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 20th June 2023 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 : 418099349

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 : 41809917401 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\Delta = \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1+x & 1 \\ 1 & 1 & 1+y \end{vmatrix}$ for $x \neq 0$ and $y \neq 0$, then Δ is

Options :

1. ✖ Divisible by x but not y

2. ✖ Divisible by y but not x

3. ✔

Divisible by both x & y

Divisible by neither x nor y

4. ✖

Question Number : 2 Question Id : 41809917402 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $x^a y^b = e^m$ and $x^c y^d = e^n$, $\Delta_1 = \begin{vmatrix} m & b \\ n & d \end{vmatrix}$, $\Delta_2 = \begin{vmatrix} a & m \\ c & n \end{vmatrix}$ and $\Delta_3 = \begin{vmatrix} a & b \\ c & d \end{vmatrix}$

Then the values of x and y are

Options :

1. ✖ $\dfrac{\Delta_1}{\Delta_3}$ and $\dfrac{\Delta_2}{\Delta_3}$

2. ✖ $\dfrac{\Delta_2}{\Delta_1}$ and $\dfrac{\Delta_3}{\Delta_1}$

3. ✖ $\log\left(\dfrac{\Delta_1}{\Delta_3}\right)$ and $\log\left(\dfrac{\Delta_2}{\Delta_3}\right)$

4. ✔ $e^{\left(\frac{\Delta_1}{\Delta_3}\right)}$ and $e^{\left(\frac{\Delta_2}{\Delta_3}\right)}$

Question Number : 3 Question Id : 41809917403 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

If $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & a & 1 \end{bmatrix}$ and $A^{-1} = \begin{bmatrix} 1/2 & 1/2 & 1/2 \\ -4 & 3 & c \\ 5/2 & -3/2 & 1/2 \end{bmatrix}$ then the values of

a and c are equal to

Options :

1. ✗   1 and 1

2. ✓   1 and -1

3. ✗   1 and 2

4. ✗ -1 and 1

Question Number : 4 Question Id : 41809917404 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $adj\ B = A$, $|P| = |Q| = 1$ then $adj(Q^{-1}BP^{-1})$ is

Options :

1. ✗ PQ

2. ✗ QAP

3. ✓ PAQ

4. ✖ $PA^{-1}Q$

Question Number : 5 Question Id : 41809917405 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 x if the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies the equation

$A^T A = I$

Options :

1. ✔ $\pm \dfrac{1}{\sqrt{2}}$

2. ✖ $\pm \dfrac{1}{\sqrt{3}}$

3. ✖ $\pm \dfrac{1}{\sqrt{6}}$

4. ✖ $\pm \dfrac{1}{2\sqrt{2}}$

Question Number : 6 Question Id : 41809917406 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\dfrac{(x+1)}{(x-a)(x-3)} = \dfrac{2}{x-a} + \dfrac{b}{x-3}$ then $(a, b) =$

Options :

1. ✖ $(-4, 1)$

2. ✔ $(7, -1)$

3. ✖ $(4, 1)$

4. ✖ $(-4, -1)$

Question Number : 7 Question Id : 41809917407 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\dfrac{(x+1)^2}{x^3 + x} = \dfrac{A}{x} + \dfrac{Bx + C}{x^2 + 1}$, then $\sin^{-1}\left(\dfrac{A}{C}\right) =$

Options :

1. ✖ $\dfrac{\pi}{2}$

2. ✖ $\dfrac{\pi}{3}$

3. ✖ $\dfrac{\pi}{4}$

4. ✔ $\dfrac{\pi}{6}$

Question Number : 8 Question Id : 41809917408 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $4n\alpha = \pi$, then $\cot\alpha \cot 2\alpha \cot 3\alpha \ldots \cot(2n-1)\alpha$ *is equal to*

Options :

1. ✔ 1

2. ✖ -1

3. ✖ ∞

4. ✖ π

Question Number : 9 Question Id : 41809917409 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\dfrac{\tan 3A}{\tan A} = k$, *then* $\dfrac{\sin 3A}{\sin A}$ *is equal to*

Options :

1. ✖ $\dfrac{2k}{k-1}$, $k \in R$

2. ✗ $\dfrac{2k}{k-1}$, $k \in [1/3 , 3]$

3. ✓ $\dfrac{2k}{k-1}$, $k \notin [1/3 , 3]$

4. ✗ $\dfrac{k-1}{2k}$, $k \notin [1/3 , 3]$

Question Number : 10 Question Id : 41809917410 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If two angles of a $\Delta\ ABC$ are $45°$ and $60°$ then the ratio of smallest to greatest sides are

Options :

1. ✓ $(\sqrt{3}-1) : 1$

2. ✗ $\sqrt{3} : \sqrt{2}$

3. ✗ $1 : \sqrt{3}$

4. ✗ $\sqrt{3} : 1$

Question Number : 11 Question Id : 41809917411 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

If $\sin^{-1} x + \sin^{-1} y = \dfrac{2\pi}{3}$ then $\cos^{-1} x + \cos^{-1} y =$

Options :

1. ✖ $\dfrac{2\pi}{3}$

2. ✔ $\dfrac{\pi}{3}$

3. ✖ $\dfrac{\pi}{6}$

4. ✖ π

Question Number : 12 Question Id : 41809917412 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 $\tan\{\sin^{-1}(\cos(\sin^{-1} x))\} \tan\{\cos^{-1}(\sin(\cos^{-1} x))\}$, where

$0 < x < \pi/2$, is equal to

Options :

1. ✖ 0

2. ✔ 1

3. ✖ -1

4. ✘ 2

Question Number : 13 Question Id : 41809917413 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $0 \leq x, y \leq 2\pi$ and $\sin x + \sin y = 2$, then $x + y =$

Options :

1. ✔ π

2. ✘ $\dfrac{\pi}{2}$

3. ✘ $\dfrac{\pi}{4}$

4. ✘ 3π

Question Number : 14 Question Id : 41809917414 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\sec \alpha$ and $\csc \alpha$ are the roots of $x^2 - px + q = 0$, then

Options :

1. ✘ $p^2 = q(q-2)$

2. ✔ $p^2 = q(q+2)$

3. ✘ $p^2 + q^2 = 2q$

4. ✘ $p^2 + q^2 = q$

Question Number : 15 Question Id : 41809917415 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 $\cos\left(\dfrac{1}{2}\cos^{-1}\dfrac{1}{8}\right)$ is

Options :

1. ✔ $\dfrac{3}{4}$

2. ✘ $\dfrac{3}{8}$

3. ✘ $\dfrac{1}{16}$

4. ✘ $\dfrac{1}{4}$

Question Number : 16 Question Id : 41809917416 Display Question Number : Yes Is Question

If in $\triangle ABC$, sides a, b, c are in A.P. , then

Options :

1. ✖ $B > 60°$

2. ✔ $B \leq 60°$

3. ✖ $B = |A - C|$

4. ✖ $B = 90°$

Question Number : 17 Question Id : 41809917417 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In $\triangle ABC$ if $b^2 + c^2 = 2a^2$, then the value of $\dfrac{\cot A}{\cot B + \cot C}$ is

Options :

1. ✔ $\dfrac{1}{2}$

2. ✖ $\dfrac{3}{2}$

3. ✖

$$\frac{5}{2}$$

$$\frac{5}{3}$$

4. ✖

Question Number : 18 Question Id : 41809917418 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Given that $z = (1 + i\sqrt{3})^{100}$, then $\left(\dfrac{Re(z)}{Im(z)}\right) =$

Options :

1. ✖ 2^{100}

2. ✖ 2^{50}

3. ✔ $\dfrac{1}{\sqrt{3}}$

4. ✖ $\sqrt{3}$

Question Number : 19 Question Id : 41809917419 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sum of the common roots of the equations

$z^3 + 2z^2 + 2z + 1 = 0$ and $z^{1985} + z^{100} + 1 = 0$ is

Options :

1. ✔ -1

2. ✘ 1

3. ✘ 0

4. ✘ 2

Question Number : 20 Question Id : 41809917420 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 circle which passes through $(1, 0)$ and $(0, 1)$ and has its

radius as small as possible is

Options :

1. ✔ $x^2 + y^2 - x - y = 0$

2. ✘ $x^2 + y^2 = 1$

3. ✘ $2x^2 + 2y^2 - 3x - 3y + 1 = 0$

$$x^2 + y^2 - 4x - 4y + 3 = 0$$

4. ✖

Question Number : 21 Question Id : 41809917421 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The focal distance of the point (x, y) on the parabola $x^2 - 8x + 16y = 0$ is

Options :

1. ✖ $|x - 5|$

2. ✖ $|y - 5|$

3. ✖ $|x + 5|$

4. ✔ $|y + 5|$

Question Number : 22 Question Id : 41809917422 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 greatest rectangle that can be inscribed in the ellipse

$$\frac{x^2}{9} + \frac{y^2}{4} = 1 \text{ is}$$

Options :

1. ✔ 12 sq. units

2. ✖ 8 sq. units

3. ✖ 15 sq. units

4. ✖ 4 sq.units

Question Number : 23 Question Id : 41809917423 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 $16x^2 + 25y^2 = 400$ is

Options :

1. ✖ 2/3

2. ✔ 3/5

3. ✖ 4/3

4. ✖ 1/5

Question Number : 24 Question Id : 41809917424 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The axes of an ellipse are coordinate axes, distance between directrices is 32.

Then the equation of the ellipse , if the distance between the foci is 8 is

Options :

1. ✖ $\dfrac{x^2}{64} + \dfrac{y^2}{32} = 1$

2. ✖ $\dfrac{x^2}{64} + \dfrac{y^2}{16} = 1$

3. ✔ $\dfrac{x^2}{64} + \dfrac{y^2}{48} = 1$

4. ✖ $\dfrac{x^2}{64} + \dfrac{y^2}{8} = 1$

Question Number : 25 Question Id : 41809917425 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The length of the transverse axis of the hyperbola $4x^2 - 9y^2 + 8x + 40 = 0$ is

Options :

1. ✖ 8

2. ✖ 6

3. ✔ 4

4. ✖ 5

Question Number : 26 Question Id : 41809917426 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $f(x) = \dfrac{1}{3}\left(f(x+1) + \dfrac{5}{f(x+2)} \right)$ and $f(x) > 0$ then for all $x \in R$, then

for $\displaystyle \lim_{x \to \infty} f(x) =$

Options :

1. ✖ 0

2. ✖ $\sqrt{\dfrac{2}{5}}$

3. ✔ $\sqrt{\dfrac{5}{2}}$

4. ✖ ∞

Question Number : 27 Question Id : 41809917427 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If α and β are the roots of $ax^2 + bx + c = 0$ then

$\displaystyle \lim_{x \to \alpha} (1 + ax^2 + bx + c)^{1/(x-\alpha)}$ is

Options :

1. ✖ $a(\alpha - \beta)$

2. ✖ $\ln |a(\alpha - \beta)|$

3. ✔ $e^{a(\alpha - \beta)}$

4. ✖ $e^{|a(\alpha - \beta)|}$

Question Number : 28 Question Id : 41809917428 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The derivative of $\sin^{-1}\left(\dfrac{2x}{1+x^2}\right)$ with respect to $\tan^{-1}\left(\dfrac{2x}{1-x^2}\right)$

Options :

1. ✖ 0

2. ✔ 1

3. ✖ $\dfrac{1}{1-x^2}$

4. ✖ $\dfrac{1}{1+x^2}$

Question Number : 29 Question Id : 41809917429 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $x^y \cdot y^x = 16$ then $\dfrac{dy}{dx}$ at $(2,2)$ is

Options :

1. ✔ -1

2. ✖ 0

3. ✖ 1

4. ✖ -2

Question Number : 30 Question Id : 41809917430 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The area if the triangle formed by positive x – axis , and the normal and

tangent to the circle $x^2 + y^2 = 4$ at $\left(1 , \sqrt{3}\right)$ is

Options :

1. ✖

$\sqrt{3}$ sq. units

2. ✔ $2\sqrt{3}$ sq. units

3. ✘ $4\sqrt{3}$ sq. units

4. ✘ $\sqrt{3}/2$ sq. units

Question Number : 31 Question Id : 41809917431 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $y = \log_{\sin x} (\tan x)$ then $\left(\dfrac{dy}{dx}\right)_{\pi/4} =$

Options :

1. ✘ $\dfrac{4}{\log 2}$

2. ✘ $-4 \log 2$

3. ✔ $\dfrac{-4}{\log 2}$

4. ✘ $2 \log 4$

Question Number : 32 Question Id : 41809917432 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If there is an error of 0.05 cm in the side of a cube 10 cm, then the error in its

surface area is

Options :

1. ✔ 6 cm^2

2. ✖ 5 cm^2

3. ✖ 12 cm^2

4. ✖ 3 cm^2

Question Number : 33 Question Id : 41809917433 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The curves $4x^2 + 9y^2 = 72$ and $x^2 - y^2 = 5$ at $(3, 2)$

Options :

1. ✖ Touch each other

2. ✔ Cut orthogonally

3.

❌ Intersect at 45°

4. ❌ Intersect at 60 °

Question Number : 34 Question Id : 41809917434 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $u = x^y$ then $\dfrac{\partial^2 u}{\partial x \partial y} =$

Options :

1. ✔ $x^{y-1}(1 + y \log x)$

2. ❌ $y^{x-1}(1 + y \log x)$

3. ❌ $y^{x-1}(1 - x \log y)$

4. ❌ $x^{y-1}(1 - y \log x)$

Question Number : 35 Question Id : 41809917435 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $u = \tan^{-1}(y/x)$ then $x\dfrac{\partial u}{\partial x} + y\dfrac{\partial u}{\partial y} =$

Options :

1. ✔ 0

2. ✘ $\sin 2u$

3. ✘ $\cos u$

4. ✘ $2 \tan^{-1} u$

Question Number : 36 Question Id : 41809917436 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$$If \int f(x)\cos x \, dx = \frac{1}{2}\left[f(x)\right]^2 + c \quad then \; f(x) =$$

Options :

1. ✘ x

2. ✔ $\sin x$

3. ✘ $\cos x$

4. ✘ $\tan x$

Question Number : 37 Question Id : 41809917437 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 $\int_0^{11} [x]^3 \, dx$, *where* $[\bullet]$ denotes the greatest integer function, is

Options :

1. ✖   0

2. ✖   14400

3. ✖   2200

4. ✔   3025

Question Number : 38 Question Id : 41809917438 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The triangle formed by tangent to the curve $f(x) = x^2 + bx - b$ at the point

(1,1) and the coordinate axes lies in the first quadrant. If its area is

2 sq.units then the value of b is

Options :

1. ✔ -3

2. ✖ -2

3.

✖ -1

4. ✖ 0

Question Number : 39 Question Id : 41809917439 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $y = \int \dfrac{dx}{(1+x^2)^{\frac{3}{2}}}$ and $y = 0$ *when* $x = 0$ then the value of y when $x = 1$ is

Options :

1. ✔ $\dfrac{1}{\sqrt{2}}$

2. ✖ $\sqrt{2}$

3. ✖ $2\sqrt{2}$

4. ✖ $3\sqrt{2}$

Question Number : 40 Question Id : 41809917440 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\int \dfrac{dx}{\cos^3 x \sqrt{\sin 2x}} = a(\tan^2 x + b)\sqrt{\tan x} + c$, then

Options :

1. ✖ $a = \dfrac{\sqrt{2}}{5}$, $b = \dfrac{1}{\sqrt{5}}$

2. ✔ $a = \dfrac{\sqrt{2}}{5}$, $b = 5$

3. ✖ $a = \dfrac{\sqrt{2}}{5}$, $b = -\dfrac{1}{\sqrt{5}}$

4. ✖ $a = \dfrac{\sqrt{2}}{5}$, $b = \sqrt{5}$

Question Number : 41 Question Id : 41809917441 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 $\int_{-1}^{1} \tan^{-1} x \, dx$ is

Options :

1. ✔ 0

2. ✖ $\dfrac{\pi}{4}$

3. ✖ $-\dfrac{\pi}{4}$

4. ✖ $\dfrac{\pi}{2}$

Question Number : 42 Question Id : 41809917442 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $S_n = \left[\dfrac{1}{1+\sqrt{n}} + \dfrac{1}{2+\sqrt{2n}} + \dfrac{1}{3+\sqrt{3n}} + \ldots + \dfrac{1}{n+\sqrt{n^2}} \right]$ then $\underset{n \to \infty}{lt} S_n =$

Options :

1. ✖ $\log 2$

2. ✔ $\log 4$

3. ✖ $\log 6$

4. ✖ $\log 8$

Question Number : 43 Question Id : 41809917443 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 the solid generated by revolving the ellipse $\frac{x^2}{9} + \frac{y^2}{16} = 1$ about the minor axis is_____ cubic units.

Options :

1. ✖ $128\,\pi$

2. ✖ $64\,\pi$

3. ✔ $48\,\pi$

4. ✖ $16\,\pi$

Question Number : 44 Question Id : 41809917444 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 of all parabolas whose axis are parallel to y-axis is

Options :

1. ✔ $\frac{d^3 y}{dx^3} = 0$

2. ✖ $\frac{d^2 y}{dx^2} = C$

$$\frac{d^3y}{dx^3} + \frac{d^2y}{dx^2} = 0$$

3. ✗

$$\frac{d^2y}{dx^2} + 2\frac{dy}{dx} = C$$

4. ✗

Question Number : 45 Question Id : 41809917445 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Integrating factor of the differential equation $\cos x \dfrac{dy}{dx} + y\sin x = 1$ is

Options :

1. ✗ $\cos x$

2. ✗ $\tan x$

3. ✔ $\sec x$

4. ✗ $\sin x$

Question Number : 46 Question Id : 41809917446 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 associated with the primitive $ax^2 + by^2 = 1$ is

Options :

1. ✖ $x = y\dfrac{dy}{dx}$

2. ✖ $x + y\dfrac{dy}{dx} = 0$

3. ✔ $x\left(\dfrac{dy}{dx}\right)^2 + xy\dfrac{d^2y}{dx^2} = y\dfrac{dy}{dx}$

4. ✖ $x = y\dfrac{d^2y}{dx^2}$

Question Number : 47 Question Id : 41809917447 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The primitive for the differential equation $x\,dy - (y - x)dx = 0$ is

Options :

1. ✖ $\dfrac{x}{y} + \log|x| = C$

2. ✔ $\dfrac{y}{x} + \log|x| = C$

3. ✖ $\dfrac{x}{y}\log|x| = C$

$$x^2 + y^2 = C$$

4. ✖

Question Number : 48 Question Id : 41809917448 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The degree of the differential equation $y = x\dfrac{dy}{dx} + \sqrt{1 + \left(\dfrac{dy}{dx}\right)^2}$

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 4

4. ✖ 3

Question Number : 49 Question Id : 41809917449 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The order of the differential equation corresponding to the primitive

$y = ae^x + be^{2x} + ce^{3x}$ where a, b and c are arbitrary constants

Options :

1. ✖

1.

2. ✖   2

3. ✔   3

4. ✖   4

Question Number : 50 Question Id : 41809917450 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The complimentary function of the differential equation

$$\frac{d^2 y}{dx^2} + 4\frac{dy}{dx} + 4y = 4\cos x \text{ is}$$

Options :

1. ✖ $y = c_1 \cos 2x + c_2 \sin 2x$

2. ✔ $y = (c_1 + c_2 \, x)e^{-2x}$

3. ✖ $y = c_1^2 + 4c_2 + 4c_3$

4. ✖ $y = 4\cos c_1 x$

Physics

Section Id :	418099350
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 : 41809917451 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The dimension of the ratio of angular momentum and linear

momentum is

Options :

1. ✖ L^0

2. ✔ L^1

3. ✖ L^2

L^{-1}

4. ✖

Question Number : 52 Question Id : 41809917452 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One Fermi is equivalent to

Options :

10^{-12} meter

1. ✖

10^{12} meter

2. ✖

10^{-15} meter

3. ✔

10^{15} meter

4. ✖

Question Number : 53 Question Id : 41809917453 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A cat is situated at point A (0,3,4) and a rat is situated at point B (5,3,-8).

The cat is free to move but the rat is always at rest. Find the minimum

distance travelled by cat to catch the rat

Options :

5 units

1. ✖

12 units

2. ✖

13 units

3. ✔

17 units

4. ✖

Question Number : 54 Question Id : 41809917454 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find the values of x and y for which vectors $\vec{A} = (6\hat{i}+x\hat{j}-2\hat{k})$ and

$\vec{B} = (5\hat{i}-6\hat{j}-y\hat{k})$ may be parallel

Options :

$x=0,\ y=\dfrac{2}{3}$

1. ✖

$x=-\dfrac{36}{5},\ y=\dfrac{5}{3}$

2. ✔

$x=-\dfrac{15}{3},\ y=\dfrac{23}{5}$

3. ✖

$$x = \frac{36}{5}, y = \frac{15}{4}$$

4. ✖

Question Number : 55 Question Id : 41809917455 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 a body moving along a straight line with uniform deceleration 'a' reduces by ¾ of its initial velocity. The total time of motion of the body is

Options :

1. ✔
$$\frac{3u}{4a}$$

2. ✖
$$\frac{4a}{3u}$$

3. ✖
$$3u \times 4a$$

4. ✖
zero

Question Number : 56 Question Id : 41809917456 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A stone thrown vertically upwards with a speed of 'u' m/s attains a height 'h₁'. Another stone thrown vertically upwards from the same point with a speed of $\frac{u}{3}$ m/s attains a height 'h₂'. Choose the correct relation

Options :

1. ✔ $h_2 = \frac{h_1}{9}$

2. ✘ $h_2 = \frac{h_1}{19}$

3. ✘ $h_2 = \frac{h_1}{3}$

4. ✘ $h_2 = 3h_1$

Question Number : 57 Question Id : 41809917457 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The horizontal range of a projectile is $4\sqrt{3}$ times of its maximum height. Its angle of projection will be

Options :

1. ✔ 30^0

2. ✖ 60^0

3. ✖ 90^0

4. ✖ 45^0

Question Number : 58 Question Id : 41809917458 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 a projectile fired at an angle of 15° is 30m. If it is fired with

the same speed at an angle of 45°, its range will be

Options :

1. ✖ 50m

2. ✖ 30m

3. ✔ 60m

4. ✖ 100m

Question Number : 59 Question Id : 41809917459 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a body slides down an inclined plane with coefficient of friction as μ.

then its acceleration is given by

Options :

1. ✖ $g(\mu \sin \theta + \cos \theta)$

2. ✖ $g(\mu \sin \theta - \cos \theta)$

3. ✖ $g(\sin \theta + \mu \cos \theta)$

4. ✔ $g(\sin \theta - \mu \cos \theta)$

Question Number : 60 Question Id : 41809917460 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 in equilibrium on a rough inclined plane under its own weight. If

the angle of inclination of the inclined plane is 'α' and the angle of friction

is 'λ',then

Options :

1. ✖ $\alpha > \lambda$

2. ✖ $\alpha > \lambda/2$

3. ✔ $\alpha = \lambda$

4. ✖ $\alpha \geq \lambda$

Question Number : 61 Question Id : 41809917461 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A ball of mass 1 kg collides with a wall with speed 8 ms^{-1} and rebounds on the same line with the same speed. If mass of the wall is taken as infinite, the work done by the ball on the wall is

Options :

1. ✖ 6 J

2. ✖ 8 J

3. ✖ 9 J

4. ✔ zero

Question Number : 62 Question Id : 41809917462 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A pump motor is used to deliver water at a certain rate from a given pipe.

To obtain thrice as much water from the same pipe in the same time, power

of the motor has to be increased

Options :

1. ✖   3 times

2. ✖   9 times

3. ✔   27 times

4. ✖   81 times

Question Number : 63 Question Id : 41809917463 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The energy required to accelerate a car from rest to 10 ms^{-1} is E. What

energy will be required to accelerate the car from 10 ms^{-1} to 20 ms^{-1}?

Options :

1. ✖   E

2. ✔   3E

3. ✖   5E

4. ✖   7E

Question Number : 64 Question Id : 41809917464 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The time period of a simple pendulum of infinite length is (R_e = radius of earth)

Options :

1. ✔ $T = 2\pi \sqrt{\dfrac{R_e}{g}}$

2. ✖ $T = 2\pi \sqrt{\dfrac{2R_e}{g}}$

3. ✖ $T = 2\pi \sqrt{\dfrac{R_e}{2g}}$

4. ✖ $T = \infty$

Question Number : 65 Question Id : 41809917465 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A particle executes SHM of amplitude 5 cm and period 3 s. The velocity of

the particle at a distance 4 cm from the mean position (take $\pi = 3$) is

Options :

1. ✖ 8 cm s^{-1}

2. ✖ 12 cm s^{-1}

3. ✖ 4 cm s^{-1}

4. ✔ 6 cm s^{-1}

Question Number : 66 Question Id : 41809917466 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A particle is executing SHM with amplitude α and has maximum velocity

'v'. Its speed at displacement $\alpha/2$ will be

Options :

1. ✔ 0.866 v

$$v/2$$

2. ✖

$$v$$

3. ✖

$$v/4$$

4. ✖

Question Number : 67 Question Id : 41809917467 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A whistle of frequency 1000 Hz is sounded on a car travelling towards a cliff with velocity of 18 m s^{-1} normal to the cliff. If velocity of sound $= 330$ m s^{-1}, then the apparent frequency of the echo as heard by the car driver is nearly

Options :

1. ✔   1115 Hz

2. ✖   115 Hz

3. ✖   67 Hz

4. ✖   47.2 Hz

Question Number : 68 Question Id : 41809917468 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An open window is a perfect

Options :

Reflector of sound

1. ✖

Absorber of sound

2. ✔

Scatterer

3. ✖

Refractor

4. ✖

Question Number : 69 Question Id : 41809917469 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A gas is found to obey P^2V = constant. The initial temperature and volume are T_0 & V_0. If the gas expands to volume $2V_0$, then the final temperature is

Options :

1. ✔ $\sqrt{2}\, T_0$

2. ✖   2To

3. ✖ $\dfrac{T_0}{2}$

4. ✖ $\dfrac{T_0}{\sqrt{2}}$

Question Number : 70 Question Id : 41809917470 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The constant in ideal gas equation is known as

Options :

1. ✔   Universal gas constant

2. ✖   Pressure constant

3. ✖   Temperature constant

4. ✖   Boltzmann constant

Question Number : 71 Question Id : 41809917471 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of specific heats for a mono atomic gas is given by

Options :

1. ✖ $\dfrac{7}{5}$

2. ✖ $\dfrac{5}{2}$

3. ✔ $\dfrac{5}{3}$

4. ✖ $\dfrac{9}{5}$

Question Number : 72 Question Id : 41809917472 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two identical samples of a gas are allowed to expand (i) isothermally (ii) adiabatically. Work done is

Options :

1. ✖ More in the adiabatic process

More in the isothermal process

2. ✔

Equal in both processes

3. ✘

No Work done in any process

4. ✘

Question Number : 73 Question Id : 41809917473 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The heat required to raise 0.5 Kg of sand from 30°C to 90 °C is given by

(Specific Heat of sand = 830 J/Kg °C)

Options :

23450J

1. ✘

54560J

2. ✘

4578J

3. ✘

24900J

4. ✔

Question Number : 74 Question Id : 41809917474 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A ray of light will undergo total internal reflection if it

Options :

1. ✔ Travels from denser medium to rarer medium & angle of incidence should be greater than critical angle

2. ✘ Travels from rarer medium to denser medium & angle of incidence should be greater than critical angle

3. ✘ Travels from denser medium to rarer medium & angle of incidence should be less than critical angle

4. ✘ Travels from rarer medium to denser medium& angle of incidence should be less than critical angle

Question Number : 75 Question Id : 41809917475 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The expulsion of a magnetic field from the interior of a superconductor . a phenomenon is known as

Options :

1. ✖ Isotopic effect

2. ✖ BCS theory

3. ✔ Meissner effect

4. ✖ London theory

Chemistry

Section Id :	418099351
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 : 41809917476 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

How many electrons in an atom may have the quantum numbers, n=4,

m= -½ ?

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 16

4. ✖ 32

Question Number : 77 Question Id : 41809917477 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Balmer series of Hydrogen atom corresponds to which spectral region?

Options :

1. ✖ X-ray region

2. ✖ Ultraviolet region

3. ✖ Infrared region

4. ✔ Visible region

Question Number : 78 Question Id : 41809917478 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 the Cu atom violates which principle?

Options :

1. ✖ Hund's rule

2. ✖ Pauli Exclusion Principle

3. ✔ Aufbau Principle

4. ✖ Heisenberg's Uncertainty Principle

Question Number : 79 Question Id : 41809917479 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

As compared to covalent compounds, ionic compounds generally have:

Options :

1. ✖ low melting points and low boiling points

2. ✔ high melting points and high boiling points

3. ✖ low melting points and high boiling points

4. ✖   high melting points and low boiling points

Question Number : 80 Question Id : 41809917480 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The octet rule is not valid for the molecule:

Options :

1. ✖ CO_2

2. ✖ H_2O

3. ✖ O_2

4. ✔ CO

Question Number : 81 Question Id : 41809917481 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two solutions of a substance (non-electrolyte) are mixed in the following

manner: 480 mL of 1.5 M first solution, 520 mL of 1.2 M second solution.

What is the molarity of the final mixture?
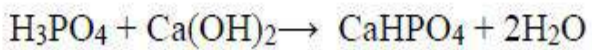
Options :

1. ✖ 1.20 M

2. ✖ 1.50 M

3. ✖ 2.70 M

4. ✔ 1.344 M

Question Number : 82 Question Id : 41809917482 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equivalent mass of H_3PO_4 in the following equation (let M be the mass of H_3PO_4):

$$H_3PO_4 + Ca(OH)_2 \longrightarrow CaHPO_4 + 2H_2O$$

Options :

1. ✖ M

2. ✔ M/2

3. ✖ M/3

4. ✖ 2M

Question Number : 83 Question Id : 41809917483 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
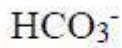
The normality of 4% (mass/volume) NaOH solution is

Options :

1. ✖ 0.1 N

2. ✔ 1.0 N

3. ✖ 0.5 N

4. ✖ 0.01 N

Question Number : 84 Question Id : 41809917484 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 cannot function as both Bronsted acid and base?

Options :

1. ✔ HCl

2. ✖ NH_3

3. ✖ HSO_4^-

HCO_3^-

4. ✖

Question Number : 85 Question Id : 41809917485 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 will make a basic buffer?

Options :

1. ✔ 100 mL of 0.1 M HCl + 200 mL of 0.1 M NH_4OH

2. ✖ 100 mL of 0.1 M HCl + 100 mL of 0.1 M NH_4OH

3. ✖ 50 mL of 0.1 M NaOH + 25 mL of 0.1 M CH_3COOH

4. ✖ 100 mL of 0.1 M CH_3COOH + 100 mL of 0.1 M NaOH

Question Number : 86 Question Id : 41809917486 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hydrogen gas is not liberated when the following metal is added to dil. HCl.

Options :

1. ✔ Mg

2.

Zn

✖

3. ✖ Ag

4. ✖ Cu

Question Number : 87 Question Id : 41809917487 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The reduction potential of hydrogen half-cell will be negative if:

Options :

1. ✖ $p(H_2) = 1$ atm and $[H^+] = 1$ M

2. ✖ $p(H_2) = 2$ atm and $[H^+] = 2$ M

3. ✖ $p(H_2) = 1$ atm and $[H^+] = 2$ M

4. ✔ $p(H_2) = 2$ atm and $[H^+] = 1$ M

Question Number : 88 Question Id : 41809917488 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

3 faraday of electricity are passed through molten Al_2O_3, aqueous solution of $CuSO_4$ and molten NaCl taken in three different electrolytic cells. The amount of Al, Cu and Na deposited at the cathodes will be in the ratio of:

Options :

1. ✖   1 mole : 2 mole : 3mole

2. ✖   3 mole : 2 mole : 1 mole

3. ✖   1.5 mole : 2 mole : 3 mole

4. ✔   1 mole : 1.5 mole : 3 mole

Question Number : 89 Question Id : 41809917489 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the EMF of cell represented as $Zn(s) / Zn^{2+}(Aq) \| H^+(1M)$

$/H_2(1atm)$ if $E^0_{Zn2+/Zn}$ = -0.7618 V

Options :

1. ✔   + 0.7618 V

2. ✖   0.0 V

3. ✖   -0.7618 V

4. ✖ +0.540 V

Question Number : 90 Question Id : 41809917490 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In Ion-exchanger, the exhausted cation exchange resin can be regenerated

by washing with:

Options :

1. ✖ dil. NaOH

2. ✔ dil. HCl

3. ✖ Distilled water

4. ✖ Brakish water

Question Number : 91 Question Id : 41809917491 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 powerful disinfectant?

Options :

1. ✖ O_2

2.

✓ Cl_2

3. ✗ N_2

4. ✗ $CaOCl_2$

Question Number : 92 Question Id : 41809917492 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A sample of water contain temporary hardness of 56.8 mg/L. Express the temporary hardness in terms of e (Clark degrees)

Options :

1. ✗ 56.8 e

2. ✓ 3.976 e

3. ✗ 5.68 e

4. ✗ 811.43 e

Question Number : 93 Question Id : 41809917493 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Tinning is done by:

Options :

1. ✖ Electroplating

2. ✖ Spraying

3. ✔ Hot dipping

4. ✖ Cementation

Question Number : 94 Question Id : 41809917494 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the oxygen supply is limited during the rusting of iron, corrosion product is:

Options :

1. ✖ Fe_2O_3

2. ✖ $Fe_2O_3. xH_2O$

3. ✖ $Fe_2O_3. 2H_2O$

4. ✔ Fe_3O_4

Question Number : 95 Question Id : 41809917495 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Buna-N rubber is made from:

Options :

1. ✖ Butadiene and formaldehyde

2. ✖ Isoprene and Phenol

3. ✔ Butadiene and acrylonitrile

4. ✖ Phenol and styrene

Question Number : 96 Question Id : 41809917496 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A good example of condensation polymer is:

Options :

1. ✖ Teflon

2. ✖ Polythene

3. ✔ Bakelite

4. ✘ Polypropylene

Question Number : 97 Question Id : 41809917497 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Vulcanisation of rubber is mainly by the addition of:

Options :

1. ✘ Oxygen gas

2. ✘ Magnesium oxide

3. ✔ Sulphur

4. ✘ Zinc oxide

Question Number : 98 Question Id : 41809917498 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

During the refining of petroleum, which of the following is used to remove

sulphur impurity:

Options :

Copper Oxide

1. ✔

Copper Sulphide

2. ✘

Magnesium chloride

3. ✘

Magnesium sulphate

4. ✘

Question Number : 99 Question Id : 41809917499 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 oxide of nitrogen is not a common pollutant?

Options :

N_2O_5

1. ✔

N_2O

2. ✘

NO

3. ✘

NO_2

4. ✘

Question Number : 100 Question Id : 41809917500 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

DDT is:

Options :

1. ✖ Nitrogen containing insecticide

2. ✖ Biodegradable pollutant

3. ✔ Non-Biodegradable pollutant

4. ✖ An antibiotic

Agricultural Engineering

Section Id :	418099352
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 : 41809917501 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The unit of a lathe which houses the lathe spindle and control levers for speed selection is called a

Options :

1. ✓ Head stock

2. ✗ Tail unit

3. ✗ Carriage

4. ✗ Feed box

Question Number : 102 Question Id : 41809917502 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Grinding operation is used for

Options :

1. ✗ Removing material

2. ✗ Dressing

3. ✓ Finishing

4. ✗ Forming

Question Number : 103 Question Id : 41809917503 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The tooth spacing in a saw is called

Options :

1. ✖ Saw width

2. ✖ Pitch

3. ✖ Tooth back

4. ✔ Tooth gullet

Question Number : 104 Question Id : 41809917504 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When sand is in its natural moist state it is known as

Options :

1. ✔ Green Sand

2. ✖ Facing sand

3. ✖ Loamy Sand

4. ✖ Dry sand

Question Number : 105 Question Id : 41809917505 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Bevel square is swivelled to any angle from 0 degrees to

Options :

1. ✖ 15

2. ✖ 45

3. ✖ 90

4. ✔ 180

Question Number : 106 Question Id : 41809917506 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Centre head in combination square is used to measure and locate

Options :

1. ✖ Right angle

2. ✖ Angles up to 180°

3. ✔ Centre of rods

4. ✘ Vertical heights

Question Number : 107 Question Id : 41809917507 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The forces which meet at one point are known as _____ force and may not collinear

Options :

1. ✘ Coplanar

2. ✘ Collinear

3. ✔ Concurrent

4. ✘ Non- Concurrent

Question Number : 108 Question Id : 41809917508 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of stress to strain for any given material is called

Options :

1. ✘ Yield point

2. ✖ Elastic region

3. ✔ Modulus of elasticity

4. ✖ Rigidity modulus

Question Number : 109 Question Id : 41809917509 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sweep pattern is used for

Options :

1. ✖ Green sand moulding

2. ✖ Dry sand moulding

3. ✔ Symmetrical moulding

4. ✖ Bench Moulding

Question Number : 110 Question Id : 41809917510 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The common firing order of a 4-stroke, 6 cylinder diesel engine is

Options :

1. ✖ 2-5-3-6-1-4

2. ✖ 1-4-2-3-6-5

3. ✔ 1-5-3-6-2-4

4. ✖ 1-4-2-6-5-3

Question Number : 111 Question Id : 41809917511 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Blue smoke is produced in engine due to

Options :

1. ✖ Excess fuel consumption

2. ✖ Overheating of engine

3. ✔ Combustion of lubricating oil with fuel

4. ✖ Crank Shaft wear

Question Number : 112 Question Id : 41809917512 Display Question Number : Yes Is Question

The mechanical efficiency of an engine is expressed as

Options :

1. ✖   IHP/BHP ×100

2. ✔   BHP/IHP ×100

3. ✖   IHP − BHP/IHP ×100

4. ✖   FHP/IHP ×100

Question Number : 113 Question Id : 41809917513 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Density of diesel fuel is approximately (kg/m^3)

Options :

1. ✖   525

2. ✔   875

3. ✖   1000

4. ✖   1200

Question Number : 114 Question Id : 41809917514 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of removal of burnt or exhaust gas from the engine cylinder is known as

Options :

1. ✖   Drainage

2. ✔   Scavenging

3. ✖   Gas lasting

4. ✖   Turbocharging

Question Number : 115 Question Id : 41809917515 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Passive earth pressure is depend upon

Options :

1. ✖   The moment of wall away from soil

2. ✔   The moment of wall towards the soil

3. ✖   Downward movement of wall on the soil

4. ✖ Upward movement of wall on the soil

Question Number : 116 Question Id : 41809917516 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The formula for estimation of evapo transpiration using only temperature and day light is knows

Options :

1. ✖ Thornthwaite formula

2. ✖ Penman formula

3. ✖ Christain formula

4. ✔ Blaney Criddle formula

Question Number : 117 Question Id : 41809917517 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A unit hydrograph has

Options :

1. ✖ One unit of peak discharge

2. ✖ One unit of time base of direct runoff

3. ✖ One unit of rainfall duration

4. ✔ One unit of direct runoff

Question Number : 118 Question Id : 41809917518 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Darcy's Law is valid under the condition of

Options :

1. ✔ Laminar flow with Reynolds number < 10

2. ✖ Reynolds number > 10

3. ✖ Newtonian flow

4. ✖ Steady flow

Question Number : 119 Question Id : 41809917519 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A rainfall is called as light rainfall when its intensity is

Options :

1. ✔ Less than 2.5 mm/hr

2. ✖ Around 2.5 m/hr

3. ✖ Less than 2.5 cm/hr

4. ✖ Greater than 2.5 m/hr

Question Number : 120 Question Id : 41809917520 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Piezometer is used to measure

Options :

1. ✔ Static pressure of a flowing fluid

2. ✖ Dynamic pressure of a flowing fluid

3. ✖ Total pressure of a flowing fluid

4. ✖ Surface tension of a flowing fluid

Question Number : 121 Question Id : 41809917521 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If for a fluid in motion, the pressure at a point is same in all directions, then fluid is

Options :

1. ✖ Real fluid

2. ✖ Newtonian fluid

3. ✖ Non Newtonian fluid

4. ✔ Ideal fluid

Question Number : 122 Question Id : 41809917522 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a fluid flow the line of constant piezometric head pass through two points which have the same

Options :

1. ✖ Elevation

2. ✖ Pressure

3. ✖ Velocity

4. ✔ Velocity potential

Question Number : 123 Question Id : 41809917523 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Lysimeter is used to measure

Options :

1. ✖ Inflitration

2. ✖ Evaporation

3. ✔ Evapotranspiration

4. ✖ Vapour pressure

Question Number : 124 Question Id : 41809917524 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The length of revenue chain is

Options :

1. ✖ 60ft

2. ✔ 33ft

3. ✖ 90 ft

4. ✖ 100 ft

Question Number : 125 Question Id : 41809917525 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of establishment intermediate points on a straight line between the terminal points is called

Options :

1. ✖ Chaining

2. ✔ Ranging

3. ✖ Offsetting

4. ✖ Pegging

Question Number : 126 Question Id : 41809917526 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rod staff level reading taken on a point of know elevation called

Options :

1. ✖ Fore sight

2. ✔ Back sight

3. ✖ Plane sight

4. ✖ Bench Mark

Question Number : 127 Question Id : 41809917527 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Method of surveying in which the field work and plotting are done simultaneously is called

Options :

1. ✔ Plane tabling

2. ✖ Mapping

3. ✖ Compass surveying

4. ✖ Drawing

Question Number : 128 Question Id : 41809917528 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The longest of the chain lines used in making survey is generally called as

Options :

1. ✔ Base line

2.

✖ Man line

3. ✖ Check line

4. ✖ Tie line

Question Number : 129 Question Id : 41809917529 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Geologic erosion is also known as

Options :

1. ✖ Accelerated erosion

2. ✔ Natural erosion

3. ✖ Off time erosion

4. ✖ Vegetative erosion

Question Number : 130 Question Id : 41809917530 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Detachment and transportation of soil particle is greater in

Options :

1. ✖ Splash erosion

2. ✔ Rill erosion

3. ✖ Sheet erosion

4. ✖ Both Splash and Rill erosion

Question Number : 131 Question Id : 41809917531 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Contour bunding is used _____.

Options :

1. ✖ To stop winds in sandy deserts

2. ✖ To irrigate desert areas

3. ✔ To prevent erosion in hilly areas

4. ✖ To increase rain water run off

Question Number : 132 Question Id : 41809917532 Display Question Number : Yes Is Question

At constant discharge if the diameter of pipe is reduced to half other factor remaining unchanged, the frictional head loss will increased by

Options :

1. ✔ 4 times

2. ✘ 8 times

3. ✘ 16 times

4. ✘ 32 times

Question Number : 133 Question Id : 41809917533 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Bench terraces are most effective to control the

Options :

1. ✔ Runoff

2. ✘ Infiltration

3. ✘ Slope

4. ✘ Vegetation

Question Number : 134 Question Id : 41809917534 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wind erosion is common in

Options :

1. ✖   Humid region

2. ✖   Arid zones

3. ✔ Arid and semi arid zones

4. ✖   Arid and humid zones

Question Number : 135 Question Id : 41809917535 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Indirect method of finding velocity of water flow

Options :

1. ✔   Weirs & Notches

2. ✖   Dilution Method

3. ✖   Ultrasonic method

Area-velocity method

4. ✖

Question Number : 136 Question Id : 41809917536 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 water in a stream or river can be measured by

Options :

1. ✖   Water meter

2. ✖   Persian wheel

3. ✔   Current meter

4. ✖   Meter scale

Question Number : 137 Question Id : 41809917537 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The vertical distance between the water surface at the source and at the outlet in a pumping system is

Options :

1. ✖   Static suction head

2. ✔   Total static head

3. ✖ Static discharge head

4. ✖ Frictional head

Question Number : 138 Question Id : 41809917538 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

India average rainfall is about

Options :

1. ✖ 100 mm

2. ✔ 119.4 mm

3. ✖ 190 mm

4. ✖ 159.4 mm

Question Number : 139 Question Id : 41809917539 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For irrigation slopy lands _____ furrows are generally used

Options :

1. ✖ Ridges

2. ✗ Cross

3. ✓ Contour

4. ✗ Zig-Zag

Question Number : 140 Question Id : 41809917540 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sprinkler heads are especially adopted to irrigation of lawns

Options :

1. ✓ Pop- up

2. ✗ Rotational

3. ✗ Pop-down

4. ✗ Rain gun

Question Number : 141 Question Id : 41809917541 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The overlap of sprinklers increases with

Options :

1.

✖ Decreases with wind velocity

2. ✔ Increases with wind velocity

3. ✖ Decreases with rotational speed of head

4. ✖ Increases with rotational speed of head

Question Number : 142 Question Id : 41809917542 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In comparison to surface irrigation methods and sprinkler method, drip irrigation can achieve _____ more application efficiency

Options :

1. ✔ 90%

2. ✖ 70%

3. ✖ 80 %

4. ✖ 75%

Question Number : 143 Question Id : 41809917543 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The discharge of emitter usually ranges from _____ liters per hour in drip irrigation system.

Options :

1. ✗ 0.5-2

2. ✓ 2-10

3. ✗ 20-30

4. ✗ 40-50

Question Number : 144 Question Id : 41809917544 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Drainage through tile drainage system is

Options :

1. ✓ Horizontal

2. ✗ Vertical

3. ✗ Inclined

4. ✗ Pressurised

Question Number : 145 Question Id : 41809917545 Display Question Number : Yes Is Question

Drip irrigation system operates on _____ pressure as compared to sprinkler system

Options :

1. ✖ High

2. ✖ Moderate

3. ✔ Lower

4. ✖ Very high

Question Number : 146 Question Id : 41809917546 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The area where irrigation is must for irrigation is called

Options :

1. ✖ Humid

2. ✔ Arid region

3. ✖ Semiarid

4. ✖ Semi-humid

Question Number : 147 Question Id : 41809917547 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The vulnerability of soil to erosion is called

Options :

1. ✖   Infiltration

2. ✔   Erodibility

3. ✖   Erosivity

4. ✖   Evaporation

Question Number : 148 Question Id : 41809917548 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Perpendicular distance between point of share and lower portion of beam

Options :

1. ✔   Throat clearance

2. ✖   Side clearance

3. ✖   Vertical suction

4. ✖   Horizontal suction

Question Number : 149 Question Id : 41809917549 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The angle at which the plane of cutting edge of disc is inclined to the direction of travel is

Options :

1. ✖   Tilt angle

2. ✔   Disc angle

3. ✖   Gang angle

4. ✖   Disc inclination

Question Number : 150 Question Id : 41809917550 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The top portion of the turned furrow slice is called

Options :

1. ✖   Furrow

2. ✖   Furrow wall

3. ✔ Crown

4. ✘ Furrow slice

Question Number : 151 Question Id : 41809917551 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The main purpose of puddling is to

Options :

1. ✔ Reduce percolation of water

2. ✘ Kill weeds

3. ✘ Pulverize soil

4. ✘ Level the field

Question Number : 152 Question Id : 41809917552 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a paddy transplanter optimum numbers of seedling /hill transplanted are

Options :

1. ✘ 1 - 2

2.

✓ $2 - 3$

3. ✗ $3 - 4$

4. ✗ $4 - 5$

Question Number : 153 Question Id : 41809917553 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Field capacity of a seed drill with 5 rows at 20 cm spacing moving at 2 kmph with field efficiency of 80%

Options :

1. ✓ 0.16 ha/h

2. ✗ 0.25 ha/h

3. ✗ 8 ha/h

4. ✗ 2 ha/h

Question Number : 154 Question Id : 41809917554 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hallow cone nozzle have a spray angle of

Options :

1. ✖ $30 - 55\,^{o}$

2. ✖ $80 - 100\,^{o}$

3. ✖ $70 - 155\,^{o}$

4. ✔ $60 - 95\,^{o}$

Question Number : 155 Question Id : 41809917555 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of reel peripheral speed to forward speed of combine is called

Options :

1. ✖ Velocity ratio

2. ✔ Reel speed index

3. ✖ Kinematic index

4. ✖ Cutting index

Question Number : 156 Question Id : 41809917556 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Olpad thresher is used for

Options :

1. ✖ Gram

2. ✖ Paddy

3. ✔ Wheat

4. ✖ Maize

Question Number : 157 Question Id : 41809917557 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Reel speed index of combine machine is

Options :

1. ✖ 1.00-1.10

2. ✖ 1.10-1.25

3. ✔ 1.25 -1.50

4. ✖ 1.50-1.75

Question Number : 158 Question Id : 41809917558 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

As per BIS the combine losses should be maximum of _____ for wheat and paddy

Options :

1. ✖ 1 %

2. ✔ 2.5%

3. ✖ 5 %

4. ✖ 10%

Question Number : 159 Question Id : 41809917559 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a given spray sample

Options :

1. ✖ VMD = NMD

2. ✖ VMD < NMD

3. ✔ VMD>NMD

4. ✖ VMD ≤ NMD

Question Number : 160 Question Id : 41809917560 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Machine used to cut herbage crops

Options :

1. ✖ Reaper

2. ✖ Binder

3. ✔ Mower

4. ✖ Reaper and Binder

Question Number : 161 Question Id : 41809917561 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A ferrule is provided for

Options :

1. ✔ Sickle

2. ✖ Khurpi

3. ✖ Spade

Vertical conveyor reaper

4. ✖

Question Number : 162 Question Id : 41809917562 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

This type of greenhouse is constructed on hilly terrain

Options :

1. ✖   Lean to Type

2. ✔   Uneven span type

3. ✖   Even span type

4. ✖   Ridge & furrow type

Question Number : 163 Question Id : 41809917563 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Most crops respond favorably to CO_2 levels in the range of _____ ppm

Options :

1. ✔   Below 200ppm

2. ✖   Below 200 -250 ppm

3. ✖ Below 300ppm

4. ✖ Below 350ppm

Question Number : 164 Question Id : 41809917564 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Greenhouse structures should be designed to resist a --- wind velocity

Options :

1. ✖ 130 cm/Sec

2. ✖ 130 km/Sec

3. ✖ 130 m/h

4. ✔ 130 km/h

Question Number : 165 Question Id : 41809917565 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Rollup side passive ventilation on plastic greenhouses is only effective in ____ greenhouses.

Options :

1. ✖ Ridge and Furrow

2. ✔ Free standing greenhouses

3. ✘ Gutter connected

4. ✘ Lean to type

Question Number : 166 Question Id : 41809917566 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Now-a-days, the pads of Fan-and Pad cooling system is commonly made of

Options :

1. ✔ cross-fluted-cellulose material

2. ✘ Wood material

3. ✘ Grass material

4. ✘ LDPE

Question Number : 167 Question Id : 41809917567 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Intensity of radiations can be reduced by providing _____ (partial or full) over the growing area.

Options :

1. ✖ Polyethylene

2. ✔ Shade net

3. ✖ Sheet

4. ✖ Glass

Question Number : 168 Question Id : 41809917568 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The SI unit of current is

Options :

1. ✖ Volt

2. ✔ Ampere

3. ✖ Ohm

4. ✖ N

Question Number : 169 Question Id : 41809917569 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The SI unit of Resistance

Options :

1. ✖ Volt

2. ✖ Ampere

3. ✔ Ohm

4. ✖ Ohm-m

Question Number : 170 Question Id : 41809917570 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The average force, that a draft animal can exert is approximately

Options :

1. ✔ 1/10 of its body weight

2. ✖ 50 kg

3. ✖ 75 kg

4. ✖ 100 kg

Question Number : 171 Question Id : 41809917571 Display Question Number : Yes Is Question

The power loss in PTO drive is usually

Options :

1. ✖ Less than 2%

2. ✔ Less than 5%

3. ✖ Less than 8%

4. ✖ Less than 10%

Question Number : 172 Question Id : 41809917572 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pyrheliometer is used to measure

Options :

1. ✔ Beam radiation

2. ✖ Total radiation

3. ✖ Global radiation

4. ✖ Diffused radiation

Question Number : 173 Question Id : 41809917573 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Minimum wind speed required for wind mill for proper working is

Options :

1. ✖   5 kmph

2. ✔   10 kmph

3. ✖   15 kmph

4. ✖   20 kmph

Question Number : 174 Question Id : 41809917574 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The fraction of free flow wind power that can be extracted by a rotor is called

Options :

1. ✖   Power of rotor

2. ✖   Efficiency factor

3. ✖   Lift factor

4. ✔ Power coefficient

Question Number : 175 Question Id : 41809917575 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Solar cells are made of

Options :

1. ✔ Silicon

2. ✘ Silver

3. ✘ Bromide

4. ✘ Carbon

Question Number : 176 Question Id : 41809917576 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Standard value of solar constant is

Options :

1. ✘ 1253 w/m^2

2. ✘ 1453 w/m^2

3. ✔ 1367 w/m^2

4. ✘ 1353 w/m^2

Question Number : 177 Question Id : 41809917577 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Maximum efficiency is obtained in

Options :

1. ✘ Flat plate collector

2. ✘ Evacuated tube collector

3. ✘ Line focusing collector

4. ✔ Paraboloid dish collector

Question Number : 178 Question Id : 41809917578 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a tractor for best results stroke bore ratio should be equal to

Options :

1. ✘ 1.00

2. ✔ 1.25

3. ✖ 1.50

4. ✖ 1.75

Question Number : 179 Question Id : 41809917579 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Inflation pressure in rear wheel of the tractor varies between

Options :

1. ✔ 0.8 to 1.5 kg/cm^2

2. ✖ 2.0 to 2.5 kg/cm^2

3. ✖ 2.5 to3.5 kg/cm^2

4. ✖ 1.5 to 2.0 kg/cm^2

Question Number : 180 Question Id : 41809917580 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The differential lock of tractor is a

Options :

1. ✔ Torque equalizing device

2. ✘ Power equalizing

3. ✘ Energy equalizing device

4. ✘ Traction equaling device

Question Number : 181 Question Id : 41809917581 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most common type of cooling system found in general purpose tractors is

Options :

1. ✘ Air cooling

2. ✘ Thermo-siphon system

3. ✘ Open jacket system

4. ✔ Force feed water circulation system

Question Number : 182 Question Id : 41809917582 Display Question Number : Yes Is Question

Which of the following gasifier is most suitable for engine use

Options :

1. ✖ Updraft

2. ✔ Downdraft

3. ✖ Cross draft

4. ✖ Fluidized bed

Question Number : 183 Question Id : 41809917583 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which is of the following is not an floating drum type biogas plant

Options :

1. ✖ Ganesh model

2. ✔ Deen bandhu model

3. ✖ KVIC model

4. ✖ Pragati model

Question Number : 184 Question Id : 41809917584 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total solid content of the influent for optimum biogas production

Options :

1. ✗ 4-8%

2. ✓ 8-12%

3. ✗ 12-16%

4. ✗ 16-20%

Question Number : 185 Question Id : 41809917585 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Gasification of biomass is _____ conversion process

Options :

1. ✓ Thermochemical

2. ✗ Biochemical

3. ✗ Chemical

Micro chemical

4. ✖

Question Number : 186 Question Id : 41809917586 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The type of gasifier which produces nearly tar free producer gas is

Options :

1. ✖ Counter current gasifier

2. ✔ Co-current gasifier

3. ✖ Cross draught gasifier

4. ✖ Fluidized bed gasifier

Question Number : 187 Question Id : 41809917587 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A spiral separator works on the basis of

Options :

1. ✔ Roundness

2. ✖ Length

3. ✖ Thickness

4. ✖ Width

Question Number : 188 Question Id : 41809917588 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 holes per square inch in a 20 mesh screen will be

Options :

1. ✖ 20

2. ✖ 200

3. ✔ 400

4. ✖ 800

Question Number : 189 Question Id : 41809917589 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The property which deals with deformation and flow of the material under the action of applied force is

Options :

1. ✔ Rheological

2.

✖ Frictional

3. ✖ Gravitational

4. ✖ Mechanical

Question Number : 190 Question Id : 41809917590 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Separation of liquids from solids by the application of pressure is known a

Options :

1. ✖ Extraction

2. ✔ Expression

3. ✖ Filtration

4. ✖ Leaching

Question Number : 191 Question Id : 41809917591 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The percentage of oil present in rice bran is _____

Options :

1. ✓ 18-20%

2. ✗ 10-12%

3. ✗ 12-14%

4. ✗ 14-16%

Question Number : 192 Question Id : 41809917592 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Drying is a _____ process

Options :

1. ✗ Heat transfer

2. ✗ Mass transfer

3. ✓ Heat and mass transfer

4. ✗ Momentum transfer

Question Number : 193 Question Id : 41809917593 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Amount of moisture present in a unit volume of air is known as

Options :

1. ✖ Relative humidity

2. ✖ Specific humidity

3. ✔ Absolute humidity

4. ✖ Humidity

Question Number : 194 Question Id : 41809917594 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Psychrometric chart is a graphical representation of which properties of air

Options :

1. ✖ Chemical

2. ✖ Aerodynamic

3. ✖ Hygroscopic

4. ✔ Thermodynamic

Question Number : 195 Question Id : 41809917595 Display Question Number : Yes Is Question

The efficiency of cyclone separator is increased by

Options :

1. ✔ Increasing the air inlet velocity

2. ✘ Decreasing the size of the particles

3. ✘ Reducing the size of the separator

4. ✘ Reducing the air outlet diameter

Question Number : 196 Question Id : 41809917596 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The energy required in grinding large solid particles is inversely proportional to

Options :

1. ✔ Diameter

2. ✘ Density

3. ✘ Strength

4. ✘ Shape

Question Number : 197 Question Id : 41809917597 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of inactivation of enzymes is called

Options :

1. ✖ Leaching

2. ✖ Pasteurization

3. ✔ Blanching

4. ✖ Sterilization

Question Number : 198 Question Id : 41809917598 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Dry ice is known as _____

Options :

1. ✖ CO_2

2. ✔ Solid CO_2

3. ✖ SO_2

4. ✖   Solid SO_2

Question Number : 199 Question Id : 41809917599 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of obtaining kernels from the stripped groundnut pods is known as

Options :

1. ✖   Milling

2. ✔   Decordicating

3. ✖   Hulling

4. ✖   Polishing

Question Number : 200 Question Id : 41809917600 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process of removal of ground nut pods from the plants is called

Options :

1. ✖   Dehulling

2. ✖   Decortication

3. ✔ Stripping

4. ✖ Grading