

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 22nd July 2022 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 :	72254473
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

Question Number : 1 Question Id : 7225443601 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\begin{vmatrix} 2 & x & 3 \\ 4 & 1 & 6 \\ -1 & 2 & 7 \end{vmatrix} = 0$ then the value of x is

Options :

1. ✘ 6
2. ✘ $5/3$
3. ✔ $1/2$
4. ✘ -6

Question Number : 2 Question Id : 7225443602 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $2A + 3B - 4I = \begin{pmatrix} 3 & 15 \\ 20 & 28 \end{pmatrix}$ and $A + B + I = \begin{pmatrix} 4 & 6 \\ 8 & 14 \end{pmatrix}$ then $A =$

Options :

1. ✘ $\begin{pmatrix} 3 & 5 \\ 0 & 8 \end{pmatrix}$

2. ✘ $\begin{pmatrix} 3 & 15 \\ 2 & 8 \end{pmatrix}$

3. ✘ $\begin{pmatrix} 13 & 1 \\ 20 & 2 \end{pmatrix}$

4. ✔ $\begin{pmatrix} 2 & 3 \\ 4 & 7 \end{pmatrix}$

Question Number : 3 Question Id : 7225443603 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The system of the simultaneous linear equations

$$x - y - 2z = 3; \quad 2x + y + z = 5; \quad 4x - y - 2z = 1 \text{ then } z =$$

Options :

1. ✔ -10

2. ✖ 3

3. ✖ 0

4. ✖ -1

Question Number : 4 Question Id : 7225443604 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $A = \begin{pmatrix} 1 & 2 \\ 2 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} -4 & 6 \\ 2 & -3 \end{pmatrix}$ then $AB =$

Options :

1. ✖ 1

2. ✖ -8

3. ✖ -4

4. ✔ 0

Question Number : 5 Question Id : 7225443605 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If A is a square matrix such that $A^T = A$ then A is called _____

Options :

1. symmetric matrix
2. skew symmetric matrix
3. singular matrix
4. scalar matrix

Question Number : 6 Question Id : 7225443606 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\frac{10-x}{x^2+x-12} = \frac{A}{x+4} + \frac{B}{x-3}$ then $A + B =$

Options :

1. -1
2. 1
3. -2
4. 5

Question Number : 7 Question Id : 7225443607 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\frac{4x^2+5x+8}{(x^2+5)(x+2)} = \frac{Ax+B}{x^2+5} + \frac{C}{x+2}$ then $B + C =$

Options :

1. ✘ $12/7$

2. ✘ $-15/9$

3. ✔ $15/9$

4. ✘ $17/9$

Question Number : 8 Question Id : 7225443608 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $\sin\theta = \frac{3}{5}$, θ is acute, then $2\tan\theta + 3\sec\theta + 4\sec\theta \operatorname{cosec}\theta =$

Options :

1. ✘ -1

2. ✔ $\frac{163}{12}$

3. ✘ $\frac{-163}{12}$

4. ✘ $\frac{13}{12}$

Question Number : 9 Question Id : 7225443609 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $x = a \sec \theta$, $y = b \tan \theta$ then $\frac{x^2}{a^2} - \frac{y^2}{b^2} =$

Options :

1. ✘ $\frac{1}{2}$

2. ✘ $\frac{1}{2}$

3. ✘ $\frac{1}{4}$

4. ✔ 1

Question Number : 10 Question Id : 7225443610 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 $\tan^2 60^\circ + 2 \tan^2 45^\circ$ is

Options :

1. ✔ 5

2. ✘ 2

3. ✘ -5

4. ✘ -3

Question Number : 11 Question Id : 7225443611 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 $\tan 20^\circ \tan 40^\circ \tan 60^\circ \tan 80^\circ$ is

Options :

1. ✘ -2

2. ✘ 2

3. ✘ -3

4. ✔ 3

Question Number : 12 Question Id : 7225443612 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $(1 + \tan A)(1 + \tan B) = 2$ then $A + B =$

Options :

1. ✘ 65°

2. ✔ 45°

3. ✘ 35°

4. ✘ 25°

Question Number : 13 Question Id : 7225443613 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 $\sin 20^{\circ} \sin 40^{\circ} \sin 60^{\circ} \sin 80^{\circ}$ is

Options :

1. ✘ $\frac{-3}{16}$

2. ✘ $\frac{23}{16}$

3. ✘ $\frac{31}{16}$

4. ✔ $\frac{3}{16}$

Question Number : 14 Question Id : 7225443614 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If in a triangle ABC, $a = 13, b = 14, c = 15$ then the area of the triangle is

Options :

1. ✘ 35 sq. units
2. ✘ 56 sq. units
3. ✔ 84 sq. units
4. ✘ 94 sq. units

Question Number : 15 Question Id : 7225443615 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 $\sin^{-1} \frac{5}{13} + \tan^{-1} \frac{12}{5}$ is

Options :

1. ✘ $-\frac{\pi}{2}$
2. ✘ $\frac{\pi}{4}$
3. ✔ $\frac{\pi}{2}$
4. ✘ $-\frac{\pi}{3}$

Question Number : 16 Question Id : 7225443616 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 trigonometric equation $\sec 4\theta - \sec 2\theta = 2$ is

Options :

1. ✓ $\frac{2n\pi}{5} \pm \frac{\pi}{10}$ or $2n\pi \pm \frac{\pi}{2}$

2. ✗ $\frac{3\pi}{5}$

3. ✗ $\frac{5\pi}{4}$

4. ✗ $\frac{\pi}{4}$

Question Number : 17 Question Id : 7225443617 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 $\tan^{-1}(2\sin 150^\circ)$ is

Options :

1. ✗ π

2. ✗ 3π

3. ✘ $\frac{\pi}{2}$

4. ✔ $\frac{\pi}{4}$

Question Number : 18 Question Id : 7225443618 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The modulus of $\frac{(1+i)(i-\sqrt{3})i}{1-i}$ is

Options :

1. ✔ 2

2. ✘ 6

3. ✘ -2

4. ✘ 4

Question Number : 19 Question Id : 7225443619 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $1, \omega, \omega^2$ are the cube roots of unity, then $(1 - \omega)(1 - \omega^2)(1 - \omega^4)(1 - \omega^5) =$

Options :

1. ✘ 3

2. ✔ 9

3. ✘ 1

4. ✘ 0

Question Number : 20 Question Id : 7225443620 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 tangent from $(-3, 1)$ to the circle $3x^2 + 3y^2 - 5x - 6y - 12 = 0$ is

Options :

1. ✘ -3

2. ✔ 3

3. ✘ 4

4. ✘ 9

Question Number : 21 Question Id : 7225443621 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 an equilateral hyperbola is

Options :

1. ✘ 1

2. ✔ $\sqrt{2}$

3. ✘ 3

4. ✘ $\sqrt{3}$

Question Number : 22 Question Id : 7225443622 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 hyperbola $36x^2 - 25y^2 = 900$ is

Options :

1. ✔ $\frac{\sqrt{61}}{5}$

2. ✘ $\frac{9}{2}$

3. ✘ $\frac{3}{2}$

4. ✘ $\frac{5}{2}$

Question Number : 23 Question Id : 7225443623 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 tangent to parabola $y^2 = 16x$ at an end point of latus rectum is

Options :

1. ✖ $2x - 3y - 4 = 0$
2. ✖ $2x + 2y + 4 = 0$
3. ✔ $x - y + 4 = 0$
4. ✖ $x - y - 4 = 0$

Question Number : 24 Question Id : 7225443624 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $y = 4x + k$ is a tangent to the hyperbola $\frac{x^2}{64} - \frac{y^2}{49} = 1$ then the value of k is

Options :

1. ✖ $\pm\sqrt{775}$
2. ✖ $\pm\sqrt{995}$
3. ✖ $\pm\sqrt{275}$
4. ✔ $\pm\sqrt{975}$

Question Number : 25 Question Id : 7225443625 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the line $2x + \sqrt{6}y = 2$ touches the hyperbola $x^2 - 2y^2 = 4$ then the point of contact is

Options :

1. ✘ $(4, \sqrt{6})$
2. ✔ $(4, -\sqrt{6})$
3. ✘ $(-4, 6)$
4. ✘ $(5, 7)$

Question Number : 26 Question Id : 7225443626 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 $\lim_{x \rightarrow 2} \left(\frac{x^3 - 3x - 2}{2x^2 - 5x + 2} \right)$ is

Options :

1. ✘ $\frac{1}{3}$
2. ✔ 3

3. ✖ $\frac{1}{5}$

4. ✖ $\frac{1}{2}$

Question Number : 27 Question Id : 7225443627 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $2x^2 - 3xy + 4y^2 = 1$ then $\frac{dy}{dx} =$

Options :

1. ✓ $\frac{4x-3y}{3x-8y}$

2. ✖ $\frac{4x-7y}{3x-8y}$

3. ✖ $\frac{4x-3y}{3x+8y}$

4. ✖ $\frac{4x-3y}{3x-18y}$

Question Number : 28 Question Id : 7225443628 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $x = a \sin^2 t$ and $y = a \cos^2 t$ then $\frac{dy}{dx} =$

Options :

1. ✘ -2

2. ✘ $\tan t$

3. ✘ $\sin t$

4. ✔ -1

Question Number : 29 Question Id : 7225443629 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The curve $xy^2 = 16$ at the point where the ordinate is -2 then the equation of tangent is

Options :

1. ✘ $x + 4y - 12 = 0$

2. ✘ $2x - 4y - 12 = 0$

3. ✔ $x - 4y - 12 = 0$

4. ✘ $x - 5y - 12 = 0$

Question Number : 30 Question Id : 7225443630 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 normal to the curve $y^2 = \frac{x^3}{2a-x}$ at the point (a, a) is

Options :

1. ✓ $x + 2y = 3a$
2. ✗ $x - 2y = 4a$
3. ✗ $2x + y = 2a$
4. ✗ $3x - 4y = 5a$

Question Number : 31 Question Id : 7225443631 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 $xy = 2$ and $y^2 = 4x$ is

Options :

1. ✗ $-\tan^{-1}(3)$
2. ✓ $\tan^{-1}(3)$
3. ✗ $\sin^{-1}(3)$
4. ✗ $\cos^{-1}(3)$

Question Number : 32 Question Id : 7225443632 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum value of xe^{-x} is

Options :

1. ✓ $\frac{1}{e}$

2. ✗ $-\frac{1}{e}$

3. ✗ $2e$

4. ✗ e

Question Number : 33 Question Id : 7225443633 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The height of the right circular cylinder of greatest volume which is inscribed in a sphere of radius a is

Options :

1. ✗ $\frac{-2a}{7}$

2. ✗ $-\frac{a}{2}$

3. ✓ $\frac{2a}{\sqrt{3}}$

4. ✗ $\frac{1}{2}$

Question Number : 34 Question Id : 7225443634 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 spherical ball is increasing at the rate of 4π cc/s, then the rate of increase of the radius, when the volume is 288π cc is

Options :

1. ✗ 36 cm/sec

2. ✗ 6 cm/sec

3. ✓ $\frac{1}{36}$ cm/sec

4. ✗ $\frac{1}{6}$ cm/sec

Question Number : 35 Question Id : 7225443635 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $z = e^{(ax+by)} f(ax - by)$ then $b \frac{\partial z}{\partial x} + a \frac{\partial z}{\partial y} =$

Options :

1. ✘ $-2abz$
2. ✘ $3abz$
3. ✔ $2abz$
4. ✘ $5abz$

Question Number : 36 Question Id : 7225443636 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 $\int \frac{e^x - e^{-x}}{e^x + e^{-x}} dx$ is

Options :

1. ✘ $\log(e^{2x} - 1) - x + c$
2. ✘ $-\log(e^{2x} + 1) - x + c$
3. ✘ $\log(e^{2x} + 7) - x + c$

4. ✓ $\log(e^{2x} + 1) - x + c$

Question Number : 37 Question Id : 7225443637 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 $\int \frac{dx}{\sqrt{4x^2 - 4x + 2}}$ is

Options :

1. ✗ $-\frac{1}{2} \sinh^{-1}(x - 1) + c$

2. ✗ $\frac{1}{2} \sinh^{-1}(2x + 1) + c$

3. ✓ $\frac{1}{2} \sinh^{-1}(2x - 1) + c$

4. ✗ $\frac{1}{2} \sinh^{-1}(3x - 1) + c$

Question Number : 38 Question Id : 7225443638 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 $\int \log x \, dx$ is

Options :

1. ✗ $\log x - x + c$

2. ✓ $x \log x - x + c$

3. ✗ $2x \log x + x + c$

4. ✗ $-x \log x + x + c$

Question Number : 39 Question Id : 7225443639 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 $\int_0^{\pi/4} \sqrt{1 + \sin 2x} dx$ is

Options :

1. ✓ 1

2. ✗ 2

3. ✗ -1

4. ✗ π

Question Number : 40 Question Id : 7225443640 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The area enclosed between the curves $y^2 = 4x$ and $x^2 = 4y$ is

Options :

1. ✓ $\frac{16}{3}$ square units

2. ✗ $\frac{5}{2}$ square units

3. ✗ $\frac{3}{2}$ square units

4. ✗ $\frac{9}{2}$ square units

Question Number : 41 Question Id : 7225443641 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The mean value of $\frac{1}{4+x^2}$ on $[-2,2]$ is

Options :

1. ✗ $\frac{\pi}{12}$

2. ✗ $-\frac{\pi}{2}$

3. ✗ $\frac{\pi}{2}$

4. ✓ $\frac{\pi}{4}$

Question Number : 42 Question Id : 7225443642 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 $\int \frac{1}{1+4x^2} dx$ on R is

Options :

1. ✗ $-\frac{1}{2}\tan^{-1}(2x) + c$

2. ✗ $\frac{1}{2}\tan^{-1}(5x) + c$

3. ✗ $-\frac{1}{2}\tan^{-1}(x) + c$

4. ✓ $\frac{1}{2}\tan^{-1}(2x) + c$

Question Number : 43 Question Id : 7225443643 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 $\int_0^1 \frac{x \sin^{-1} x}{\sqrt{1-x^2}} dx$ is

Options :

- 1. ✘ -1
- 2. ✘ 0
- 3. ✔ 1
- 4. ✘ 5

Question Number : 44 Question Id : 7225443644 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The order and degree of the differential equation $\left(\frac{dy}{dx}\right)^2 + 3\left(\frac{dy}{dx}\right) + 2 = 0$ is

Options :

- 1. ✘ Order=2, degree=2
- 2. ✘ Order=2, degree=1
- 3. ✔ order = 1, degree = 2
- 4. ✘ Order=3, degree=1

Question Number : 45 Question Id : 7225443645 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 $\frac{dy}{dx} + y \cot x = 4x \operatorname{cosec} x$ is

Options :

1. ✘ $y \cos x = 2x^2 + c$
2. ✔ $y \sin x = 2x^2 + c$
3. ✘ $y \sin x = -2x^2 + c$
4. ✘ $y \sin x = 3x^2 + c$

Question Number : 46 Question Id : 7225443646 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 linear differential equation $\frac{dy}{dx} - \frac{y}{x+1} = e^{3x}(x+1)$ is

Options :

1. ✘ $y / \sin x = -\frac{e^{4x}}{4} + c$
2. ✔ $\frac{y}{x+1} = \frac{e^{3x}}{3} + c$
3. ✘ $y e^{3x} x = -\frac{\cos 2x}{4} + c e^{3x}$

4. ✘ $y \sin x = \frac{e^{3x}}{4} + c$

Question Number : 47 Question Id : 7225443647 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 the differential equation $\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = e^x$ is

Options :

1. ✘ $-\frac{e^x}{6}$

2. ✘ $\frac{e^x}{16}$

3. ✘ $\frac{e^x}{9}$

4. ✔ $\frac{e^x}{6}$

Question Number : 48 Question Id : 7225443648 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 for the differential equation $(D^2 + 4D + 3)y = \sin 3x$ is

Options :

1. ✘ $\sin x + 3\cos 2x$

2. ✘ $\cos 3x - 2\sin 4x$

3. ✘ $\frac{2}{30}(2\cos 2x + \sin x)$

4. ✔ $\frac{-1}{30}(2\cos 3x + \sin 3x)$

Question Number : 49 Question Id : 7225443649 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 $\frac{dy}{dx} + \frac{y}{x} = y^2x$ is

Options :

1. ✔ $\frac{1}{xy} = -x + c$

2. ✘ $\frac{-1}{xy} = -x + c$

3. ✘ $\frac{2}{xy} = x + c$

4. ✘ $\frac{1}{y} = -x + c$

Question Number : 50 Question Id : 7225443650 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 $(2x + y + 1)dx + (x + 2y + 1)dy = 0$ is

Options :

1. ✘ $x^2 + xy + 3y^2 + 2x + y = c$

2. ✔ $x^2 + xy + y^2 + x + y = c$

3. ✘ $2x^2 + xy + 2y^2 + x + y = c$

4. ✘ $x^2 - xy + 2y^2 + x + y = c$

Physics

Section Id :	72254474
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	25
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Enable Mark as Answered Mark for Review and Clear Response :	Yes

Maximum Instruction Time :

0

Question Number : 51 Question Id : 7225443651 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The dimensions of permeability is

Options :

1. $MLT^{-2}A^{-2}$
2. $MLT^{-1}A^{-2}$
3. $MLT^{-2}A^{-1}$
4. $MLT^{-1}A^{-1}$

Question Number : 52 Question Id : 7225443652 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If velocity (V), force (F) and energy (E) are taken as fundamental units, then dimensional formula for mass will be

Options :

1. V^0FE^2
2. $VF^{-2}E^0$
3. $V^{-2}F^0E$

4. ✓ $V^{-2}F^0E$

Question Number : 53 Question Id : 7225443653 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Vector A extends from the origin to a point having polar coordinates $(7, 70^\circ)$ and vector B extends from the origin to a point having polar coordinates $(4, 130^\circ)$. Find $A \cdot B$

Options :

1. ✗ 28

2. ✓ 14

3. ✗ 0

4. ✗ 7

Question Number : 54 Question Id : 7225443654 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If two vectors $2\hat{i} + 3\hat{j} - \hat{k}$ and $-4\hat{i} - 6\hat{j} - \lambda\hat{k}$ are parallel to each other then value of λ be

Options :

1. ✗ 2

2. ✓ 4

3. ✘ 0

4. ✘ 6

Question Number : 55 Question Id : 7225443655 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The coefficient of static friction between contact surfaces of two bodies is 1. The contact surface of one body supports the other till the inclination is less than

Options :

1. ✘ 30^0

2. ✔ 45^0

3. ✘ 60^0

4. ✘ 90^0

Question Number : 56 Question Id : 7225443656 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A smooth block is released from rest on a 45^0 inclined plane and it slides a distance 'd'. The time taken to slide is 'n' times that on a smooth inclined plane. The coefficient of friction is

Options :

1. ✓ $\mu_k = 1 - \frac{1}{n^2}$

2. ✗ $\mu_k = \sqrt{1 - \frac{1}{n^2}}$

3. ✗ $\mu_k = \frac{1}{1-n^2}$

4. ✗ $\mu_k = \sqrt{\frac{1}{1-n^2}}$

Question Number : 57 Question Id : 7225443657 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 projected at an angle other than 90° with the horizontal with some velocity. If the time of ascent of the body is 1second, then the maximum height it can reach is (Take $g=10\text{ms}^{-2}$)

Options :

1. ✓ 5 m

2. ✗ 10 m

3. ✗ 2.5 m

4. ✘ 75 m

Question Number : 58 Question Id : 7225443658 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A bullet fired from a gun falls at a distance half of its maximum range. The angle of projection of the bullet is

Options :

1. ✘ 45^0

2. ✘ 60^0

3. ✘ 30^0

4. ✔ 15^0

Question Number : 59 Question Id : 7225443659 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 thrown vertically upwards with a velocity. Select the incorrect statements from the following

- I. Both velocity and acceleration are zero at its highest point.
- II. Velocity is maximum and acceleration is zero at the highest point
- III. Velocity is maximum and acceleration is 'g' downwards at its highest point

Options :

1. ✓ I,II and III
2. ✗ II and III
3. ✗ I and II
4. ✗ I and III

Question Number : 60 Question Id : 7225443660 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A person standing on a tower of height 60 m throws an object upwards with velocity of 40 m/s at an angle 30^0 to the horizontal. Find the total time taken by the object to gain maximum height and fall on the ground (take $g= 10 \text{ m/s}^2$).

Options :

1. ✗ 3 s
2. ✗ 20 s
3. ✓ 6 s
4. ✗ 16 s

Question Number : 61 Question Id : 7225443661 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A bucket full of water is drawn up by a person. In this case the work done by the gravitational force is

Options :

1. ✓ Negative because the force and displacement are in opposite directions
2. ✗ Positive because the force and displacement are in the same direction
3. ✗ Negative because the force and displacement are the same direction
4. ✗ Positive because the force and displacement are in opposite direction

Question Number : 62 Question Id : 7225443662 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a long spring is stretched by x cm, its potential energy is U . If the spring is stretched by Nx cm, the potential energy stored in it will be

Options :

1. ✗ U/N
2. ✗ NU
3. ✓ N^2U
4. ✗ U/N^2

Question Number : 63 Question Id : 7225443663 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is a non-renewable source of energy?

Options :

1. ✓ Coal
2. ✗ Solar
3. ✗ Geothermal
4. ✗ Tidal

Question Number : 64 Question Id : 7225443664 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a class room has dimensions $20 \times 15 \times 5 \text{ m}^3$ and reverberation time 1.5 sec, the total absorption of all surfaces and the average absorption coefficient will be

Options :

1. ✗ 0.7 and 69
2. ✓ 69 and 0.07
3. ✗ 6.9 and 0.7

4. ✘ 0.69 and 0.7

Question Number : 65 Question Id : 7225443665 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A source of sound of frequency 450 cycles/sec is stationary but an observer is moving towards the source with 34 m/sec speed. If the speed of sound is 340 m/sec, the apparent frequency will be

Options :

1. ✘ 410 cycles/sec

2. ✘ 500 cycles/sec

3. ✘ 550 cycles/sec

4. ✔ 495 cycles/sec

Question Number : 66 Question Id : 7225443666 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A simple pendulum has a time period T in vacuum. Its time period when it is completely immersed in a liquid of density one-eighth of the density of material of the bob is

Options :

1. ✘ $\sqrt{\frac{7}{8}}T$

2. ✘ $\sqrt{\frac{5}{8}}T$

3. ✘ $\sqrt{\frac{3}{8}}T$

4. ✔ $\sqrt{\frac{8}{7}}T$

Question Number : 67 Question Id : 7225443667 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 simple harmonic motion represented by displacement function as $x(t) = A \sin(\omega t + \phi)$. If the position and velocity of the particle at $t = 0$ s are 2 cm and 2ω cm s⁻¹ respectively, then its amplitude is $x\sqrt{2}$ cm where the value of x is

Options :

1. ✔ 2

2. ✘ $2\sqrt{2}$

3. ✘ 4

4. ✘ 1

Question Number : 68 Question Id : 7225443668 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An observer standing between two parallel cliffs emits an intense sound note. If two successive echoes are heard after 5 s and 7 s, then distance between the cliffs is (velocity of sound is 340 m/s)

Options :

1. ✘ 850 m
2. ✘ 1190 m
3. ✔ 2040 m
4. ✘ 340 m

Question Number : 69 Question Id : 7225443669 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

M grams of steam at 100°C is mixed with 200 g of ice at its melting point in a thermally insulated container. If it produced liquid water at 40°C [heat of vaporization of water is 540 cal/g and heat of fusion of ice is 80 cal/g] the value of M is

Options :

1. ✘ 20
2. ✘ 80
3. ✔ 40

4. ✘ 10

Question Number : 70 Question Id : 7225443670 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which type of ideal gas will have the largest value for $C_p - C_v$?

Options :

1. ✘ Polyatomic

2. ✘ Diatomic

3. ✘ Monoatomic

4. ✔ The value will be the same for all

Question Number : 71 Question Id : 7225443671 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In thermodynamics, heat and work are

Options :

1. ✔ Path functions

2. ✘ Intensive thermodynamic state variables

3. ✘ Extensive thermodynamic state variables
4. ✘ Point functions

Question Number : 72 Question Id : 7225443672 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 an ideal gas, the fractional change in its pressure is equal to (where γ is the ratio of specific heats):

Options :

1. ✘ $-\gamma \frac{V}{dV}$
2. ✔ $-\gamma \frac{dV}{V}$
3. ✘ $-\frac{1}{\gamma} \frac{V}{dV}$
4. ✘ $-\frac{1}{\gamma} \frac{dV}{V}$

Question Number : 73 Question Id : 7225443673 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 processes must violate the first law of thermodynamics?

Options :

1. $W > 0, Q > 0, \text{ and } \Delta E_{\text{int}} < 0$
2. $W > 0, Q < 0, \text{ and } \Delta E_{\text{int}} > 0$
3. $W < 0, Q > 0, \text{ and } \Delta E_{\text{int}} < 0$
4. $W > 0, Q < 0, \text{ and } \Delta E_{\text{int}} = 0$

Question Number : 74 Question Id : 7225443674 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The critical angle for total internal reflection is maximum for

Options :

1. Red light
2. Blue light
3. Ultraviolet rays
4. Infrared rays

Question Number : 75 Question Id : 7225443675 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Photon of frequency (f) has a momentum (p) associated with it. If c is the velocity of light, the momentum is

Options :

1. hf/c

2. f/c

3. hfc

4. hf/c^2

Chemistry

Section Id :	72254475
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

Question Number : 76 Question Id : 7225443676 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Bohr's theory can be applied to which of the following ions?

Options :

1. Na^+

2. ✘ Be^{2+}

3. ✘ Li^+

4. ✔ Li^{2+}

Question Number : 77 Question Id : 7225443677 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 correct orbital designation of an electron with the quantum number , $n=4$,
 $l=3$, $m=2$, $s=1/2$?

Options :

1. ✘ 3d

2. ✔ 4f

3. ✘ 5p

4. ✘ 6s

Question Number : 78 Question Id : 7225443678 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Two electrons present in an orbital are distinguished by

Options :

1. ✘ Principal Quantum number
2. ✘ Azimuthal Quantum number
3. ✘ Magnetic Quantum number
4. ✔ Spin Quantum number

Question Number : 79 Question Id : 7225443679 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Favorable conditions for the formation of an ionic bond are

Options :

1. ✘ Small cation, large anion, high charge on both the ions.
2. ✔ Large cation, small anion, low charge on both the ions
3. ✘ Large cation, large anion, high charge on both the ions.

Small cation, small anion, high charge on both the ions

4. ✘

Question Number : 80 Question Id : 7225443680 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum covalent character is observed in

Options :

1. ✘ LiCl

2. ✘ BeCl₂

3. ✘ LiF

4. ✔ BeBr₂

Question Number : 81 Question Id : 7225443681 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a reaction of H₂SO₄ with NaOH, NaHSO₄ is formed. Equivalent weight of H₂SO₄ is

Options :

1. ✘ 49 grams

2. ✔ 98 grams

3. ✘ 98 amu

4. ✘ 49 amu

Question Number : 82 Question Id : 7225443682 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If 5.85 grams of NaCl are dissolved in water and the solution is made up to 0.5 litre, the molarity of solution will be:

Options :

1. ✔ 0.2

2. ✘ 0.4

3. ✘ 1.0

4. ✘ 0.1

Question Number : 83 Question Id : 7225443683 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The solution of Mercury with other metals is called

Options :

1. ✘ Saturated solutions

- 2. ✘ Unsaturated solutions
- 3. ✔ Amalgam
- 4. ✘ Supersaturated solutions.

Question Number : 84 Question Id : 7225443684 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A strong acid has a

Options :

- 1. ✘ Weak conjugate acid
- 2. ✔ Weak conjugate base
- 3. ✘ Strong conjugate base
- 4. ✘ Strong conjugate acid

Question Number : 85 Question Id : 7225443685 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Electron pair donor is

Options :

1. ✘ Lowry- Bronsted base
2. ✘ Lowry- Bronsted acid
3. ✘ Lewis acid
4. ✔ Lewis base

Question Number : 86 Question Id : 7225443686 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The poor conductor of the electricity among the following is:

Options :

1. ✘ Copper
2. ✘ Aluminium
3. ✘ Silver
4. ✔ Pure water

Question Number : 87 Question Id : 7225443687 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The amount of electricity that can deposit 108 g of silver from AgNO_3 solution is

Options :

1. ✘ 1 ampere
2. ✘ 1 coulomb
3. ✔ 1 faraday
4. ✘ 1 siemen

Question Number : 88 Question Id : 7225443688 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 false regarding galvanic cells?

Options :

1. ✘ It converts chemical energy into electrical energy
2. ✘ The electrolytes taken in the two beakers are different
3. ✔ The reactions taking place are non-spontaneous

4. ✖ To set up this cell, a salt bridge is required

Question Number : 89 Question Id : 7225443689 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 standard reduction potential of cathode of a galvanic cell if the standard EMF of the cell and standard reduction potential of the anode are 2.71 volts and -2.37 volts respectively?

Options :

1. ✖ 0.68 volts
2. ✖ -0.68 volts
3. ✖ -0.34 volts
4. ✔ 0.34 volts.

Question Number : 90 Question Id : 7225443690 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hardness of water is conventionally expressed in terms of equivalent amount of

Options :

1. ✖ MgCO_3

2. ✓ CaCO_3

3. ✗ Na_2CO_3

4. ✗ K_2CO_3

Question Number : 91 Question Id : 7225443691 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Zero hardness of water is achieved by

Options :

1. ✗ Using Lime soda process

2. ✗ Excess lime treatment

3. ✗ Using excess alum dosage

4. ✓ Ion-Exchange method

Question Number : 92 Question Id : 7225443692 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 hardness of water in terms of CaCO_3 equivalent if water contains 27.6 mg/L of MgSO_4

Options :

1. ✓ 23 mg/L
2. ✗ 2.3 mg/L
3. ✗ 28 mg/L
4. ✗ 12 mg/L

Question Number : 93 Question Id : 7225443693 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Electrochemical corrosion in acidic environment is carried with

Options :

1. ✗ Evolution of oxygen
2. ✗ Absorption of oxygen
3. ✓ Evolution of hydrogen

4. ✖ Absorption of hydrogen

Question Number : 94 Question Id : 7225443694 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 metal oxide film is protective from corrosion?

Options :

1. ✖ Porous

2. ✔ Non- porous

3. ✖ Volatile

4. ✖ Unstable

Question Number : 95 Question Id : 7225443695 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 thermosetting plastic?

Options :

1. ✖ PVC

2. ✖ Teflon

3. ✘ Polystyrene

4. ✔ Bakelite

Question Number : 96 Question Id : 7225443696 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ebonite is

Options :

1. ✔ highly vulcanized rubber

2. ✘ PVC

3. ✘ Synthetic rubber

4. ✘ polystyrene

Question Number : 97 Question Id : 7225443697 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Buna-S rubber is made up of the monomers of

Options :

1. ✘ 1,3 butadiene and acrylonitrile

2. ✓ 1,3 butadiene and styrene
3. ✗ 1,3 butadiene and formaldehyde
4. ✗ 1,3 butadiene and phenol

Question Number : 98 Question Id : 7225443698 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Composition of water gas is

Options :

1. ✗ $\text{CO} + \text{N}_2$
2. ✗ $\text{CO} + \text{CH}_4$
3. ✓ $\text{CO} + \text{H}_2$
4. ✗ $\text{CH}_4 + \text{N}_2$

Question Number : 99 Question Id : 7225443699 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 green house gas

Options :

1. Hydrogen
2. Carbon monoxide
3. Methane
4. Nitrous oxide

Question Number : 100 Question Id : 7225443700 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Photochemical smog is due to the presence of

Options :

1. Oxide of carbon
2. Lead
3. Oxide of sulphur
4. Oxide of nitrogen

Agricultural Engineering

Section Id :	72254476
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

Question Number : 101 Question Id : 7225443701 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A wedge shaped construction in hand hammer is called

Options :

1. ✘ But
2. ✘ Brush
3. ✔ Peen
4. ✘ Pan

Question Number : 102 Question Id : 7225443702 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 joining two pieces of sheet metal permanently without any heat energy
is

Options :

1. ✘ Soldering
2. ✘ Spot welding
3. ✔ Riveting
4. ✘ Brazing

Question Number : 103 Question Id : 7225443703 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In S. I system, the unit of power is watt, which is equal to

Options :

1. ✘ Newton
2. ✔ Joule per second
3. ✘ Joule per min
4. ✘ Newton-meter

Question Number : 104 Question Id : 7225443704 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Tool post of lathe is located on the top of

Options :

1. ✘ Tail piece
2. ✘ Saddle
3. ✘ Apron
4. ✔ Compound rest

Question Number : 105 Question Id : 7225443705 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Zinc-coated iron sheet is known as

Options :

1. ✘ Black Iron sheet
2. ✔ Galvanized Iron sheet
3. ✘ Tin plate sheet
4. ✘ Stainless steel

Question Number : 106 Question Id : 7225443706 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The shelling of paddy in rubber roll sheller is due to

Options :

1. ✓ Shearing
2. ✗ Impact
3. ✗ Compression
4. ✗ Tearing

Question Number : 107 Question Id : 7225443707 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Kinematic viscosity of liquid having 5 poise viscosity and 0.8 specific gravity is

Options :

1. ✗ 6.25×10^{-4} stokes
2. ✗ 6.25×10^{-2} stokes
3. ✗ 6.25×10^{-3} stokes
4. ✓ 6.25×10^{-4} m²/s

Question Number : 108 Question Id : 7225443708 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The velocity ratio in a single fixed pulley is

Options :

1. ✘ Zero
2. ✔ One
3. ✘ Two
4. ✘ Three

Question Number : 109 Question Id : 7225443709 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Stream velocity can be determined approximately by

Options :

1. ✘ Wire gauge
2. ✘ Bubble gauge
3. ✔ Float
4. ✘ Pressure gauge

**Question Number : 110 Question Id : 7225443710 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Bernoulli's theorem is based on the principle of conversation of

Options :

1. ✘ Velocity
2. ✘ Mass
3. ✘ Pressure
4. ✔ Energy

**Question Number : 111 Question Id : 7225443711 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which of the following is a non-recording type rain gauge

Options :

1. ✘ Weighing type
2. ✔ Simon's
3. ✘ Tipping bucket

4. ✘ Float type

Question Number : 112 Question Id : 7225443712 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Wetted perimeter of trapezoidal channel of side slopes 1:1.5 with bottom width 1.5 m and depth of flow 2.5 m is

Options :

1. ✘ 6.8 m

2. ✘ 6.0 m

3. ✘ 9.4 m

4. ✔ 10.5 m

Question Number : 113 Question Id : 7225443713 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

On which law of thermodynamics, refrigeration system works

Options :

1. ✘ Zeroth

2. ✘ First

3. Second

4. Third

Question Number : 114 Question Id : 7225443714 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Example for fluid link, in which the motion is transmitted with the help of fluid pressure is

Options :

1. Crank

2. Piston

3. Rope drive

4. Hydraulic brake

Question Number : 115 Question Id : 7225443715 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which part of tractor indicates the engine hour as well as engine revolution per minute

Options :

1. Hour meter

- 2. ✘ Speedo meter
- 3. ✘ Light switch
- 4. ✘ Power button

Question Number : 116 Question Id : 7225443716 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The compression ratio of diesel engine is

Options :

- 1. ✘ 5:1 to 8:1
- 2. ✘ 10:1 to 19:1
- 3. ✔ 14:1 to 22:1
- 4. ✘ 24:1 to 30:1

Question Number : 117 Question Id : 7225443717 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 secondary windings of ignition coil compared to primary windings will be

Options :

1. ✘ Less
2. ✔ More
3. ✘ Equal
4. ✘ half

**Question Number : 118 Question Id : 7225443718 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 used to measure the distance?

Options :

1. ✘ Tape
2. ✘ Pacing
3. ✘ Pedometer
4. ✔ Barometer

**Question Number : 119 Question Id : 7225443719 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Fore and back bearings of a line differ exactly by

Options :

1. ✘ 60°
2. ✘ 90°
3. ✔ 180°
4. ✘ 360°

Question Number : 120 Question Id : 7225443720 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Instrument used for fixing perpendicular line is

Options :

1. ✔ Cross staff
2. ✘ Whites
3. ✘ Plumb bob
4. ✘ Chain

Question Number : 121 Question Id : 7225443721 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Tang is the part of

Options :

1. ✘ Saw
2. ✘ Wing compass
3. ✘ Bevel square
4. ✔ Chisel

Question Number : 122 Question Id : 7225443722 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The shifting of the level in levelling indicates

Options :

1. ✘ Back sight
2. ✘ Fore sight
3. ✔ Change point
4. ✘ Front sight

Question Number : 123 Question Id : 7225443723 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which method of contouring is most suitable for hilly terrains

Options :

1. ✘ Cross section
2. ✔ Tachometric
3. ✘ Direct
4. ✘ Square

Question Number : 124 Question Id : 7225443724 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Angle, if main scale reading of theodolite is $344^{\circ}-40'$ and vernier division as 16, is

Options :

1. ✘ $345^{\circ}-40'-20''$
2. ✘ $344^{\circ}-40'-20''$
3. ✔ $344^{\circ}-45'-20''$

4. ✘ $345^{\circ}-45'-20''$

Question Number : 125 Question Id : 7225443725 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Measure of the sharpness of the corners of the solid is

Options :

1. ✘ Circularity
2. ✘ Sphericity
3. ✘ Linearity
4. ✔ Roundness

Question Number : 126 Question Id : 7225443726 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 part is related to dynamo

Options :

1. ✔ Armature
2. ✘ Volute Casing
3. ✘ Valve

4. ✘ Impeller

Question Number : 127 Question Id : 7225443727 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Ability of material to absorb energy before fracture is known as

Options :

1. ✘ Malleability

2. ✘ Creep

3. ✔ Toughness

4. ✘ Brittleness

Question Number : 128 Question Id : 7225443728 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Photovoltaic solar cells are made of

Options :

1. ✘ Carbon

2. ✔ Silicon

3. ✘ Gun metal

4. ✖ Aluminium

Question Number : 129 Question Id : 7225443729 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Recommended speed of belt for carrying grain derivatives is

Options :

1. ✖ 3.5 m/s

2. ✔ 2.5 m/s

3. ✖ 1.5 m/s

4. ✖ 0.5 m/s

Question Number : 130 Question Id : 7225443730 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Soil particles greater than 2 mm diameter are called

Options :

1. ✖ Sand

2. ✖ Cement

3. ✘ Stone

4. ✔ Gravel

Question Number : 131 Question Id : 7225443731 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The application efficiency of drip irrigation system in greenhouse is

Options :

1. ✘ 70 %

2. ✘ 75-85 %

3. ✔ 90-95 %

4. ✘ 95-98 %

Question Number : 132 Question Id : 7225443732 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The distance of centre of gravity of an equilateral triangle from any of three sides with each side equal to 'a' cm is

Options :

1. ✘ $\frac{a\sqrt{3}}{2}$

2. ✘ $\frac{a\sqrt{2}}{3}$

3. ✔ $\frac{a}{2\sqrt{3}}$

4. ✘ $\frac{a}{3\sqrt{2}}$

Question Number : 133 Question Id : 7225443733 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Load lifted / effort applied is called as

Options :

1. ✘ Velocity ratio

2. ✔ Mechanical advantage

3. ✘ Pitch

4. ✘ Effort

Question Number : 134 Question Id : 7225443734 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

GPS stands for

Options :

1. Global position system
2. Global permanent system
3. German position system
4. Global position society

**Question Number : 135 Question Id : 7225443735 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is used to connect ridge and furrow type green house?

Options :

1. V-frame
2. X-frame
3. U-frame
4. A-frame

Question Number : 136 Question Id : 7225443736 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Separation of dry and wet grains is possible with

Options :

1. ✘ Inclined belt
2. ✘ Concentric drum
3. ✘ Indented disc
4. ✔ Pneumatic separator

Question Number : 137 Question Id : 7225443737 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The implement which is attached to the tractor along a hinge axis and not a single hitch point is

Options :

1. ✘ Trailed type
2. ✔ Semi-mounted type
3. ✘ Mounted type

4. ✘ Center of power

Question Number : 138 Question Id : 7225443738 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 land that receives irrigation water under a project in a year is known as

Options :

1. ✔ Net irrigated area

2. ✘ Command area

3. ✘ Delta

4. ✘ Gross command area

Question Number : 139 Question Id : 7225443739 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The role of aspirators in rice milling is to remove

Options :

1. ✘ Bran

2. ✔ Husk

3. ✘ Germ

4. ✘ Endosperm

Question Number : 140 Question Id : 7225443740 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most efficient cross section of open channel is

Options :

1. ✔ Semi-circular

2. ✘ Trapezoidal

3. ✘ Parabolic

4. ✘ Rectangular

Question Number : 141 Question Id : 7225443741 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the material is passed only once through equipment, then the process of grinding is

Options :

1. ✘ Closed circuit

2. ✔ Open circuit

- 3. ✘ Free crushing
- 4. ✘ Close crushing

Question Number : 142 Question Id : 7225443742 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Filter aid increases

Options :

- 1. ✘ Resistance of cake
- 2. ✘ Temperature of cake
- 3. ✘ Density of cake
- 4. ✔ Porosity of cake

Question Number : 143 Question Id : 7225443743 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 mainly used for

Options :

- 1. ✘ Pulses

- 2. ✘ Millets
- 3. ✘ Groundnut
- 4. ✔ Wheat

Question Number : 144 Question Id : 7225443744 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The lines joining equal amount of rainfall are known as

Options :

- 1. ✔ Isohyets
- 2. ✘ Iso crones
- 3. ✘ Iso bars
- 4. ✘ Iso baths

Question Number : 145 Question Id : 7225443745 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Air velocity to keep the grains in suspension

Options :

1. 15-30 m/s
2. 30-45 m/s
3. 40-50 m/s
4. 50-65 m/s

Question Number : 146 Question Id : 7225443746 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A speed of centrifugal dehusker ranges between

Options :

1. 500-1500 rpm
2. 1500-2500 rpm
3. 2500-3000 rpm
4. 3000-4500 rpm

Question Number : 147 Question Id : 7225443747 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The CO₂ content in atmosphere is

Options :

1. ✘ 0.245%
2. ✔ 0.345%
3. ✘ 0.445%
4. ✘ 0.545%

Question Number : 148 Question Id : 7225443748 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total depth of water applied to the crop is called

Options :

1. ✘ Duty
2. ✘ Net irrigation
3. ✘ Base period
4. ✔ Delta

Question Number : 149 Question Id : 7225443749 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equipment used for inter cultivation operation in SRI paddy cultivation is

Options :

1. ✘ Hand hoe
2. ✔ Cono weeder
3. ✘ Spade
4. ✘ Sickle

Question Number : 150 Question Id : 7225443750 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Infiltration is measured in field by

Options :

1. ✔ Double ring method
2. ✘ Lysimeter
3. ✘ USWB Class A pan
4. ✘ Rain gauge

Question Number : 151 Question Id : 7225443751 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Soil erosion by rain drop is called

Options :

1. ✘ Rill erosion
2. ✘ Inter rill erosion
3. ✔ Splash erosion
4. ✘ Sheet erosion

Question Number : 152 Question Id : 7225443752 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A device used to cut the furrow vertically on land ahead of plough bottom is

Options :

1. ✘ Share
2. ✘ Shovel
3. ✘ Gunnel
4. ✔ Coulter

Question Number : 153 Question Id : 7225443753 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Sub-soiler plough is best suited for

Options :

1. ✘ Puddling
2. ✔ Deep ploughing and Breaking hard pan
3. ✘ Making ditches
4. ✘ Inter cultivation

Question Number : 154 Question Id : 7225443754 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Most important component of sprinkler irrigation system is

Options :

1. ✘ Lateral pipe
2. ✔ Sprinkler head
3. ✘ Riser pipe
4. ✘ Debris screen

Question Number : 155 Question Id : 7225443755 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The percent oil loss (left with cake) in hydraulic press ghani is

Options :

1. ✘ 3-4%
2. ✔ 7-8%
3. ✘ 10-12%
4. ✘ 12-14%

**Question Number : 156 Question Id : 7225443756 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

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

Options :

1. ✔ Clutch
2. ✘ Gearbox
3. ✘ Differential
4. ✘ Final drive

Question Number : 157 Question Id : 7225443757 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Contour bunds are not suitable in

Options :

1. ✘ Sandy soils
2. ✘ Red soils
3. ✔ Black cotton soils
4. ✘ Light soils

Question Number : 158 Question Id : 7225443758 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The specific gravity for fully charged battery is

Options :

1. ✘ 1.12
2. ✔ 1.28
3. ✘ 1.32
4. ✘ 1.52

Question Number : 159 Question Id : 7225443759 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The fuel gas used for welding of metal is

Options :

1. ✘ Biogas
2. ✘ Coal gas
3. ✘ Producer gas
4. ✔ Acetylene gas

Question Number : 160 Question Id : 7225443760 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The tilt angle of disc plough varies between

Options :

1. ✘ $10 - 15^{\circ}$
2. ✔ $15 - 25^{\circ}$
3. ✘ $30 - 35^{\circ}$
4. ✘ $40 - 45^{\circ}$

**Question Number : 161 Question Id : 7225443761 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The hydraulic system does not lift the implement due to

Options :

1. Defective control valve
2. Higher Engine oil level
3. Engine overloaded
4. PTO non function

**Question Number : 162 Question Id : 7225443762 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 years of rainfall data to be considered for the design of permanent structures is

Options :

1. 10-20
2. 20-25
3. 25-50
4. 50-60

Question Number : 163 Question Id : 7225443763 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Vertical suction of a plough influences

Options :

1. ✘ Pulverization
2. ✔ Depth of cut
3. ✘ Soil turning
4. ✘ Direction of pull

Question Number : 164 Question Id : 7225443764 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 brake used in power tillers is

Options :

1. ✔ Inner side expansion
2. ✘ Outer side expansion
3. ✘ Hydraulic brake

4. ✘ Disc brake

Question Number : 165 Question Id : 7225443765 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Method of ploughing in which plough works round a strip of unploughed land is

Options :

1. ✘ Gathering

2. ✔ Casting

3. ✘ Head land

4. ✘ Dead furrow

Question Number : 166 Question Id : 7225443766 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Thickness of disc of standard disc plough varies from

Options :

1. ✔ 5 to 10 mm

2. ✘ 15 to 20 mm

3. ✘ 40 to 60 mm

4. ✘ 60 to 90 mm

Question Number : 167 Question Id : 7225443767 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

One HP is equal to

Options :

1. ✔ 75 Kg m/sec
2. ✘ 75 Kg m/min
3. ✘ 4500 Kg m/sec
4. ✘ 4500 Kg m/min

Question Number : 168 Question Id : 7225443768 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Common types of cooling pads used in green houses are made of

Options :

1. ✘ Wood
2. ✘ Aluminium

3. ✘ Glass

4. ✔ Cellulose

Question Number : 169 Question Id : 7225443769 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ability of air to remove solar heat from the greenhouse depends upon its

Options :

1. ✘ Volume

2. ✔ Weight

3. ✘ Mass

4. ✘ Speed

Question Number : 170 Question Id : 7225443770 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The greenhouse constructed on hilly terrains is

Options :

1. ✘ Lean-to type

- 2. ✘ Ridge and furrow type
- 3. ✔ Uneven span type
- 4. ✘ Quonset type

Question Number : 171 Question Id : 7225443771 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Rocker sprayers are operated at pressure of

Options :

- 1. ✘ 0 to 7 kg/cm²
- 2. ✔ 14 to 18 kg/cm²
- 3. ✘ 18 to 20 kg/cm²
- 4. ✘ 20 to 24 kg/cm²

Question Number : 172 Question Id : 7225443772 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In spark ignited engine the atomization of fuel takes place in

Options :

1. ✘ Radiator
2. ✘ Ignition chamber
3. ✔ Carburettor
4. ✘ Cylinder

Question Number : 173 Question Id : 7225443773 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The shoe is provided in the reaper to

Options :

1. ✔ Regulate the height of cut
2. ✘ Regulate the blade
3. ✘ Regulate the width of cut
4. ✘ Regulate the engine speed

Question Number : 174 Question Id : 7225443774 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The seed cotton is removed from the machines with tapered spindles by means of rotating

Options :

1. ✘ Straight spindles
2. ✘ Sprocket chain
3. ✘ Spindle moistener
4. ✔ Doffer plate

Question Number : 175 Question Id : 7225443775 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

With a solar focusing type collector, highest temperature that can be achieved is about

Options :

1. ✘ 100 °C
2. ✘ 300 °C
3. ✔ 500 °C
4. ✘ 1000 °C

Question Number : 176 Question Id : 7225443776 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The biogas plant in which floating drum is present

Options :

1. KVIC design
2. Deenabandu
3. Fixed dome
4. Portable Polyethylene type

Question Number : 177 Question Id : 7225443777 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A popular dryer used in paddy processing industry or in modern rice mills originated from USA is

Options :

1. Reciprocating dryer
2. Circular bin dryer
3. Deep bed dryer
4. LSU dryer

**Question Number : 178 Question Id : 7225443778 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Wind speed in relation to height

Options :

1. ✘ Decreases
2. ✔ Increases
3. ✘ No change
4. ✘ Exponential decrease

**Question Number : 179 Question Id : 7225443779 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Gypsum is added to reclaim

Options :

1. ✘ Saline soils
2. ✔ Alkali soils
3. ✘ Salt affected soils

4. ✘ Poorly drained soils

Question Number : 180 Question Id : 7225443780 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For natural ventilation flow path, the preferred shape of green house is

Options :

1. ✘ Even span
2. ✘ Uneven span
3. ✔ Quonset
4. ✘ Ridge and furrow

Question Number : 181 Question Id : 7225443781 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Direct radiation is also known as

Options :

1. ✘ Solar radiation
2. ✔ Beam radiation

- 3. ✘ Diffusion radiation
- 4. ✘ Global radiation

Question Number : 182 Question Id : 7225443782 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Most commonly used holding tool in workshop is

Options :

- 1. ✔ Bench vice
- 2. ✘ Die stock
- 3. ✘ Tap wrench
- 4. ✘ Die wrench

Question Number : 183 Question Id : 7225443783 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The temperature in box type solar cooker is around

Options :

- 1. ✘ 50 °C
- 2. ✘ 75 °C

3. ✓ 100 °C

4. ✗ 300 °C

Question Number : 184 Question Id : 7225443784 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Inundation irrigation system is also called as

Options :

1. ✓ Flood irrigation

2. ✗ Flow irrigation

3. ✗ Lift irrigation

4. ✗ Border irrigation

Question Number : 185 Question Id : 7225443785 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The device used for keeping the disc at equal spacing on the gang of disc harrow is

Options :

1. ✗ Bumper

- 2. ✓ Spool
- 3. ✘ Arbor
- 4. ✘ Middle tine

Question Number : 186 Question Id : 7225443786 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Perforated pipe sprinkler is best suited, when height of crop doesn't exceed

Options :

- 1. ✘ 10-40 cm
- 2. ✓ 30-70 cm
- 3. ✘ 60-90 cm
- 4. ✘ 100 cm

Question Number : 187 Question Id : 7225443787 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Substances with one or two valence electrons are called as

Options :

- 1. ✘ Conductors

2. ✘ Resistors
3. ✘ Insulators
4. ✔ Good conductors

Question Number : 188 Question Id : 7225443788 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Material used for manufacturing of power chaff cutter blade is

Options :

1. ✘ Iron
2. ✘ Plastic
3. ✘ Wood
4. ✔ Carbon steel

Question Number : 189 Question Id : 7225443789 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In raspbar cylinder, usually number of bars fixed to the cylinder are

Options :

1. ✘ 0-4
2. ✔ 6-8
3. ✘ 18-28
4. ✘ 28-38

Question Number : 190 Question Id : 7225443790 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Shovel type furrow openers are best suited for

Options :

1. ✔ Stony or Root infested fields
2. ✘ Clay soil
3. ✘ Black soil
4. ✘ Red soil

Question Number : 191 Question Id : 7225443791 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A hydrograph is a plot of

Options :

1. ✘ Rainfall intensity and time
2. ✔ Runoff discharge and time
3. ✘ Cumulative rainfall and time
4. ✘ Cumulative runoff and time

Question Number : 192 Question Id : 7225443792 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A part of rainfall that flows over the ground surface directly into streams is

Options :

1. ✔ Direct runoff
2. ✘ Overland flow
3. ✘ Base flow
4. ✘ Interflow

Question Number : 193 Question Id : 7225443793 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The process by which water vapour leaves the living plant body and enters the atmosphere is

Options :

1. ✘ Evaporation
2. ✔ Transpiration
3. ✘ Precipitation
4. ✘ Interception

Question Number : 194 Question Id : 7225443794 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The inflation pressure in the rear wheels of the tractor varies between

Options :

1. ✘ $0.2 - 0.6 \text{ kg/cm}^2$
2. ✔ $0.8 - 1.5 \text{ kg/cm}^2$
3. ✘ $1.8 - 1.9 \text{ kg/cm}^2$
4. ✘ $2.6 - 3.5 \text{ kg/cm}^2$

Question Number : 195 Question Id : 7225443795 Display Question Number : Yes Is Question Mandatory : No Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Flaking can be accomplished by

Options :

1. ✓ Roller mill
2. ✗ Gyratory crusher
3. ✗ Disc mill
4. ✗ Burr mill

**Question Number : 196 Question Id : 7225443796 Display Question Number : Yes Is Question Mandatory : No Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The area covered by a combine with 4 m cutter bar running at 4 kmph is

Options :

1. ✓ 1.6 ha/hr
2. ✗ 2.4 ha/hr
3. ✗ 3.6 ha/hr
4. ✗ 3.8 ha/hr

Question Number : 197 Question Id : 7225443797 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The loss of head due to friction according to Darcy's formula is

Options :

1. ✘ $4flv^2 / 2g$
2. ✔ $4flv^2 / 2gd$
3. ✘ $4flv / gd$
4. ✘ $4fl^2 / 2d$

Question Number : 198 Question Id : 7225443798 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Minimum temperature at which the fuel will ignite is known as

Options :

1. ✘ Melt point
2. ✘ Pour point
3. ✘ Cloud point
4. ✔ Flash point

Question Number : 199 Question Id : 7225443799 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 converting solid biomass with a limited quantity of air into producer gas is

Options :

1. ✓ Gasification
2. ✘ Combustion
3. ✘ Pyrolysis
4. ✘ Liquification

Question Number : 200 Question Id : 7225443800 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Tractor flywheel having a gear is called as

Options :

1. ✓ Ring gear
2. ✘ Crown wheel
3. ✘ Bull gear

4. ✖ Helical gear