 Display Question Number : Yes Is Question

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.

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. ✖ Al_2O_3

3. ✔ CaF_2

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 :

1. ✖ Silica Refractories

2. ✔ Carbon refractories

3. ✖ Magnesite refractories

4. ✖ Chromite refractories

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 :

1. ✖ 1200-1350°C

2. ✖ 800-950°C

3. ✔ 1600-1750°C

4. ✖ 1300-1450°C

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. ✖ Si_3N_4

Graphite

3. ✔

Zirconia

4. ✖

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

Monoclinic

2. ✖

3. ✔ Triclinic

Orthorhombic

4. ✖

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. ✖ Andulasite

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

Question Number : 158 Question Id : 2106887764 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 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.

✖ 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. ✖ Al_2O_3

2. ✖ SiO_2

3. ✔ ZrO_2

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. ✔ $m^2\ Sec^{-1}$

2. ✖ $m^2\ sec^1$

3. ✖ $m^{-2}\ sec^{-1}$

4. ✖ $m^{-2}\ sec^1$

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

Question Number : 182 Question Id : 2106887788 Display Question Number : Yes Is Question

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.

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. ✖ Cu_2O

4. ✖ Fe_3O_4

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