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 :	Agricultural Engineering 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 :	210688139
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 : 2106887005 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 : 2106887006 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. ✖ $[15 \quad 26 \quad 4]$

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 : 2106887007 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 : 2106887008 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 : 2106887009 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 : 2106887010 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 : 2106887011 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 : 2106887012 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 : 2106887013 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 : 2106887014 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 : 2106887015 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 : 2106887016 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 : 2106887017 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 : 2106887018 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 : 2106887019 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 : 2106887020 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 : 2106887021 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 : 2106887022 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 : 2106887023 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 : 2106887024 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 : 2106887025 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 : 2106887026 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 : 2106887027 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 : 2106887028 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 : 2106887029 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 : 2106887030 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 : 2106887031 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 : 2106887032 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 : 2106887033 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 : 2106887034 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 : 2106887035 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 : 2106887036 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 : 2106887037 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 : 2106887038 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 : 2106887039 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 : 2106887040 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 : 2106887041 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 : 2106887042 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 : 2106887043 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 : 2106887044 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 : 2106887045 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 : 2106887046 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 : 2106887047 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 : 2106887048 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 : 2106887049 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 : 2106887050 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 : 2106887051 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 : 2106887052 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 : 2106887053 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 : 2106887054 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 : 210688140

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 : 2106887055 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 : 2106887056 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 : 2106887057 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. ✖ $\text{Cos}^{-1}(4/5)$

2. ✖ Π

3. ✔ $\text{Cos}^{-1}(3/5)$

4. ✖ $\text{Sin}^{-1}(3/4)$

Question Number : 54 Question Id : 2106887058 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 : 2106887059 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 : 2106887060 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 : 2106887061 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 : 2106887062 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 : 2106887063 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 : 2106887064 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 : 2106887065 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 : 2106887066 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 : 2106887067 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 : 2106887068 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 : 2106887069 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 : 2106887070 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 : 2106887071 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 : 2106887072 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 : 2106887073 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 : 2106887074 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 : 2106887075 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 : 2106887076 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 : 2106887077 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 : 2106887078 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 : 2106887079 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 :	210688141
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 : 2106887080 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 : 2106887081 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 : 2106887082 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 : 2106887083 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 : 2106887084 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 : 2106887085 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 : 2106887086 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 : 2106887087 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 : 2106887088 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 : 2106887089 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 : 2106887090 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 : 2106887091 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 : 2106887092 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 : 2106887093 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 : 2106887094 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

Options :

1. ✖ Zn

2. ✖ Ca

3. ✖ Mg

4. ✔ Al

Question Number : 91 Question Id : 2106887095 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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

Options :

1. ✖ $MgSO_4$ (Molecular Weight = 120u)

2. ✔ $MgCl_2$ (Molecular Weight = 95u)

3. ✖ $CaCl_2$ (Molecular Weight = 111u)

4. ✖ $Ca(HCO_3)_2$ (Molecular Weight = 162u)

Question Number : 92 Question Id : 2106887096 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 : 2106887097 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 : 2106887098 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 : 2106887099 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 : 2106887100 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 : 2106887101 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 : 2106887102 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 : 2106887103 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 : 2106887104 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

Agricultural Engineering

Section Id :	210688142
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 : 2106887105 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Device used to connect and disconnect the tractor engine from the transmission gears and drive wheels is

Options :

1. ✖ Fly wheel

2. ✖ Gear box

3. ✖ Brake

4. ✔ Clutch

Question Number : 102 Question Id : 2106887106 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Device to join both half axles of the tractor so that even if one wheel is less resistance the tractor comes out of the mud is

Options :

1. ✖ Clutch

2. ✖ Gear box

3. ✔ Differential lock

4. ✖ Rear axle

Question Number : 103 Question Id : 2106887107 Display Question Number : Yes Is Question

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

System governing the angular movement of front wheels of a tractor is called as

Options :

1. ✔ Steering system

2. ✖ Gear transmission system

3. ✖ Cooling system

4. ✖ Lubrication system

Question Number : 104 Question Id : 2106887108 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

To stop or slow down the motion of the tractor is done with

Options :

1. ✔ Brake

2. ✖ Power take off

3. ✖ Belt pulley

4. ✖ Hydraulic pump

Question Number : 105 Question Id : 2106887109 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Implement is attached to the tractor with _____ system.

Options :

1. ✖ Crank shaft

2. ✔ Three-point hitch

3. ✖ Flywheel

4. ✖ Power take off system

Question Number : 106 Question Id : 2106887110 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Gear reduction unit in the power transmission between differentials and drive wheels is

Options :

1. ✖ Fly wheel

2. ✔ Final drive

3. ✖ Transmission gear

4. ✖ Crankshaft

Question Number : 107 Question Id : 2106887111 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is fitted between engine and rear wheels for variable speed and torque?

Options :

1. ✖ Clutch

2. ✔ Gear box

3. ✖ Brake

4. ✖ Crankshaft

Question Number : 108 Question Id : 2106887112 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Walking type tractor usually fitted with two wheels only is called as

Options :

1. ✔ Power tiller

2. ✖ Combine harvester

3. ✖ Thresher

4. ✖ Mower

Question Number : 109 Question Id : 2106887113 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Whenever a plough works round a strip of ploughed land, it is said to be

Options :

1. ✖ Winding

2. ✖ Mixing

3. ✖ Casting

4. ✔ Gathering

Question Number : 110 Question Id : 2106887114 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Weeding tool used in the farm which consists of an iron blade and a wooden handle is called as

Options :

1. ✔ Hand hoe

2. ✖ Hoe cum rake

3. ✖ Star type weeder

4. ✖ Page type weeder

Question Number : 111 Question Id : 2106887115 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Word refers to the mechanical manipulation of soil in order to provide the conditions necessary for crop growth is

Options :

1. ✖ Irrigation

2. ✔ Tillage

3. ✖ Plantation

4. ✖ Sowing

Question Number : 112 Question Id : 2106887116 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Equipment used for churning the soil with standing water while preparing the field for paddy transplanting is

Options :

1. ✖ Plough

2. ✔ Puddler

3. ✖ Harrow

4. ✖ Digger

Question Number : 113 Question Id : 2106887117 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Initial major soil working operation designed to plough the soil deeply to reduce soil strength, cover plant materials and rearrange aggregates is called as

Options :

1. ✔ Primary tillage

2. ✖ Secondary tillage

3. ✖ Tertiary tillage

4. ✖

Zero tillage

Question Number : 114 Question Id : 2106887118 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Swinging knives are used in

Options :

1. ✖ Cylindrical mower

2. ✖ Horizontal rotary mower

3. ✔ Flail mower

4. ✖ Reciprocating mower

Question Number : 115 Question Id : 2106887119 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Dropping the seeds in furrow lines in a continuous stream and covering them with soil is done in

Options :

1. ✖ Hill dropping

2. ✔ Drilling

3. ✖ Transplanting

4. ✖ Check row planting

Question Number : 116 Question Id : 2106887120 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Actual coverage of the machine based on total field time is called as

Options :

1. ✖ Effective operating time

2. ✔ Effective field capacity

3. ✖ Theoretical field capacity

4. ✖ Field efficiency

Question Number : 117 Question Id : 2106887121 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Machine to cut herbage crops and leave them in a swath is

Options :

1. ✔ Mower

2. ✖ Cutter bar

3. ✖ Sickle

4. ✖ Scissor

Question Number : 118 Question Id : 2106887122 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Horizontal distance between the front and rear wheels of a tractor is known as

Options :

1. ✔ Wheel base

2. ✖ Ground clearance

3. ✖ Track

4. ✖ Cage wheel

Question Number : 119 Question Id : 2106887123 Display Question Number : Yes Is Question

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

Sprayer which the operator carries on his back is known as

Options :

1. ✔ Knapsack sprayer

2. ✖ Hand compressor sprayer

3. ✖ Hand automizer

4. ✖ Rocker sprayer

Question Number : 120 Question Id : 2106887124 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Implement used for sowing large seeds like potato is

Options :

1. ✖ Seed drills

2. ✔ Planter

3. ✖ Seed tube

4. ✖ Furrow opener

Question Number : 121 Question Id : 2106887125 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Harrow is a _____ tillage equipment.

Options :

1. ✖ Primary

2. ✔ Secondary

3. ✖ Tertiary

4. ✖ Zero

Question Number : 122 Question Id : 2106887126 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Machine to cut herbage crops and bind them in small bundles is

Options :

1. ✖ Reaper

2. ✔ Reaper binder

3. ✖ Sickle

4. ✖ Windrower

Question Number : 123 Question Id : 2106887127 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Art of determining relative elevation of a point in vertical plane is

Options :

1. ✖ Surveying

2. ✔ Levelling

3. ✖ Traversing

4. ✖ Chaining

Question Number : 124 Question Id : 2106887128 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

French cross staff is used for setting out an angle of

Options :

1. ✔ 45° and 90°

2. ✖ Only 45°

3. ✖ 90° and 120°

4. ✖ Only 90°

Question Number : 125 Question Id : 2106887129 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Direction indicated by a freely suspended magnetic needle unaffected by local attraction is

Options :

1. ✖ Arbitrary meridian

2. ✔ Magnetic meridian

3. ✖ True meridian

4. ✖ Central meridian

Question Number : 126 Question Id : 2106887130 Display Question Number : Yes Is Question

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

1 acre = _____ Are

Options :

1. ✖ 100

2. ✔ 40

3. ✖ 50

4. ✖ 1000

Question Number : 127 Question Id : 2106887131 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Curvature of earth is taken into account in case of

Options :

1. ✖ Traverse survey

2. ✔ Geodetic survey

3. ✖ Triangulation survey

4. ✖ Plane survey

Question Number : 128 Question Id : 2106887132 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Longest of the chain lines used in making a survey is called as

Options :

1. ✖ Survey line

2. ✖ Tie line

3. ✖ Check line

4. ✔ Base line

Question Number : 129 Question Id : 2106887133 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Bearing observed in the direction of progress of survey is called as

Options :

1. ✖ Intermediate bearing

2. ✔ Fore bearing

3. ✖ Back bearing

4. ✖ Horizontal bearing

Question Number : 130 Question Id : 2106887134 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Operation of establishing intermediate points on a straight line between two terminal points is called as

Options :

1. ✔ Ranging

2. ✖ Chaining

3. ✖ Field work

4. ✖ Levelling

Question Number : 131 Question Id : 2106887135 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Length of revenue chain is

Options :

1. ✖ 31 ft

2. ✖ 32 ft

3. ✔ 33 ft

4. ✖ 34 ft

Question Number : 132 Question Id : 2106887136 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Clinometer is used to measure

Options :

1. ✖ Right angle

2. ✖ Horizontal angle

3. ✔ Slope angle

4. ✖ Acute angle

Question Number : 133 Question Id : 2106887137 Display Question Number : Yes Is Question

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

Hydrology is a branch of

Options :

1. ✖ Geography

2. ✖ Geology

3. ✔ Earth science

4. ✖ Biology

Question Number : 134 Question Id : 2106887138 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Rainfall at a single station is

Options :

1. ✖ Station rainfall

2. ✖ Orographic rainfall

3. ✔ Point rainfall

4. ✖ Convectional rainfall

Question Number : 135 Question Id : 2106887139 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Vegetation tends to _____ runoff from catchment.

Options :

1. ✖ Increase

2. ✔ Decrease

3. ✖ Support

4. ✖ Divert

Question Number : 136 Question Id : 2106887140 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Downward entry of water into the soil at the ground surface is known as

Options :

1. ✔ Infiltration

2.

Seepage

3. Percolation

4. Runoff

Question Number : 137 Question Id : 2106887141 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Line joining the points of equal precipitation is called as

Options :

1. Isochrones

2. ✔ Isohyets

3. Contour

4. Interflow line

Question Number : 138 Question Id : 2106887142 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hydrological cycle

Options :

1. ✖ Has beginning but does not end

2. ✖ Has both beginning and end

3. ✔ Occurs continuously in nature

4. ✖ Has end in some special climatic conditions

Question Number : 139 Question Id : 2106887143 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Land capability class in which soils have no significant limitations in use for crops is

Options :

1. ✔ Class 1

2. ✖ Class 2

3. ✖ Class 3

Class 4

4. ✖

Question Number : 140 Question Id : 2106887144 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Direct surface runoff is sum of

Options :

Surface flow and subsurface flow

1. ✔

Overland flow and base flow

2. ✖

Interflow and base flow

3. ✖

Surface flow and base flow

4. ✖

Question Number : 141 Question Id : 2106887145 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the rational formula $Q = 0.0028CIA$, I is the intensity of rainfall in

Options :

mm per h

1. ✔

2. ✖ cm per h

3. ✖ m per h

4. ✖ cm per min

Question Number : 142 Question Id : 2106887146 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Type of erosion occurs when soil comes in contact with large moving glaciers and it sticks to the base of the glaciers is

Options :

1. ✖ Wind erosion

2. ✖ Water erosion

3. ✔ Glacier erosion

4. ✖ Gravitational erosion

Question Number : 143 Question Id : 2106887147 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Removal of excess water from the soil surface in time to prevent damage to crops and to keep water from ponding on the soil surface is referred as

Options :

1. ✖ Sub surface drainage

2. ✖ Vertical drainage

3. ✔ Surface drainage

4. ✖ Horizontal drainage

Question Number : 144 Question Id : 2106887148 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Component in drip system which removes sand and large suspended particles from water before they enter the distribution channel is

Options :

1. ✔ Filter

2. ✖ Pump

3. ✖ Emitter

4. ✖ Lateral

Question Number : 145 Question Id : 2106887149 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which kind of water is actually available for crop?

Options :

1. ✖ Gravitational

2. ✖ Capillary

3. ✔ Hygroscopic

4. ✖ Natural

Question Number : 146 Question Id : 2106887150 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Relation between irrigated area and quantity of water used is denoted by

Options :

1. Delta ✖

2. Duty ✔

3. Irrigation intensity ✖

4. Field capacity ✖

Question Number : 147 Question Id : 2106887151 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct sequence of components in drip irrigation distribution channel is

Options :

1. Mains-Submain-Lateral-Emitters ✔

2. Mains-Emitters-Laterals-Submains ✖

3. Submains-Laterals-Mains-Emitters ✖

4. Emitters-Submains-Mains-Laterals ✖

Question Number : 148 Question Id : 2106887152 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Total depth of irrigation to crop in centimetre is called as

Options :

1. ✔ Delta

2. ✖ Duty

3. ✖ Irrigation intensity

4. ✖ Field capacity

Question Number : 149 Question Id : 2106887153 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Condition of a land in which the water table comes within or very near the root zone due to which crop yields decrease below the normal yield refers to

Options :

1. ✖ Salinity

2. ✔ Waterlogging

3. ✖ Saturation

4. ✖ Flood

Question Number : 150 Question Id : 2106887154 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Determination of evapotranspiration is done with

Options :

1. ✔ Lysimeter

2. ✖ Thermometer

3. ✖ Hygrometer

4. ✖ Luxmeter

Question Number : 151 Question Id : 2106887155 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Irrigation is the _____ application of water to help in crop growth.

Options :

1. ✔ Artificial

2. ✖ Natural

3. ✖ Syphon

4. ✖ Rain water

Question Number : 152 Question Id : 2106887156 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pressurised irrigation method in which water is sprayed into the air and fall on the ground surface somewhat resembling like rainfall is

Options :

1. ✔ Sprinkler irrigation

2. ✖ Drip irrigation

3. ✖

Flood irrigation

Furrow irrigation method

4. ✖

Question Number : 153 Question Id : 2106887157 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Extraction of soluble constituents from a solid by means of solvent is known as

Options :

Distillation

1. ✖

Sublimation

2. ✖

Filtration

3. ✖

Leaching

4. ✔

Question Number : 154 Question Id : 2106887158 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Unit of thermal conductivity is

Options :

1. ✖ $W/m^2\text{-}K$

2. ✖ W/m

3. ✔ $W/m\text{-}K$

4. ✖ W/m^2

Question Number : 155 Question Id : 2106887159 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Method for separating mixture based on difference in volatilities of components in a boiling liquid mixture in known as

Options :

1. ✖ Evaporation

2. ✔ Distillation

3. ✖ Leaching

4. ✖ Fractional separation

Question Number : 156 Question Id : 2106887160 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Maximum allowable temperature of seed during drying is

Options :

1. ✔ 45 °C

2. ✖ 60 °C

3. ✖ 75 °C

4. ✖ 80 °C

Question Number : 157 Question Id : 2106887161 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Geometric mean diameter of the particle is also called as

Options :

1. ✔ Equivalent diameter

2. ✖ Geometric diameter

Internal diameter

3. ✖

Outer diameter

4. ✖

Question Number : 158 Question Id : 2106887162 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Capacity of *Morai* type storage structure is

Options :

2.5 to 17 tonnes

1. ✖

3.5 to 18 tonnes

2. ✔

2 to 4 tonnes

3. ✖

4 to 6 tonnes

4. ✖

Question Number : 159 Question Id : 2106887163 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In attrition mill, the size of food grains is reduced due to

Options :

1. ✖ Impact and shear

2. ✔ Shear and crushing

3. ✖ Impact and crushing

4. ✖ Impact only

Question Number : 160 Question Id : 2106887164 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pneumatic separator separates grains based on their

Options :

1. ✖ Shape

2. ✖ Length

3. ✔ Aerodynamic properties

Texture

4. ✖

Question Number : 161 Question Id : 2106887165 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Safe moisture content of paddy for storage over a year is

Options :

1. ✖ 10%

2. ✖ 11%

3. ✔ 12%

4. ✖ 13%

Question Number : 162 Question Id : 2106887166 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In thin-layer drying of food grains, thickness of the layer is limited to

Options :

1. ✖ 5 cm

2. ✖ 15 cm

3. ✖ 10 cm

4. ✔ 20 cm

Question Number : 163 Question Id : 2106887167 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Seed drying is very important to maintain its

Options :

1. ✖ Oil content

2. ✖ Protein content

3. ✖ Chemical composition

4. ✔ Vigour and vitality

Question Number : 164 Question Id : 2106887168 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

LSU dryer was developed in

Options :

1. ✖ India

2. ✖ England

3. ✔ USA

4. ✖ Canada

Question Number : 165 Question Id : 2106887169 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Water displacement method is used for the measurement of

Options :

1. ✖ Porosity

2. ✖ Roundness

Volume

3. ✔

Hardness

4. ✖

Question Number : 166 Question Id : 2106887170 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Viscosity divided by mass density is called as

Options :

Dynamic viscosity

1. ✖

Kinematic viscosity

2. ✔

Frictional viscosity

3. ✖

Kinematic density

4. ✖

Question Number : 167 Question Id : 2106887171 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Electromagnetic energy that travels in transverse waves is referred as

Options :

1. ✖ Thermal energy

2. ✔ Radiant energy

3. ✖ Electrical energy

4. ✖ Gravitational energy

Question Number : 168 Question Id : 2106887172 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Substance through which the passage of current not allowed is

Options :

1. ✔ Insulators

2. ✖ Conductors

3. ✖ Semiconductors

Electrons

4. ✖

Question Number : 169 Question Id : 2106887173 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Collector usually contains reflectors or employs other optical means to concentrate the energy falling on the aperture is called as

Options :

Photovoltaic cell

1. ✔

Flat plate collector

2. ✖

Concentrating collector

3. ✖

Tube collector

4. ✖

Question Number : 170 Question Id : 2106887174 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Substance used as insulator is

Options :

1. ✖ Copper

2. ✔ Rubber

3. ✖ Iron

4. ✖ Water

Question Number : 171 Question Id : 2106887175 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Discharge pattern of products from belt conveyor follows

Options :

1. ✖ Bell shape

2. ✖ Non-linear

3. ✔ Parabolic

4. ✖ Sigmoid

Question Number : 172 Question Id : 2106887176 Display Question Number : Yes Is Question

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

SI unit of power is

Options :

1. ✔ Watt

2. ✖ Ohm

3. ✖ Ampere

4. ✖ Volt

Question Number : 173 Question Id : 2106887177 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Non-renewable source of energy is

Options :

1. ✖ Solar

2. ✖ Wind

3. ✖ Geothermal

4. ✔ Fossil fuels

Question Number : 174 Question Id : 2106887178 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Most crops will respond favourably to CO_2 at

Options :

1. ✔ 1000 to 1200 ppm

2. ✖ 100 to 1000 ppm

3. ✖ 10 to 100 ppm

4. ✖ 1500 to 2000 ppm

Question Number : 175 Question Id : 2106887179 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Type of greenhouse which has a roof of an even pitch and width is

Options :

1. ✖ Uneven span type

2. ✔ Even span type

3. ✖ Lean to type

4. ✖ Ridge and furrow type

Question Number : 176 Question Id : 2106887180 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Type of greenhouse which takes a building wall as one of its side is

Options :

1. ✔ Lean to type

2. ✖ Even span type

3. ✖ Uneven span type

4. ✖ Ridge and furrow type

Question Number : 177 Question Id : 2106887181 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Visible and white light has wavelengths of

Options :

1. ✖ 600 to 900 nm

2. ✖ 500 to 800 nm

3. ✔ 400 to 700 nm

4. ✖ 700 to 1000 nm

Question Number : 178 Question Id : 2106887182 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

System which consists of a central boiler that produces steam or hot water and a radiating mechanism in the greenhouse for dissipating the heat is

Options :

1. ✔ Central heating system

Radiation heating system

2. ✖

Solar heating system

3. ✖

Unit heater

4. ✖

Question Number : 179 Question Id : 2106887183 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Low-cost biogas plant is

Options :

KVIC fixed dome

1. ✖

KVIC floating dome

2. ✖

Deenbandhu biogas plant

3. ✔

Janata biogas plant

4. ✖

Question Number : 180 Question Id : 2106887184 Display Question Number : Yes Is Question

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

Process to convert biomass solid raw material into fuel gas or chemical feedstock gas (syngas) is called as

Options :

1. ✔ Gasification

2. ✖ Combustion

3. ✖ Co-combustion

4. ✖ Pelleting

Question Number : 181 Question Id : 2106887185 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Thermal decomposition of biomass begins at

Options :

1. ✖ 20-30 °C

2. ✔ 200-300 °C

3. ✖ 2000-3000 °C

4. ✖ 2200-3300 °C

Question Number : 182 Question Id : 2106887186 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Percentage of methane gas in biogas is

Options :

1. ✖ 5-10%

2. ✖ 10-20%

3. ✖ 20-50%

4. ✔ 50-70%

Question Number : 183 Question Id : 2106887187 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Process of applying pressure to a biomass and converting it into a compact product of high bulk density, low moisture content, uniform size and shape and good burning characteristics is

Options :

1. ✔ Briquetting

2. ✖ Gasification

3. ✖ Combustion

4. ✖ Biogas generation

Question Number : 184 Question Id : 2106887188 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In case of four-stroke spark ignition engine, when the piston travels from TDC to BDC with the intake valve open and exhaust valve closed, the stroke is referred as

Options :

1. ✔ Suction stroke

2. ✖ Compression stroke

3. ✖ Power stroke

4. ✖ Exhaust stroke

Question Number : 185 Question Id : 2106887189 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Compressibility is reciprocal of

Options :

1. ✔ Bulk modulus of elasticity

2. ✖ Shear modulus of elasticity

3. ✖ Young's modulus of elasticity

4. ✖ Stress value

Question Number : 186 Question Id : 2106887190 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a beam is fixed or built in at one end while its other end is free, the member is called as

Options :

1. ✖ Simply or freely supported beam

2. ✔ Cantilever beam

3. ✖ Fixed beam

4. ✖ Continuous beam

Question Number : 187 Question Id : 2106887191 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Temperature required for forging of wrought iron at the beginning of process is

Options :

1. ✔ Below 1300 °C

2. ✖ Above 1300 °C

3. ✖ Below 1000 °C

Below 500 °C

4. ✖

Question Number : 188 Question Id : 2106887192 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which is not an extensive property of system?

Options :

Entropy

1. ✖

Enthalpy

2. ✖

Volume

3. ✖

Density

4. ✔

Question Number : 189 Question Id : 2106887193 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Normal length of tongs in hand forging vary from

Options :

400 to 600 mm

1. ✔

100 to 200 mm

2. ✖

200 to 300 mm

3. ✖

50 to 150 mm

4. ✖

Question Number : 190 Question Id : 2106887194 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ideal fluid is

Options :

Imaginary fluid

1. ✔

Real fluid

2. ✖

Viscous fluid

3. ✖

Compressible fluid

4. ✖

Question Number : 191 Question Id : 2106887195 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Annealing process where heating of steel to austenite state and then cooling it down to a temperature of about 630-680 °C at a relatively faster rate is knows as

Options :

1. ✖ Full annealing

2. ✖ Diffusion annealing

3. ✖ Spheroidise annealing

4. ✔ Isothermal annealing

Question Number : 192 Question Id : 2106887196 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a process is carried out in such a way that at every instant (intermediate states - 'a', 'b', 'c', 'd') the system remains infinitesimally close to thermodynamic equilibrium state, then such a process is called as

Options :

1. ✔ Quasi-static process

2. ✖ Cyclic process

3. ✖ Flow process

4. ✖ Non-flow process

Question Number : 193 Question Id : 2106887197 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When the lines of action of a set of forces lie in a single plane is called as

Options :

1. ✔ Coplanar force system

2. ✖ Non-coplanar force system

3. ✖ Concurrent force system

4. ✖

Non-concurrent force system

Question Number : 194 Question Id : 2106887198 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hot chisel is made up of

Options :

1. ✖ High carbon steel

2. ✔ Medium carbon steel

3. ✖ Aluminium

4. ✖ Stainless steel

Question Number : 195 Question Id : 2106887199 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

System where matter crosses the boundary of the system and the quantity and number of molecules of the matter within the boundary of the system not fixed is referred as

Options :

1. ✔ Open system

2. ✖ Closed system

3. ✖ Isolated system

4. ✖ Control mass system

Question Number : 196 Question Id : 2106887200 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If two resolved components of force are perpendicular to one another, then they are known as

Options :

1. ✔ Rectangular components

2. ✖ Inclined components

3. ✖ Horizontal components

4. ✖

Perpendicular components

Question Number : 197 Question Id : 2106887201 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Law of thermodynamics which deals with thermal equilibrium between systems and provides a means of measuring temperature is

Options :

1. ✖ First law

2. ✔ Zeroth law

3. ✖ Second law

4. ✖ Third law

Question Number : 198 Question Id : 2106887202 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Moment of inertia of an area is expressed as

Options :

1. ✖

Square of the distance

2. ✖ Cube of the distance

3. ✔ Fourth power of the distance

4. ✖ Fifth power of the distance

Question Number : 199 Question Id : 2106887203 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Shear stress in fluid layer is directly proportional to velocity gradient. The governing law is

Options :

1. ✖ Pascal's law

2. ✔ Newton's law of viscosity

3. ✖ Kirchoff's law

4. ✖ Kick's law

Question Number : 200 Question Id : 2106887204 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Surface tension is expressed in

Options :

1. ✔ N/m

2. ✖ N/m^2

3. ✖ N/m^3

4. ✖ N/m^4