Question Paper Preview

Question Paper Name: Ceramic Technology
Subject Name: Ceramic Technology

Mathematics

Number of Questions: 50
Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 67809416824 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -1 & 0 \\ 3 & 4 & 7 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 2 & -3 \\ 1 & 0 & -2 \end{pmatrix}$ then $2A+3B =$

Options :

1. $\begin{pmatrix} 19 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

2. $\begin{pmatrix} -19 & -4 & 9 \\ 9 & 8 & -8 \end{pmatrix}$

3. $\begin{pmatrix} 18 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

4. $\begin{pmatrix} 17 & 5 & -9 \\ 8 & 8 & 9 \end{pmatrix}$

Question Number : 2 Question Id : 67809416825 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -3 & 0 \\ 1 & 4 & -1 \end{pmatrix}$ and $B = \begin{pmatrix} 6 & 1 \\ 3 & 0 \\ 5 & 2 \end{pmatrix}$ then $(AB)^T =$

Options :

1. $A^T B^T$

2. B^TA^T

3. $(BA)^T$

4. AB^T

Question Number : 3 Question Id : 67809416826 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two rows or two columns of a determinant are identical then the value of the determinant is

Options :

1. 2

2. -1

3. 0

4. -2

Question Number : 4 Question Id : 67809416827 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\begin{vmatrix} 265 & 240 & 219 \\ 240 & 225 & 198 \\ 219 & 198 & 181 \end{vmatrix}$ is

Options :

1. -1

2. 0

3. 1

4. 2

Question Number : 5 Question Id : 67809416828 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The adjoint of the square matrix $A = \begin{pmatrix} 2 & 5 & 1 \\ 3 & 1 & 2 \\ 4 & 3 & 1 \end{pmatrix}$ is

Options :

1. $\begin{pmatrix} -5 & -2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

2. $\begin{pmatrix} 5 & 2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

3. $\begin{pmatrix} -5 & -2 & 9 \\ -5 & -2 & -1 \\ -5 & 14 & -13 \end{pmatrix}$

4. $\begin{pmatrix} -5 & -2 & -9 \\ 5 & 2 & 1 \\ 5 & 14 & -13 \end{pmatrix}$

Question Number : 6 Question Id : 67809416829 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\frac{5}{(2x-1)(3x-1)} =$

Options :

1. $\frac{8}{2x-1} + \frac{5}{3x-1}$

2. $\frac{10}{2x-1} - \frac{15}{3x-1}$

3. $\frac{11}{3x-1} + \frac{7}{2x-1}$

4. $\frac{1}{2x-1} + \frac{2}{3x-1}$

Question Number : 7 Question Id : 67809416830 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\frac{3x-1}{(x-1)(x-2)(x-3)} =$

Options :

1. $\frac{2}{x-1} + \frac{5}{x-2} - \frac{4}{x-3}$

2. $\frac{-1}{x-1}+\frac{5}{x-2}-\frac{4}{x-3}$

3. $\frac{1}{x-1}+\frac{5}{x-2}+\frac{4}{x-3}$

4. $\frac{1}{x-1}-\frac{5}{x-2}+\frac{4}{x-3}$

Question Number : 8 Question Id : 67809416831 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\text{If } \tan A=\frac{1}{2} \text{ and } \tan B=\frac{1}{3} \text{ then } \tan(A-B)=$

Options :

1. $\frac{1}{7}$

2. $\frac{-1}{7}$

3. $\frac{1}{5}$

4. $\frac{1}{3}$

Question Number : 9 Question Id : 67809416832 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\text{The value of } \cot 2A+\tan A=$

Options :

1. $\sin 2A$

2. $\cos 2A$

3. $\sec 2A$

4. $\text{cosec} 2A$

Question Number : 10 Question Id : 67809416833 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\frac{1-\cos 2A+\sin 2A}{1+\cos 2A+\sin 2A} =$

Options :

1. sinA

2. cosA

3. tanA

4. cotA

Question Number : 11 Question Id : 67809416834 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $sin\frac{\pi}{5} sin\frac{2\pi}{5} sin\frac{3\pi}{5} sin\frac{4\pi}{5} =$

Options :

1. $\frac{4}{15}$

2. $\frac{5}{16}$

3. $\frac{-5}{16}$

4. $\frac{7}{15}$

Question Number : 12 Question Id : 67809416835 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $cos20^0 + cos100^0 + cos140^0 =$

Options :

1. 0

2. 3

3. 1

4. -3

Question Number : 13 Question Id : 67809416836 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sum a(b^2 + c^2)cosA$ is

Options :

1. 2abc

2. 4abc

3. 3abc

4. 5abc

Question Number : 14 Question Id : 67809416837 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $(a-b)^2cos^2\left(\frac{C}{2}\right) + (a+b)^2sin^2\left(\frac{C}{2}\right)$ is

Options :

1. C^3

2. C

3. C^5

4. C^2

Question Number : 15 Question Id : 67809416838 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $2tan^{-1}\left(\frac{1}{3}\right) + tan^{-1}\left(\frac{1}{7}\right)$ is

Options :

1. $\pi/4$

2. $\pi/2$

3. $\pi/6$

4. $\pi/3$

Question Number : 16 Question Id : 67809416839 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $4cos^2x - 3 = 0$ is

Options :

1. $2n\pi \pm \frac{\pi}{6}$

2. $2n\pi \pm \frac{7\pi}{6}$

3. $3n\pi \pm \frac{5\pi}{6}$

4. $2n\pi \pm \frac{11\pi}{6}$

Question Number : 17 Question Id : 67809416840 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $tan^{-1}x + tan^{-1}y + tan^{-1}z = \frac{\pi}{2}$, then the value of $xy + yz + zx$ is

Options :

1. -1

2. 3

3. 5

4. 1

Question Number : 18 Question Id : 67809416841 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The modulus of a complex number $\sqrt{3} + i$ is

Options :

1. -2

2. 3

3. 2

4. 5

Question Number : 19 Question Id : 67809416842 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x+\frac{1}{x}=2\cos\theta$ then the value of $x^n+\frac{1}{x^n}$ is

Options :

1. $2\cos n\theta$

2. $-2\cos n\theta$

3. $3\cos\theta$

4. $2\sin n\theta$

Question Number : 20 Question Id : 67809416843 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the circle: $x^2+y^2-2x+6y-6=0$ is

Options :

1. $(1,3)$

2. $(2,3)$

3. $(1,-3)$

4. $(-1,3)$

Question Number : 21 Question Id : 67809416844 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The radius of the circle: $5x^2+5y^2-6x+8y-75=0$ is

Options :

1. -4

2. 4

3. 2

4. 3

Question Number : 22 Question Id : 67809416845 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the parabola with vertex $(2,-1)$ and focus $(2,-3)$ is

Options :

1. $x^2 - 4x + 8y + 12 = 0$

2. $x^2 - 4x - 8y - 12 = 0$

3. $x^2 + 4x - 8y - 12 = 0$

4. $x^2 + 5x - 8y - 11 = 0$

Question Number : 23 Question Id : 67809416846 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the ellipse: $9x^2 + 25y^2 - 18x + 100y - 116 = 0$ is

Options :

1. $(2, -1)$

2. $(-1, -2)$

3. $(1, -2)$

4. $(1,2)$

Question Number : 24 Question Id : 67809416847 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The focus of the hyperbola: $\frac{x^2}{25} - \frac{y^2}{144} = 1$ is

Options :

1. $(-13,0)$

2. $(13,0)$

3. $(13, -1)$

4. $(13,1)$

Question Number : 25 Question Id : 67809416848 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the major axis of the ellipse: $4x^2 + 3y^2 = 48$ is

Options :

1. 10

2. 11

3. 8

4. 13

Question Number : 26 Question Id : 67809416849 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{x\to 1}\frac{x^3-1}{x-1}$ is

Options :

1. 3

2. -3

3. 2

4. 1

Question Number : 27 Question Id : 67809416850 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y=\frac{a+bx}{b-ax}$ then the derivative of y with respect to x is

Options :

1. $\frac{a^2+b^2}{(b-ax)^2}$

2. $\frac{a^2+b^2}{(b+ax)^2}$

3. $\frac{a^2-b^2}{(b-ax)^2}$

4. $\frac{a+b}{(b-ax)^2}$

Question Number : 28 Question Id : 67809416851 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = x^3 e^x$ then $\frac{dy}{dx}$ is

Options :

1. $(x-3)x^2e^x$

2. $(x-2)x^3e^x$

3. $(x+3)x^2e^x$

4. $(x-1)x^3e^x$

Question Number : 29 Question Id : 67809416852 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sec x + \tan x$ then $\frac{dy}{dx}$ is

Options :

1. $y\cos x$

2. $y\sec x$

3. $-y\sin x$

4. $y\tan x$

Question Number : 30 Question Id : 67809416853 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \frac{2+3\sinh x}{3+2\sinh x}$ then the derivative of y with respect to x is

Options :

1. $\frac{5\cosh x}{(3+2\sinh x)^2}$

2. $\frac{5\sinh x}{(3+2\sinh x)^2}$

3. $\frac{5\sin x}{(3-2\cosh x)^2}$

4. $\frac{sinh^2 x}{(2-3\sinh x)^2}$

Question Number : 31 Question Id : 67809416854 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sqrt{\frac{1-\cos x}{1+\cos x}}$ then $\frac{dy}{dx}$ is

Options :

1. $\sec^2\left(\frac{x}{2}\right)$

2. $\cos^2\left(\frac{x}{2}\right)$

3. $\frac{1}{2}\cos^2\left(\frac{x}{2}\right)$

4. $\frac{1}{2}\sec^2\left(\frac{x}{2}\right)$

Question Number : 32 Question Id : 67809416855 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle between the curves $y = x^2 + 3x - 7$ and $y^2 = 2x + 5$ at $(2,3)$ is

Options :

1. $\tan\theta = 2$

2. $\sec\theta = 2$

3. $\cos\theta = 1$

4. $\sin\theta = 3$

Question Number : 33 Question Id : 67809416856 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The range of x for which the function $x^3 - 3x^2 - 45x + 2$ is increasing with x is

Options :

1. $(3,-5)$

2. $(-3,-5)$

3. $(3,5)$

4. $(-3,5)$

Question Number : 34 Question Id : 67809416857 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of the function $2x^3 - 12x^2 + 18x + 5$ is

Options :

1. 13

2. 12

3. 10

4. 15

Question Number : 35 Question Id : 67809416858 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If u is a homogeneous function of x and y with degree n then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$

Options :

1. $-nu$

2. n^2u

3. nu

4. $nu^2 + u$

Question Number : 36 Question Id : 67809416859 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{\cos\sqrt{x}}{\sqrt{x}} dx$ is

Options :

1. $2\sin\sqrt{x} + c$

2. $3\sin\sqrt{x}+c$

3. $2\sin x+c$

4. $\sin\sqrt{x}+c$

Question Number : 37 Question Id : 67809416860 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{dx}{\sqrt{a^2-x^2}}$ is

Options :

1. $\cos^{-1}\left(\frac{x}{a}\right)+c$

2. $\sin^{-1}\left(\frac{x}{a}\right)+c$

3. $\sinh^{-1}\left(\frac{x}{a}\right)+c$

4. $\sin^{-1}\left(\frac{a}{x}\right)+c$

Question Number : 38 Question Id : 67809416861 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{dx}{4x^2+4x+17}$ is

Options :

1. $\frac{1}{8}\tan^{-1}\left(\frac{2x+1}{4}\right)+c$

2. $\frac{1}{4}\cot^{-1}\left(\frac{2x+1}{4}\right)+c$

3. $\frac{1}{8}\sin^{-1}\left(\frac{2x+1}{4}\right)+c$

4. $\frac{1}{3}\tan^{-1}\left(\frac{2x+1}{4}\right)+c$

Question Number : 39 Question Id : 67809416862 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \log x \, dx$ is

Options :

1. $x \log x + x + c$

2. $x^2 \log x - x + c$

3. $x \log x - x + c$

4. $x \log x - \frac{x^2}{2} + c$

Question Number : 40 Question Id : 67809416863 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int_1^4 \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right) dx$ is

Options :

1. $\frac{20}{3}$

2. $-\frac{20}{3}$

3. $\frac{10}{3}$

4. $\frac{15}{3}$

Question Number : 41 Question Id : 67809416864 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int_0^{\pi/2} \sin^2 x \, dx$ is

Options :

1. $\frac{\pi}{2}$

2. $-\frac{\pi}{4}$

3. $\frac{\pi}{6}$

4. $\frac{\pi}{4}$

Question Number : 42 Question Id : 67809416865 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area enclosed between the curve $y^2 = 4ax$ and the line $x = 2y$ is

Options :

1. $\frac{64}{5}$ sq. units

2. $\frac{64}{3}$ sq. units

3. $\frac{65}{4}$ sq. units

4. $\frac{63}{4}$ sq. units

Question Number : 43 Question Id : 67809416866 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{n\to\infty}\left[\frac{1}{n+1}+\frac{1}{n+2}+\cdots..+\frac{1}{n+n}\right]$ is

Options :

1. $\log 2$

2. $\log 3$

3. $-\log 2$

4. $\log n$

Question Number : 44 Question Id : 67809416867 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Form the differential equation by eliminating the arbitrary constant a from $ay^2 = x^3$

Options :

1. $\frac{dy}{dx} = \frac{3y}{2x}$

2. $\frac{dy}{dx} = \frac{2x}{3y}$

3. $\frac{dy}{dx} = \frac{x}{y}$

4. $\frac{dy}{dx} = \frac{2y}{x}$

Question Number : 45 Question Id : 67809416868 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\sqrt{1-y^2}dx + \sqrt{1-x^2}dy = 0$ is

Options :

1. $\cos^{-1}x + \cos^{-1}y = c$

2. $\sinh^{-1}x + \cosh^{-1}y = c$

3. $\cos^{-1}x + \sec^{-1}x = c$

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

Question Number : 46 Question Id : 67809416869 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} = (4x + y + 1)^2$ is

Options :

1. $\frac{1}{2}\tan^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

2. $\frac{1}{2}\cot^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

3. $-\frac{1}{2}\tan^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

4. $\frac{1}{2}\tan^{-1}\left(\frac{4x-y-1}{2}\right) = x + c$

Question Number : 47 Question Id : 67809416870 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of exact differential equation $2xy\,dx + x^2dy = 0$ is

Options :

1. $x^2y^2 = c$

2. $x^2y = c$

3. $x^3y = c$

4. $x^2y^3 = c$

Question Number : 48 Question Id : 67809416871 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} + y = e^{-x}$ is

Options :

1. $(x + c)e^{-x}$

2. $(x - c)e^{x}$

3. $(x + c)e^{x}$

4. $(x + c)e^{-2x}$

Question Number : 49 Question Id : 67809416872 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. $\frac{-e^{-x}}{12}$

2. $\frac{e^{2x}}{12}$

3. $\frac{e^{x}}{12}$

4. $\frac{e^{x}}{6}$

Question Number : 50 Question Id : 67809416873 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The complementary function of $(D^2 + 3D + 2)y = 8sin5x$ is

Options :

1. $c_1 e^{-x} + c_2 e^{-2x}$

2. $c_1 e^{x} + c_2 e^{2x}$

3. $c_1 e^{-x} + c_2 e^{2x}$

4. $c_1 e^{2x} + c_2 e^{3x}$

Physics

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 51 Question Id : 67809416874 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not the unit of energy?

Options :

1. watt second

2. Pascal metre

3. Newton metre

4. Kilowatt hour

Question Number : 52 Question Id : 67809416875 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The height of Mercury barometer is 76 cm and density of Mercury is 13.6 g/cc. The corresponding height of water barometer in SI system is

Options :

1. 10.336 m

2. 103.36 m

3. 3.6m

4. 1.0336 m

Question Number : 53 Question Id : 67809416876 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Angle made by the vector $(\sqrt{3}\ \bar{i} + \bar{j})$ with the X-axis is

Options :

1. $\pi/2$

2. $\pi/4$

3. $\pi/3$

4. $\pi/6$

Question Number : 54 Question Id : 67809416877 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The minimum number of unequal forces in a plane that can keep a particle in equilibrium is

Options :

1. 4

2. 2

3. 3

4. 6

Question Number : 55 Question Id : 67809416878 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body is thrown with a velocity of $(4\bar{i} + 3\bar{j})$ m/s. The maximum height attained by the body is ($g=10\ ms^{-2}$)

Options :

1. 2.5 m

2. 4.5 m

3. 0.8 m

4. 0.45 m

Question Number : 56 Question Id : 67809416879 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A person in a lift, which ascends up with acceleration $10ms^{-2}$, drops a stone from a height of 10m. The time of descent is ($g=10\ ms^{-2}$)

Options :

1. 0.5 s

2. 1 s

3. 1.5 s

4. 2 s

Question Number : 57 Question Id : 67809416880 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a projectile, the ratio of maximum height reached to the square of time of flight is

Options :

1. 5:4

2. 5:2

3. 5:1

4. 10:1

Question Number : 58 Question Id : 67809416881 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of distances travelled by a body, starting from rest and travelling with uniform acceleration, in successive intervals of time of equal duration will be

Options :

1. 1:2:3

2. 1:4:9

3. 1:3:5

4. 1:9:16

Question Number : 59 Question Id : 67809416882 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 12 N acts on a body of mass 4 kg placed on a rough surface. The coefficient of friction between body and surface is 0.2 and take g= 10 ms^{-2}. The acceleration of the body in ms^{-2} is

Options :

1. 1

2. 0.5

3. 0.25

4. Zero

Question Number : 60 Question Id : 67809416883 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Brakes stop a train in a certain distance d. When the braking force is made one fourth, the brakes will stop the train in a distance which is

Options :

1. d/2
2. 4d
3. 2d
4. d

Question Number : 61 Question Id : 67809416884 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The product of linear momentum and velocity of a body represents

Options :

1. Kinetic energy of the body
2. Potential energy of the body
3. Half the Kinetic energy of the body
4. Twice the kinetic energy of the body

Question Number : 62 Question Id : 67809416885 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A man weighing 60 kg eats plum cake whose energy content is 9800 calories. If all this energy could be utilised by him, he can ascend to a height of

Options :

1. 17 m
2. 100 m
3. 70 m
4. 60m

Question Number : 63 Question Id : 67809416886 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A crane can lift up 10,000 kg of coal in 1 hour from a mine of depth 180m. If the efficiency of the crane is 80%, its input power must be ($g=10\ ms^{-2}$)

Options :

1. 62.5 kW
2. 6.25 kW
3. 50 kW
4. 5 kW

Question Number : 64 Question Id : 67809416887 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The graph of acceleration as a function of displacement in the case of a body executing simple harmonic motion is

Options :

1. Parabola
2. Hyperbola
3. Straight line with positive slope
4. Straight line with negative slope

Question Number : 65 Question Id : 67809416888 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pendulum of length 'L' swings from mean position to mean position 'n' times in one second.The value of acceleration due to gravity is

Options :

1. π^2n^2L
2. $2\pi^2n^2L$

3. $(\pi^2 n^2 L)/2$

4. $4\pi^2 n^2 L$

Question Number : 66 Question Id : 67809416889 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a source of sound is in motion towards a stationary observer, the effect observed is

Options :

1. Decrease in velocity of sound

2. Increase in velocity of sound

3. increase in frequency of sound

4. decrease in frequency of sound

Question Number : 67 Question Id : 67809416890 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of a male person is different from that of a female person because

Options :

1. Two sounds have different phases

2. Two persons are of different size

3. Two sounds travel with different velocities

4. Two sounds have different pitch

Question Number : 68 Question Id : 67809416891 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the sound absorption of a hall is changed by 2%, then the percentage change in the reverberation time is

Options :

1. 2%

2. 4%

3. 1%

4. No change

Question Number : 69 Question Id : 67809416892 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following process, the internal energy of the system remains constant?

Options :

1. Adiabatic

2. Isothermal

3. Isobaric

4. Isochoric

Question Number : 70 Question Id : 67809416893 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Heat required to raise the temperature of one gram of water through 1 K is

Options :

1. 1.0 Kcal

2. 0.1 Kcal

3. 0.01 Kcal

4. 0.001 Kcal

Question Number : 71 Question Id : 67809416894 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The specific heat of a gas in an isothermal process is

Options :

1. infinity

2. Zero

3. Finite positive

4. Finite negative

Question Number : 72 Question Id : 67809416895 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Specific heat of aluminium is 0.25 cal/g/°C. The water equivalent of an aluminium vessel of mass one kilogram is

Options :

1. 40 cal/°C

2. 400 cal/°C

3. 250 cal/°C

4. 25 cal/°C

Question Number : 73 Question Id : 67809416896 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What should be the percentage increase in the pressure so that the volume of a gas may decrease by 5% at constant temperature?

Options :

1. 5%

2. 5.26%

3. 10%

4. 4.26%

Question Number : 74 Question Id : 67809416897 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the maximum kinetic energy of emitted photo electrons from a metal is 0.9 eV and work function is 2.2 eV, then the wavelength of incident radiation is

Options :

1. 4000Å

2. 8000Å

3. 3000Å

4. 2000Å

Question Number : 75 Question Id : 67809416898 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the angle of incidence of a ray is greater than the critical angle at the core – cladding interface in an optical fiber, then the ray travels

Options :

1. in the core

2. in the cladding

3. in the buffer

4. along the interface

Chemistry

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 76 Question Id : 67809416899 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pauli's Exclusion principle states that two electrons in same orbital have

Options :

1. same spins

2. different spins

3. opposite spins

4. vertical spins

Question Number : 77 Question Id : 67809416900 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Orbits in which electrons move according to Bohr are

Options :

1. elliptical

2. cylindrical

3. circular

4. oval

Question Number : 78 Question Id : 67809416901 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Phosphorus has an atomic number of 15. A stable phosphorus atom has an electronic configuration of

Options :

1. $1s^2 2s^2 2p^6 3p^5$

2. $1s^2 2s^2 2p^6 3s^2 3p^3$

3. $1s^2 2s^2 2p^6 3s^2 3p^1 4s^2$

4. $1s^2 1p^6 1d^7$

Question Number : 79 Question Id : 67809416902 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

NaCl is classified as having what kind of bonds in the solid phase?

Options :

1. Covalent

2. Ionic

3. Polar

4. vander Waals

Question Number : 80 Question Id : 67809416903 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Bond formed due to sharing of electrons is

Options :

1. Ionic bond

2. Metallic bond

3. Polar bond

4. Covalent bond

Question Number : 81 Question Id : 67809416904 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of solution obtained by dissolving 5.3 grams of Na_2CO_3 in 1 litre solution is

Options :

1. 1N

2. 0.1N

3. 0.05N

4. 0.5N

Question Number : 82 Question Id : 67809416905 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following solution has same molarity and normality

Options :

1. Na_2CO_3

2. NaCl

3. H_2SO_4

4. $K_2Cr_2O_7$

Question Number : 83 Question Id : 67809416906 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

5 moles of a solute is dissolved in 10 litres of solution. What is its molarity?

Options :

1. 5 M

2. 2M

3. 0.5M

4. 0.2M

Question Number : 84 Question Id : 67809416907 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Process in which acids (H^+) and bases (OH^-) react to form salts and water is called

Options :

1. Neutralization

2. Halogenation

3. Hydrogenation

4. Hydrolysis

Question Number : 85 Question Id : 67809416908 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A substance that donates a pair of electrons to form coordinate covalent bond is called

Options :

1. Lewis acid

2. Lewis base

3. Bronsted-Lowry acid

4. Bronsted-Lowry base

Question Number : 86 Question Id : 67809416909 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One Faraday is equal to

Options :

1. 99650 C

2. 93100 C

3. 96500 C

4. 94500 C

Question Number : 87 Question Id : 67809416910 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cell reaction of a cell is $Mg(s) + 2\ H^{+}(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$. If the standard reduction potential of Zn is -2.372 V, then the emf of the cell is

Options :

1. +2.372 V

2. – 2.372 V

3. 0.00 V

4. -1.372 V

Question Number : 88 Question Id : 67809416911 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Galvanic cells are the cells which convert

Options :

1. Electrical energy to chemical energy

2. Chemical energy to electrical energy

3. Chemical energy to free energy

4. Potential energy to kinetic energy

Question Number : 89 Question Id : 67809416912 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mass of substance produced at electrode is directly proportional to the quantity of electricity passed. This is known as

Options :

1. Faraday's second law

2. Faraday's first law

3. Newton’s third law

4. Newton’s first law

Question Number : 90 Question Id : 67809416913 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hardness of water is expressed in terms of equivalent of

Options :

1. Na_2CO_3

2. K_2CO_3

3. $MgCO_3$

4. $CaCO_3$

Question Number : 91 Question Id : 67809416914 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Temporary hardness is caused by

Options :

1. Carbonates of calcium and magnesium

2. Chlorides of calcium and magnesium

3. Sulphates of calcium and magnesium

4. Nitrates of Calcium

Question Number : 92 Question Id : 67809416915 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The exhausted zeolite bed can be regenerated by washing with

Options :

1. NaCl

2. dil. NaOH

3. dil. HCl

4. Distilled water

Question Number : 93 Question Id : 67809416916 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Corrosion is an example of

Options :

1. Oxidation

2. Reduction

3. Electrolysis

4. Halogenation

Question Number : 94 Question Id : 67809416917 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The composition of rust is

Options :

1. $Fe(OH)_3$

2. $FeCl_3$

3. FeO

4. $Fe_2O_3.\ xH_2O$

Question Number : 95 Question Id : 67809416918 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following statement is not true?

Options :

1. Natural rubber has the trans-configuration at every double bond

2. Buna-S is a copolymer of butadiene and styrene

3. Natural rubber is a 1, 4-polymer of isoprene

4. In vulcanization, the formation of sulphur bridges between different chains makes rubber harder and stronger

Question Number : 96 Question Id : 67809416919 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The monomers of Buna-S rubber are

Options :

1. Styrene and butadiene

2. Styrene and 2-propene

3. Isoprene and butadiene

4. Styrene and sulphur

Question Number : 97 Question Id : 67809416920 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The plastics which soften when heat is applied with or without pressure, but require cooling to set them to shape are called as

Options :

1. Thermosofting materials

2. Thermosetting materials

3. Thermoplastic materials

4. Thermostatting materials

Question Number : 98 Question Id : 67809416921 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following statement is not true about ideal fuel?

Options :

1. High calorific value

2. High moisture content

3. Low cost

4. Moderate ignition temperature

Question Number : 99 Question Id : 67809416922 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Environmental pollution affects

Options :

1. Humans only

2. Plants only

3. Biotic components

4. Both abiotic and biotic components

Question Number : 100 Question Id : 67809416923 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Layer of atmosphere in which ozone layer lies is

Options :

1. Troposphere

2. Stratosphere

3. Exosphere

4. Mesosphere

Ceramic Technology

Number of Questions:	100
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 67809416924 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The word 'ceramic' means

Options :

1. soft material

2. hard material

3. burnt material

4. dry material

Question Number : 102 Question Id : 67809416925 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a characteristic property of ceramic material?

Options :

1. high temperature stability

2. high mechanical strength

3. low elongation

4. low hardness

Question Number : 103 Question Id : 67809416926 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Major ingredient of traditional ceramics is

Options :

1. silica

2. iron

3. gold

4. brass

Question Number : 104 Question Id : 67809416927 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a major contributor of engineering ceramics?

Options :

1. SiC

2. SiO_2

3. Si_3N_4

4. Al_2O_3

Question Number : 105 Question Id : 67809416928 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following ceramic product is mostly used as pigment in paints

Options :

1. TiO_2

2. SiO_2

3. UO_2

4. ZrO_2

Question Number : 106 Question Id : 67809416929 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Most commercial glasses consist of

Options :

1. Baria

2. soda

3. Titania

4. yttria

Question Number : 107 Question Id : 67809416930 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hot isostatic pressing is not a viable option if the chief criterion is

Options :

1. strength without grain growth

2. lost cost

3. zero porosity

4. processing refractory ceramics

Question Number : 108 Question Id : 67809416931 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During sintering, densification is not due to

Options :

1. atomic diffusion

2. surface diffusion

3. bulk diffusion

4. grain growth

Question Number : 109 Question Id : 67809416932 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which type of microscope is used to determine particle diameter between 10 to 0.001 μ?

Options :

1. Optical microscope

2. Electron microscope

3. Atomic probe microscope

4. Transmission electron microscope

Question Number : 110 Question Id : 67809416933 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ceramics having nuclear applications can not be used as

Options :

1. moderators

2. coolants

3. fuels

4. initiators

Question Number : 111 Question Id : 67809416934 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The mineral wallostanite is

Options :

1. Calcium silicate

2. Calcium Aluminate

3. Calcium ferrite

4. Calcium magnesite

Question Number : 112 Question Id : 67809416935 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Density of Alumina in gm/cc is

Options :

1. 4.00

2. 3.50

3. 3.00

4. 2.50

Question Number : 113 Question Id : 67809416936 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hadrness of Corrundum on Moh's scale is

Options :

1. 7

2. 8

3. 9

4. 10

Question Number : 114 Question Id : 67809416937 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The chemical formula of Talc is

Options :

1. $3MgO\ 4SiO_2\ 10H_2O$

2. $3MgO\ SiO_2\ H_2O$

3. $MgO\ SiO_2\ H_2O$

4. $Mgo\ 2\ SiO_2\ 2H_2O$

Question Number : 115 Question Id : 67809416938 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Biotite is known as

Options :

1. White mica

2. Black mica

3. Red mica

4. Brown mica

Question Number : 116 Question Id : 67809416939 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is used to measure volume?

Options :

1. Permeametry

2. Doulton's densometer

3. Orsat apparatus

4. Rees-Hugill flask

Question Number : 117 Question Id : 67809416940 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Blain's apparatus is used to measure the

Options :

1. Surface area

2. Particle size

3. Density

4. Porosity

Question Number : 118 Question Id : 67809416941 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The mesh number of a screen is

Options :

1. The number of openings per square inch

2. The number of wires with which it is made

3. The total number of openings per linear cm

4. The number of opening per linear inch

Question Number : 119 Question Id : 67809416942 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which test gives the result of refractoriness

Options :

1. RUL

2. PCE

3. MOR

4. Apparent porosity

Question Number : 120 Question Id : 67809416943 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The RUL is combined effect of

Options :

1. Temperature and Time

2. Tempearure , Pressure and Time

3. Time and Pressure

4. Time ,Temperature and Rate

Question Number : 121 Question Id : 67809416944 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Salt glaze is used on

Options :

1. Earthen ware

2. Stone ware

3. Porcelain

4. Bone china ware

Question Number : 122 Question Id : 67809416945 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Andreasen method is used to determine

Options :

1. Particle size distribution

2. Plasticity

3. Surface area

4. Volume

Question Number : 123 Question Id : 67809416946 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which refractory undergoes bursting in contact with iron oxide?

Options :

1. Periclase

2. Dolomite

3. Chrome

4. Mullite

Question Number : 124 Question Id : 67809416947 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

High tension insulators are made from

Options :

1. Soft porcelain

2. Hard porcelain

3. Earthen ware

4. Stone ware

Question Number : 125 Question Id : 67809416948 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The soundness of cement is measured by

Options :

1. Blain's apparatus

2. Hydrometer

3. Autoclave

4. Vicat apparatus

Question Number : 126 Question Id : 67809416949 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Modern method of making sheet glass is

Options :

1. Pressing

2. Blowing

3. Centrifugal casting

4. Floating

Question Number : 127 Question Id : 67809416950 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following has high dielectric constant ?

Options :

1. $BaTiO_3$

2. $CaTiO_3$

3. $MgTiO_3$

4. $CaMgTiO_3$

Question Number : 128 Question Id : 67809416951 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a primary clay?

Options :

1. Ball clay

2. China clay

3. Fire clay

4. Than ball clay

Question Number : 129 Question Id : 67809416952 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Study of earth is called

Options :

1. Geology

2. Petrology

3. Mineralogy

4. Oligology

Question Number : 130 Question Id : 67809416953 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A blast furnace heath should preferably be made of

Options :

1. Fireclay bricks

2. Carbon bricks

3. Zircon bricks

4. Vermicullite bricks

Question Number : 131 Question Id : 67809416954 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following refractory oxides volatilizes in presence of water?

Options :

1. BaO

2. BeO

3. Cr_2O_3

4. ThO_2

Question Number : 132 Question Id : 67809416955 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the stage of clay when it is very soft and malleable?

Options :

1. Leather Hard

2. Bone dry

3. Bisqueware

4. Plastic

Question Number : 133 Question Id : 67809416956 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is a kiln used for?

Options :

1. Cooking

2. Burning

3. Firing

4. Melting

Question Number : 134 Question Id : 67809416957 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the term for clay that is watered down to the consistency of sour cream?

Options :

1. Slab

2. Leather Hard

3. Slip

4. Glaze

Question Number : 135 Question Id : 67809416958 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following has high dielectric constant ?

Options :

1. Earthen ware

2. Porcelain

3. Bone china

4. Stone ware

Question Number : 136 Question Id : 67809416959 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Why is it important to remove air bubbles from the clay before it is *fired?*

Options :

1. so that it doesn't create a bigger bubble when fired

2. so that it doesn't crack or break apart when fired

3. it helps to slip and score better for firing

4. Clay needs trapped air bubbles to help it dry

Question Number : 137 Question Id : 67809416960 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the technique used to remove air bubbles from clay?

Options :

1. Wedging

2. Molding

3. Scoring

4. Forming

Question Number : 138 Question Id : 67809416961 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the main element of glaze that makes it shine like glass after being fired?

Options :

1. Sand

2. Magnesium

3. Silica

4. Cobalt

Question Number : 139 Question Id : 67809416962 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What does a *FLUX* compound do in a Glaze?

Options :

1. It helps the glaze stick and hold to the ceramics

2. It helps make the glaze Opaque

3. It lowers the melting point of silica when firing

4. It alters the colorants in various ways

Question Number : 140 Question Id : 67809416963 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The term given to a material which is not a conductor of electricity is

Options :

1. Conductor

2. Non-metal

3. Metal

4. Insulator

Question Number : 141 Question Id : 67809416964 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is meant by specific surface?

Options :

1. surface area per unit volume

2. surface area per unit weight

3. surface weight per unit area

4. surface volume per unit weight

Question Number : 142 Question Id : 67809416965 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following refractory is acidic in nature?

Options :

1. Silica

2. Magnesia

3. Chromium

4. Alumina

Question Number : 143 Question Id : 67809416966 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Select the correct option which shows mechanical property of ceramic materials

Options :

1. Non-crystalline ceramics become brittle below recrystallization temperature

2. At high temperatures ceramics have favorable properties

3. Ceramic products are resistant to oxidation

4. Ceramics can be used as moderators

Question Number : 144 Question Id : 67809416967 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resistance to sudden temperature changes is known as

Options :

1. Thermal expansion

2. Spalling resistance

3. Chemical resistance

4. PCE

Question Number : 145 Question Id : 67809416968 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a shaped refractory?

Options :

1. Monolithic

2. Castables

3. Ramming masses

4. Fireclay bricks

Question Number : 146 Question Id : 67809416969 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The monoporossa is a

Options :

1. Single fired floor tile

2. Double fired floor tile

3. Single fired wall tile

4. Double fired wall tile

Question Number : 147 Question Id : 67809416970 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The filter press is mainly used in

Options :

1. Ceramic insulator making

2. Cement making

3. Glass making

4. Glaze making

Question Number : 148 Question Id : 67809416971 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fire clay is used in

Options :

1. Earthen ware

2. Porcelain

3. Bone China

4. Stone ware

Question Number : 149 Question Id : 67809416972 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Roller hearth kiln is used for firing

Options :

1. Ceramic tiles

2. Cement

3. Refractory

4. Sanitary ware

Question Number : 150 Question Id : 67809416973 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The operating temperature in spray dryer for ceramic precursor powder drying is

Options :

1. $700\text{-}900^{0}C$

2. $450\text{-}650^{0}C$

3. $200\text{-}300^0C$

4. $900\text{-}1100^0C$

Question Number : 151 Question Id : 67809416974 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

EMF is associated with

Options :

1. Resistance pyrometer

2. Optical pyrometer

3. Thermocouple pyrometer

4. Radiation pyrometer

Question Number : 152 Question Id : 67809416975 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a Loadstone?

Options :

1. FeO

2. Fe_2O

3. Fe_3O_4

4. $2FeO$

Question Number : 153 Question Id : 67809416976 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Solvay process is used to prepare

Options :

1. Soda ash powder

2. Silicon carbide powder

3. Silicon nitride powder

4. Boron nitride powder

Question Number : 154 Question Id : 67809416977 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following compound is used to impart amber color in glass?

Options :

1. C and S

2. FeS

3. CuS

4. ZnS

Question Number : 155 Question Id : 67809416978 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a pozzolona?

Options :

1. wood

2. cement

3. Fly ash

4. clay

Question Number : 156 Question Id : 67809416979 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hardness of metal base is tested by

Options :

1. Scratch test

2. Tensile test

3. Impact test

4. Compression test

Question Number : 157 Question Id : 67809416980 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The crystal glass contains substantial proportion of _____

Options :

1. Pb

2. Sr

3. Ba

4. Sn

Question Number : 158 Question Id : 67809416981 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Refining chamber is found in

Options :

1. Glass tank furnace

2. Tunnel kiln

3. Converter furnace

4. Roller hearth kiln

Question Number : 159 Question Id : 67809416982 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Muffle Tunnel kiln is used for

Options :

1. Ceramic tiles

2. Sanitary ware

3. Cement

4. Glass

Question Number : 160 Question Id : 67809416983 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following oxides is a must for opacity?

Options :

1. NiO

2. ZrO_2

3. MnO

4. CoO

Question Number : 161 Question Id : 67809416984 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following additive is used to control the setting of Portland Cement?

Options :

1. Lime

2. Gypsum

3. Sodium chloride

4. Silica

Question Number : 162 Question Id : 67809416985 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Alite is

Options :

1. Tricalcium silicate

2. Dicalcium silicate

3. Tricalcium aluminate

4. Tetra calcium aluminoferrite

Question Number : 163 Question Id : 67809416986 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the Principal phase of High Alumina Cement?

Options :

1. C_3A

2. C_2A

3. CA

4. $C_{12}A_7$

Question Number : 164 Question Id : 67809416987 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which phase in Portland Cement gives the ultimate strength?

Options :

1. C_3S

2. C_2S

3. C_3A

4. C_4AF

Question Number : 165 Question Id : 67809416988 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following material is used as an opacifier in enamels?

Options :

1. Synthetic cryolite

2. Borax

3. Orthoclase

4. Pegmatite

Question Number : 166 Question Id : 67809416989 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The acid resistance of Enameled ware is tested with

Options :

1. Hydrochloric acid

2. Citric acid

3. Sulfuric acid

4. Tartaric acid

Question Number : 167 Question Id : 67809416990 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum firing temperature used in enamelling is

Options :

1. 1000^0C

2. 630^0C

3. 870^0C

4. 1240^0C

Question Number : 168 Question Id : 67809416991 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Bicheroux process is used for making

Options :

1. Glass
2. Cement
3. Refractory
4. Enamel

Question Number : 169 Question Id : 67809416992 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The spalt cooling is used to produce

Options :

1. Metallic glass
2. Glass fiber
3. Foam glass
4. Toughend glass

Question Number : 170 Question Id : 67809416993 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following oxide is not a glass former?

Options :

1. B_2O_3
2. SiO_2
3. GeO_2
4. Cr_2O_3

Question Number : 171 Question Id : 67809416994 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a Nucleating agent?

Options :

1. TiO_2
2. ZrO_2
3. ZnO
4. P_2O_5

Question Number : 172 Question Id : 67809416995 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Calculate the percentage ionic character of SiO_2 if the electro negativities of Si and O are 1.7 and 3.4 respectively.

Options :

1. 61%

2. 51%

3. 72%

4. 81%

Question Number : 173 Question Id : 67809416996 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Atomic packing factor for Body centered cubic structure is

Options :

1. 0.50

2. 0.68

3. 0.72

4. 0.80

Question Number : 174 Question Id : 67809416997 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a piezoelectric ceramic?

Options :

1. Al_2O_3

2. B_2O_3

3. SiO_2

4. ZrO_2

Question Number : 175 Question Id : 67809416998 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dielectric material means

Options :

1. Insulator

2. Conductor

3. non-conductor

4. Super conductor

Question Number : 176 Question Id : 67809416999 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the driving force for diffusion?

Options :

1. difference in temperature

2. difference in pressure

3. difference in concentration

4. cooling rate (change in temperature with time)

Question Number : 177 Question Id : 67809417000 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following ceramic is not used an abrasive?

Options :

1. Boron nitride

2. Emery

3. Boron carbide

4. Silicon carbide

Question Number : 178 Question Id : 67809417001 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The machinable glass ceramic contains

Options :

1. Zirconia

2. Mica

3. Berrylia

4. Alumina

Question Number : 179 Question Id : 67809417002 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

On heating at 1200°C china clay yields

Options :

1. Alumina and silica

2. Silica

3. Alumina

4. Mullite and cristobalite

Question Number : 180 Question Id : 67809417003 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Beta quartz is converted to Alpha quartz at a temperature of

Options :

1. $453^{\circ}C$

2. $573^{\circ}C$

3. $913^{\circ}C$

4. $683^{\circ}C$

Question Number : 181 Question Id : 67809417004 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The composition $Na_2O.11Al_2O_3$ represents

Options :

1. Eta Alumina

2. Beta Alumina

3. Theta Alumina

4. Kappa Alumina

Question Number : 182 Question Id : 67809417005 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An important stone saphire is

Options :

1. Corundum

2. Carborandum

3. Spinel

4. Mica

Question Number : 183 Question Id : 67809417006 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following material can be used for the melting and refining of glass?

Options :

1. Fly ash

2. Foamed and granulated blast furnace slag

3. Red mud

4. Phosphogypsum

Question Number : 184 Question Id : 67809417007 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

To measure the density of glass by float and sink method, the liquid mixture used is

Options :

1. Xylene -Toulene

2. Pyridine+ nitrobenzene

3. N-hexane +Isobutene

4. Alpha-bromonapthalane -Sym-Tetrabromoethane

Question Number : 185 Question Id : 67809417008 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For Repairing of damaged furnace wall by ceramic welding, which of the following material is used with refractory powders?

Options :

1. Aluminium

2. Charcoal

3. Iron

4. Silicon

Question Number : 186 Question Id : 67809417009 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following is used to remove green tint of molten glass:

Options :

1. Ferric oxide

2. Chromic oxide

3. Manganese dioxide

4. Cobalt oxide

Question Number : 187 Question Id : 67809417010 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Hard glass contains:

Options :

1. Sodium and calcium silicate

2. Potassium and calcium silicate

3. Sodium and Potassium

4. Potassium and lead silicate

Question Number : 188 Question Id : 67809417011 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Radiation shield glass in Nuclear reactor contains:

Options :

1. Low lead with manganese

2. High lead with bismuth

3. High lead with cerium

4. Low lead with barium

Question Number : 189 Question Id : 67809417012 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following ceramics is used in making spark plugs for automobiles?

Options :

1. Silicon Carbide
2. Zirconia
3. Magnesia
4. Alumina

Question Number : 190 Question Id : 67809417013 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not a Low loss ceramic?

Options :

1. Steatite
2. Forsterite
3. Wallastonite
4. Rutile

Question Number : 191 Question Id : 67809417014 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a garnet type ferrite?

Options :

1. $NiFeO_4$
2. $Y_3Fe_5O_{12}$
3. $BaFe_{12}O_{19}$
4. $NiZnFe_2O_5$

Question Number : 192 Question Id : 67809417015 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a refractory phase in the $MgO\text{-}SiO_2$ system?

Options :

1. Serpentine
2. Fayalite
3. Forsterite
4. Monticellite

Question Number : 193 Question Id : 67809417016 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following materials is used as cutting tool bit?

Options :

1. SiC
2. ZTA
3. TiC
4. HfC

Question Number : 194 Question Id : 67809417017 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a glaze defect?

Options :

1. Black spots
2. Spitouts
3. Peeling
4. Sulphur glaze

Question Number : 195 Question Id : 67809417018 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dunting of whiteware bodies is:

Options :

1. Cracking due to thermally induced stress
2. Crazing after Firing
3. Rolling out of glaze after firing
4. Deformation after firing

Question Number : 196 Question Id : 67809417019 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The density of Periclase is:

Options :

1. 2.56
2. 4.10
3. 3.59
4. 3.10

Question Number : 197 Question Id : 67809417020 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The grog is :

Options :

1. Rejected raw material
2. Rejected magnesite brick
3. Rejected alumina brick
4. Precalcined raw material

Question Number : 198 Question Id : 67809417021 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The dead burning of Magnesite is carried out at:

Options :

1. $1300\text{-}1450^{o}C$

2. $800\text{-}950^{O}C$

3. $1200\text{-}1350^{O}C$

4. $1600\text{-}1750^{o}C$

Question Number : 199 Question Id : 67809417022 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The limit of Al_2O_3 content in Fireclay products is:

Options :

1. 46%

2. 26%

3. 36%

4. 56%

Question Number : 200 Question Id : 67809417023 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following phase improves thermal shock resistance of silica brick?

Options :

1. Silica glass

2. Tridymite

3. Quartz

4. Cristabolite